

Managing Socio-technical Change in Indian Automobile Industry – A Survey

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ABSTRACT

Management of change has assumed a great deal of importance in Indian automobile industry. Managing change is posing a big challenge to Indian firms in the wake of globalization and liberalization. Successful change demands that all major areas of an organization are kept in focus concurrently. These areas are technology, structure, systems, people and culture. It is seen that all these areas are interwoven and cannot be emphasized upon in isolation. This paper presents the current status of socio-technical change in Indian automobile industry. The study has been made through survey in Indian automobile companies using a specially designed questionnaire.

Introduction

The study of change and its management has been the greatest themes in the social sciences. Many social science disciplines have developed theoretical literature and empirical findings about the birth, development, transformation, decay, and decline of human and natural systems. The development theories of change in the organization studies have been faced with the hurdle of scholarly quality and practical relevance (Pettigrew, 1987). In this paper, it is emphasized that for successful organizational change,

changes in various areas like technology, structure, systems, people and culture are needed. The paper also contains findings of a survey of managing socio-technical change in Indian automobile industry.

Change Management

According to Prosci (2002), “change management represents the processes, tools and techniques to manage the people-side of business change to achieve the required business outcomes, and also to realize that business changes can be met effectively within the social infrastructure of the workplace”. This definition has been commonly used among practitioners and end-users.

Van (1986) has considered ‘technology change’ for making organizational change. He has treated ‘people’ for the development and implementation of technological change in an organization. Duck (1993) has felt the need to take people into confidence while making change in an organization. The author has emphasized the change paradoxes and mentioned that “trust is hardest to develop and achieve when you need it most” in a change programme.

To accomplish change in an organization, traditional measures need to be controlled/ changed with an empowered workforce that is more self-directed, self-managed and self-controlled. Special considerations are needed for bringing changes in various aspects like increasing their capacity, altering the hardware (strategy, structure and system) and software (employees’ behavior and mindset) in an old

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(matured) organization. Change is made by empowered employees who act as leaders at all levels of the organization (Beatty and Ulrich, 1996)

Areas of Change Management

Areas of organizational change have been related to its dynamics and effects of time, process, discontinuity, and context. Socio-technical change management cannot be merely limited to technological changes like replacement of machines, equipments, instruments and practicing new manufacturing processes. However, it has been commonly aimed to make the processes and products more effective in an organization. Managing change has comprised of various interconnected and interdependent areas (Garg and Singh, 2002). All of these areas needs to be considered concurrently for successful organizational change. These areas are described as under:

- i. *Technology*: Technology is concerned with design and layout of production facilities, type and mix of machines and equipments, product mix, flow of data and sharing of information, inventing new materials, automation, etc.
- ii. *Organizational systems*: This area is concerned with working practices related to production, maintenance, marketing, sales, information technology, material procurement, inspection, quality, etc. on the one hand and their interconnection on the other.
- iii. *Organizational structure*: The area includes hierarchical levels, cadres, span of control, manpower utilization, administration, communication, integration, coordination, learning, etc.
- iv. *People*: This area is related to management attitude, vision, objectives, resistance to change, motivation, developing skills, coordination, mindset

of individual, and impact of group dynamics on change process.

- v. *Culture*: Culture includes flexibility, work environment, team spirit, group behavior, management commitment, belongingness, leadership etc. in an organization.

For managing socio-technical change in an organization, 'change agent' facilitates all the essential events and also intervenes whenever feels so. An important aspect of the change process is 'change target'. Target includes vision, objectives, knowledge, values, beliefs, assumptions and emotions. Corporate education programme can help the people in reducing resistance to change. Through these techniques, an organization can get success as per expectation.

Survey on Managing Socio-technical Change in Indian Automobile Industry

A survey has been performed to assess the current status of socio-technical change management in Indian automobile industry. Survey has been conducted using a specially designed questionnaire containing multiple-choice questions (Garg, 2005). The steps involved in the survey are:

- a. Design of a suitable questionnaire, its pretesting and conducting survey
- b. Entering the response in the form of various fields and analyzing the response

To start with, a questionnaire comprising of simple questions was designed. The questionnaire has been divided into two broad sections. Section A has been designed to obtain general information of the responding organization. Section B seeks detailed information related to change management. Mostly close-ended multiple-answer type questions have

been framed and four alternatives have been provided for giving response.

To ensure its relevance and effectiveness, the questionnaire has been pretested on a representative sample of industry. Units covered are manufacturing one or more types of vehicles like cars, light commercial vehicles (LCVs), tractors, farm machinery, scooters, motorcycles, mopeds etc. or are engaged in manufacturing of auto-components. A total of 252 industrial enterprises were selected for the survey.

A total of 83 firms out of selected 252 responded to the questionnaire. The response to the survey has been presented in Table 1.

Findings of the Survey

Some questions in section A and almost all questions in section B have a scale of 1-4. The score of 4 was assigned to the best choice, 3 to the second best, 2 to the next in order and 1 to the lowest choice. Findings from the survey have been categorized into two categories:

- i. Determining the status of various aspects of change management
- ii. Categorization of companies into various classes such as very good, good, fair and poor from change management point of view

a. Status of Various Aspects

Using the score obtained from the response, average values of the major aspects of change management have been calculated and categorized as shown in Table 2.

Very good:	Score above (mean+SD): 83.5% and above
Good:	Score between (mean) and (mean+SD): 71.2 to 83.4%
Fair:	Score between mean and (mean-SD):58.9 to 71.1%

Poor: Score below (mean-SD):
Below 58.9%

No one amongst major aspects has fallen in 'very good' category as shown in Table 2. With a score of 3.21 (80.25%) on a scale of 4, technological change has the highest score among all major aspects and falls in the 'good' range. This has been followed by other aspects as mentioned in Table 2. It can be concluded that automobile industry has felt a need of change and has initiated the change process, mostly in a systemic way. Figure 1 gives an at-a-glance picture of the comparative standing of each major aspect.

b. Classification of Companies

To classify the companies based upon the status of major areas of change, the relevant questions from the whole questionnaire have been separately listed and tabulated, and their scores have been compiled under the following heads:

- i. Technological change
- ii. Systemic change
- iii. Structural change
- iv. People change
- v. Cultural change
- vi. Flexibility
- vii. Reengineering
- viii. Innovativeness
- ix. Entrepreneurship
- x. Organizational learning

As a result, companies have been classified into various categories as shown in Table 3.

For categorization of companies, the following method was used. Based on the scores in various major areas for all 83 companies, the average value 'x' and standard deviation 'a' have been calculated. With the help of these values, the comparative performance of the company has been categorized as described below:

> x+a	V.Good
x to x+a	Good
x-a to x	Fair
< x-a	Poor

Table 3 shows the percentage of companies falling into various categories of change management in various heads (major areas). From this table, it is clear that status of technological change is comparatively good and very good in 53% firms whereas only 33% lie in fair range. Similarly, status of all other major areas of change management in various ranges is depicted in Table 3, and also illustrated in Figure 2.

Conclusion

From the survey, it is clear that Indian automobile has made efforts to manage socio-technical change. Changes have been made in various areas of change management like technology, systems, structure, people and culture. As a result, various notable changes have been made in various organizations. But still there is wide scope for further change. The industry has to strive hard to be innovative, technologically superior as well as working-culture conscious. The continuous pace with world-class technology, supportive systems, restructuring and cultural modifications

will help the organizations to change successfully.

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Table 1
Response to the survey

Type of organization	Number of organizations		Response ratio in percent (%)
	Questionnaire sent to	Response given by	
Total selected organizations	252	83	33%
Automobile manufacturers	52	18	35%
Component manufacturers	200	65	33%

Table 2
Status of major aspects of change in Indian automobile industry

S.No	Major aspects of change management	Mean value of average score of various aspects	Mean value in terms of percentage = 100* Mean value/ 4	Category
1	Technological change	3.21	80.25%	Good
2	Flexibilities	3.117	77.92%	Good
3	Innovations	3.078	76.95%	Good
4	Need of change	3.066	76.65%	Good
5	Continuous improvement	3.018	75.45%	Good
6	Driver of change	3.007	75.17%	Good
7	Structural changes	2.948	73.70%	Good
8	Benchmarking	2.867	71.67%	Good
9	Change agent	2.846	71.15%	Fair
10	Systemic changes	2.8	70.00%	Fair
11	Cultural change	2.77	69.25%	Fair
12	Organizational learning	2.766	69.15%	Fair
13	Inhibitors to change	2.542	63.55%	Fair
14	Reengineering	-	51.8%	Poor
15	Strategic change	1.251	31.27%	Poor
		Mean value	71.20%	
		Standard deviation (S D)	0.123	

Table 3
Status of organizations in change management

S.No.	Major Areas	% Organizations in various categories			
		V.Good	Good	Fair	Poor
1	Technological change	16%	37%	33%	14%
2	Systemic change	18%	34%	31%	17%
3	Structural change	14%	34%	41%	11%
4	People change	16%	34%	37%	13%
5	Culture change	20%	22%	43%	14%
6	Flexibility	17%	27%	42%	14%
7	Reengineering	19%	53%	9%	19%
8	Innovativeness	23%	33%	33%	12%
9	Entrepreneurship	17%	33%	31%	19%
10	Organizational learning	18%	37%	28%	17%
11	Overall change management	01%	16%	81%	2%

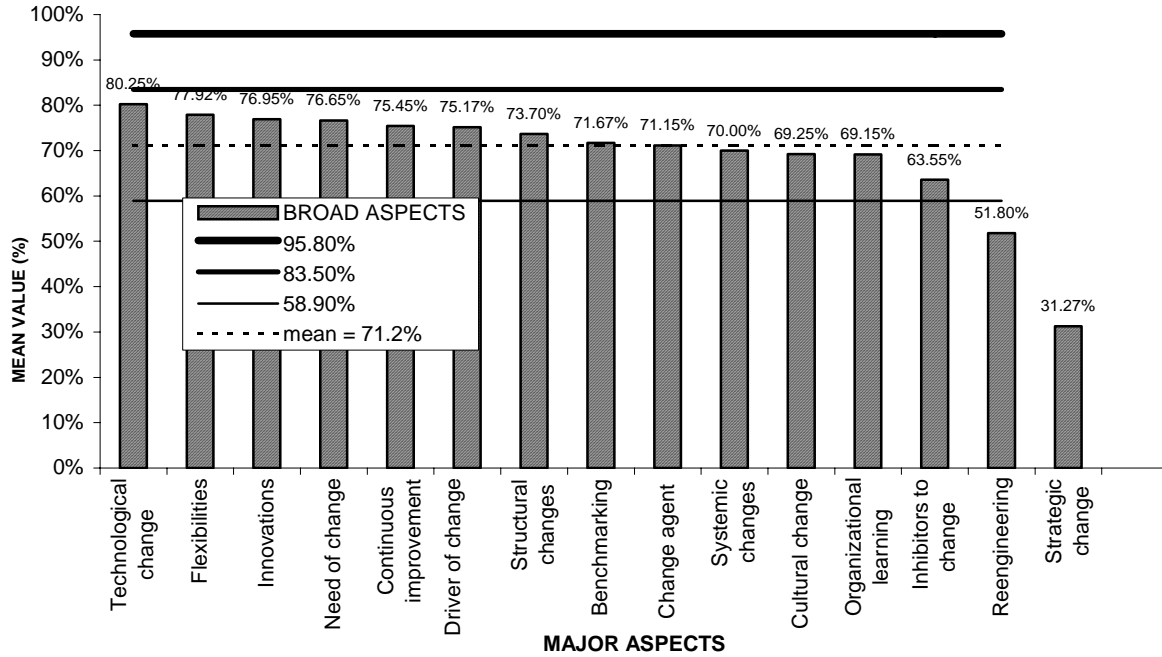


Figure 1: Status of broad aspects of change management

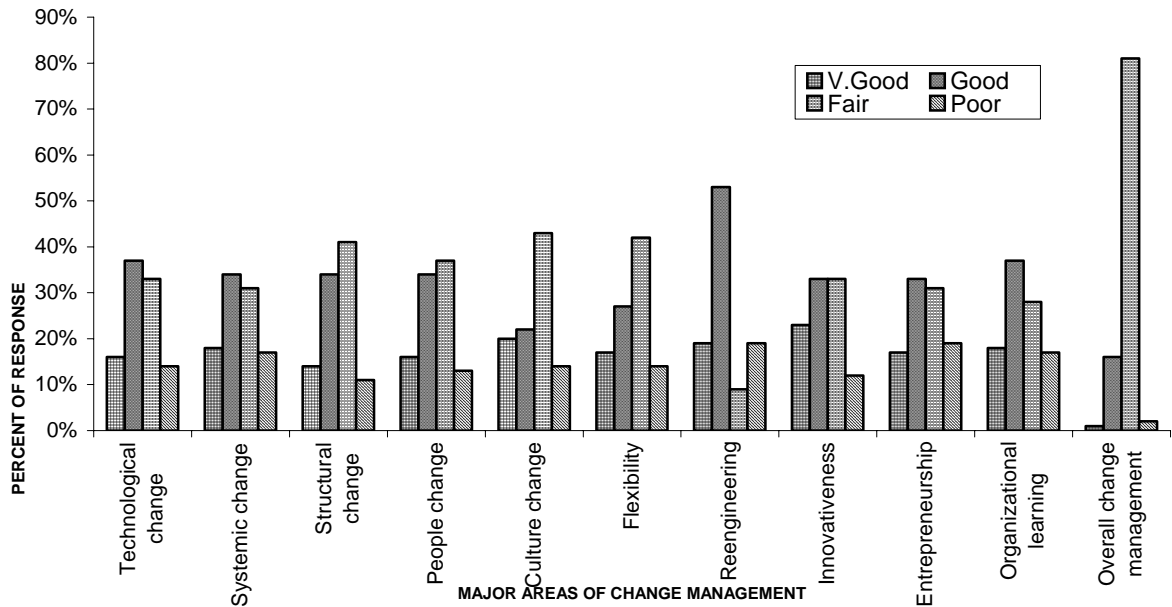


Figure 2: Status of organizations in change management