CHAPTER 12

MAJOR FINDINGS AND CONCLUSIONS

12.1 Introduction

This chapter summarizes the major research outcomes from the present work. The key research contributions made in terms of managerial and theoretical implications are also presented. Finally, the limitations of the study are identified along with possible extensions and suggestions for future research effort.

12.2 Summary of major research findings

The main objective of this research was to develop models inspired by biological systems that can be referred by managers for finding solutions to specific problems and for enhancing overall organizational performance. It primarily involved visualizing human body as an optimally designed and managed organization, and identifying principles and strategies used by it in managing itself. Such principles and strategies were then used as the base for creating models to achieve organizational excellence in various fields. Specific models developed and the insights from them are summarized as follows:

A model is developed using ISM and AHP to understand the relationship between human body’s attributes which possibly make it a perfect organization. These attributes were identified based on the comparison between human body and corporate body with respect to four classical managerial functions; namely planning, organizing, directing and controlling. The examination of human body organization subsystems has revealed fifteen attributes that enable human body to become an optimally managed organization. The model also shows the strategic, operational, and performance attributes in driving towards effective and efficient goal achievement.

Additionally, SAP-LAP analysis of the same human body attributes is also done which provides a glimpse of various situations, actors and processes; learning, actions and performance prudent in the human body organizations from a managerial perspective. It can be observed from the analysis that human body follows holistic view with strategically optimized flexibility. The flexibility may vary from zero to near hundred percent depending upon its functional importance to rest of the body. Also, collaboration among group members, joint problem solving, transformation to a high performing and more committed system are among other human body strategies.
revealed from the framework. This framework also locates key result areas so that organizations can give higher priority to them. It includes effective and efficient management of resources, readiness to face external challenges, reduced deviations and appropriate performance appraisal tool.

Another human body organization model is developed using Total Interpretive Structural Modeling (TISM) technique to bring the interrelationship among the enablers of organizational excellence which are derived from human body. To identify the enablers the human body systems and sub-systems were analyzed from organizational perspective. The examination of human body organization subsystems has revealed nine attributes that enable human body to achieve performance. The nine attributes are: quick responsiveness to external stimuli, coordination, communication, control, optimal supply chain management, adaptability, reliability & maintainability, innovativeness and being self driven. Subsequently, these enablers were subjected to confirmation by reviewing their relevance in current management scenario as well as by taking expert and stakeholders’ opinion. A bio-inspired model of organizational excellence has resulted from TISM methodology. The model developed demonstrates the key parameters and their interplay in achieving organizational excellence.

The proposed bio-inspired model of organizational excellence has been validated by conducting a survey using SEM. Besides, AHP has also been applied to find relative importance of each enabler. The usefulness of the proposed model has been confirmed by testing it on two companies by evaluating the degree of organizational excellence achieved by them. The results were also compared with the score obtained on EFQM model of business excellence to further validate the proposed model.

Another framework is developed using ISM to understand the variables of line and staff conflict in business organizations. Moreover, working of human body has been analyzed for each of these variables to derive meaningful insights for elimination of inter-group conflict in organizations.

A detailed comparison of human body cell and organizational employee is also done. The strategies followed by human body for effectively handling performance of various types of cells are studied in detail. Inspired from cell death mechanism in human body, a Management Action Grid is also proposed. The grid suggests possible actions to the manager depending upon the employee performance and his tenure with the company.
The importance of flexibility in the organization is examined by analyzing its varying degree in human body. Interestingly, it has been observed that in human body the degree of flexibility offered to any system is based on its functional requirement and its implication to the overall system. A flexibility valuation grid is also proposed based on which insights to inculcate optimal degree of flexibility for the organization can be drawn.

In the present study bio-inspired analogies of team work have also been developed. In this analogy muskmelon has been visualized as Nature’s perfect example of a High Performance Team (HPT) whereas an orange as an example of a Pseudo Team (PT)- orange organization. It shows that the members of melon organization are so closely bounded that no one can make out that a particular part of the pulp belongs to which section of its skin. Whereas in the orange organization, the members are actually individuals who are contained within a cover that gives an impression of belonging to the same team.

Furthermore, reverse analogies are also developed to derive insights for better management of human body inspired from theories and principles of management science. For this purpose, two dimensions are taken wherein sub-optimality in the operation of human body performance can be seen. First is food intake habits and digestion and second is individual’s value system and behavior. The said objectives have been achieved by developing analogies between the inventory flow as envisaged in materials management and the food and other essential inputs that flow through the human body. Analogies were also developed between organizational cultures with the individual’s value system. Thereafter certain recommendations are made to humans to better manage themselves based on these analogies.

12.3. Significant research contributions made

The theoretical implications of the present study lie in the contribution to the body of knowledge by filling gaps in the literature and by establishing a new management paradigm. The present study contributes an altogether new management philosophy to the body of management literature. Significant research contributions made with this research are summarized as follows:

i. The human body organization model proposed in this research shows attributes of optimal goal achievement. The proposed model can help managers in deciding strategies to improve the design and functioning of organization.
ii. A Human Body Inspired Model of Organizational Excellence has been proposed in the thesis which can be used by the organizations for assessing the level of organizational excellence achieved. This will further help them in deciding the key focus areas for achieving organizational excellence.

iii. A model representing line and staff function conflict has been proposed. The analysis of the proposed model with respect to human body reveals the key strategies behind elimination of line-staff function conflict.

iv. A Management Action Grid inspired from cell death mechanism in human body has been proposed for the first time to suggest ways to handle employees’ performance.

v. A Flexibility Valuation Grid inspired from human body has been proposed based on which insights to inculcate optimal degree of flexibility can be derived.

vi. Biological metaphors (muskmelon and orange) representing a high performing team and a pseudo team have been proposed. The proposed metaphors can be used for pedagogical purpose for representing effective teamwork. It may also help managers to better understand a Real Team that can be developed into a high performing team.

vii. Finally, the present study also suggests insights for better management of human body in terms of its health and behavior inspired from principles and theories of management science.

viii. The uniqueness of proposed models and the insights lies in the fact that they are developed considering a benchmark which is the best creation of Nature and perfect in itself. So by mimicking a variety of elements in Nature’s creations, the resulting philosophy may not only respond to various activities within the organization but also to the surrounding environment. It is hoped that this study would prove valuable for the organizations in significantly improving their structure and operating procedures in order to enhance the performance of individuals and organization as a whole.

12.4 Limitations of the study

Though this study has significantly contributed to different areas as mentioned, but still it has certain limitations. Since this is very new area of study and with very meager literature available on analysis of managerial aspects in human body, therefore the conceptual framework used has been developed based on the understanding of researcher with the help of few experts.
Furthermore, the parameters identified were based on subjective assessment and therefore need further validation by conducting more rigorous surveys.

This research effort has identified the tip of the iceberg. There are plethoraas of issues that demand empirical assessment and future research studies would perhaps address to the issues being identified by this research.

12.5 Possible extensions and suggestions for future research effort

The analogies identified can be extended to sub system level for a greater in-depth analysis which may subsequently generate more insights. The validation of the models can further be done by administering more rigorous surveys. Furthermore, since the implementation of the developed insights requires a lot of strategic involvement, their utility can be enhanced by testing it in various practical situations.

Many insights recommended in the thesis are at a conceptual stage which in future can be developed into qualitative prescriptive tools with rich practical implications. Further analysis of insights observed would develop them as principles and would facilitate organizations significantly in managing line-staff or other inter-group conflicts.

A causal model using system dynamics modeling can perhaps be developed to show what causes human body to have those functional capabilities and flexibility.

This is a very raw area of study wherein a lot can be done. In fact a richer analysis can generate extremely useful insights for effective problem solving, strategic planning and sustainable growth of organizations.

12.6. Conclusions

Based on the analogies identified between human body and corporate organizations, it was seen that there is lot that can be learnt from human body, the Nature’s best creation. The primary objective of the present study has been achieved by deriving insights that can be helpful in managing various issues in business organizations. This has been done by analyzing and understanding the strategies followed by the human body in optimally managing various issues related to its constituent units. In this research a generalized illustrative model inspired from human body has been presented which indicates key enablers essential for sustainable growth of modern business organizations. The final model developed can be used by businesses for self evaluating the level of excellence achieved. Also it can help
practicing managers to identify the major focus areas for achieving organizational excellence.

Moreover, in this research few bio-inspired models have also been suggested to address some specific organizational issues like (a) conflict resolution between the line and staff discrepancies based on inspirations drawn from human body, (b) employee performance appraisal system based on process of cell suicide mechanisms in human body, (c) inculcating optimal degree of flexibility in structure and processes of organizations.

In this thesis, endeavor has also been made to explore the natural processes and managerial principles found in Nature’s creations other than human body, like fostering team work based on comparison of two fruits i.e. muskmelon and orange, which represent high performance team and pseudo team respectively.

In the present study, aspects that are relatively weak in management of human body have also been studied. For such aspects, insights based on management science principles have been suggested. For example, (a) insights for improving our eating habits and improve our body digestion based on principles of organizational supply chain management, (b) improving value system of a person based on Denison’s model of organizational culture.

From the comparisons, it was seen that such analogies offer a new and innovative way of looking at both systems (Nature and organizational management) for cross fertilization of ideas and to learn from each other wherever possible. This research marks a beginning in developing bio-inspired principles for organizational transformation. Therefore, it is envisaged that the knowledge gained from this study should provide valuable information to both the academics as well as the practitioners. So, it is hoped that some ways for redesigning the organizations can be developed based on outcomes of this thesis, which in turn may help organizations in achieving desired goals and objectives and will pave way for their growth and expansion in present competitive world.