The Social Media Cone: Towards Achieving the Manufacturing Competitiveness Goals

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Abstract. The competitiveness among the different organizations in any industry might be raised due to changes in the technology, emergence of new competitive forces, devising and adopting newer business models, developing innovative products with differentiating pricing methods. The social media strategy is adopted by organization to harness the potential and get advantage in terms of the profit. Social media has provided both the opportunities and challenges for the organizations particularly to the high end manufacturing. The study undertakes the literature survey and the expert opinion on the factors which influences the electronics manufacturing industry. The findings suggest the key factors and a model in which the social media plays the important role to enhance the performance of electronics manufacturing sector.

Keywords: Social media · Electronics manufacturing sector · Competitiveness · Performance of industry

1 Introduction

The growth of the electronics manufacturing industry (EMI) could impact the socio-economic condition of any country. The EMI ranks high among the various segments that can contribute significantly to GDP of any nation. The core philosophy of manufacturing sector has shifted from Plan-Do-Check Act (PDCA) to operational expenditure based model now. Most of the demand for electronics hardware in India is met by the imports. The government had announced National Policy for Electronics in 2012, with an objective to achieve a turnover of about $400 billion by 2020. The government has taken various initiatives such as 100 % FDI through automatic route, capital subsidy of 25 % under Modified Special Incentive Package Scheme (20 % for Special Economic Zones) for ten years from the date of approval of the project, 2–5 % benefits for export under Focused Product Scheme (FPS), 75–100 % skill development assistance for sector on total cost of the project, preference to domestic manufacturing in government procurements, availability of land for Electronics Manufacturing Clusters, and setting up semiconductors wafers fabrication manufacturing facilities etc. for boosting this sector.

The perception of competitiveness varies from firm, industrial and national level [10]. At firm level it is the ability to persuade customers, ability to improve

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continuously their process capabilities. Whereas at the industrial level competitiveness could be understood by comparing the performance of industry with that of other nations. India lags behind in hardware manufacturing because of various reasons, such as high power cost, lack of fund, high transaction cost, poor supply chain, etc. The cutting edge technology in the industry is the need of the hour [4] to sustain. The next generation technology including social media, big data analytics and cloud may play a significant role for the growth of such industries [1, 7, 11]. The consumers have adopted the social media platform on a massive scale over which they can suggest the changes in the products, innovative solutions, and priorities for the development [6]. The market could be sensed from the interactive discussions with customers over social media [3, 11].

2 Literature Review

Indian IT hardware and electronics industry is still in a nascent stage of development. However the country has well performed in the software industry and highly competitive in the global market. The electronics industry has the potential of creating enormous employment opportunities including skilled and semiskilled manpower. The competitiveness of electronics sector has shown its influence on the spread of education and health care through ICT (e-learning) and tele-health services to both rural and urban areas as well as implementation of e-Governance [5]. The social media is the platform for sharing the information online. The research shows that organizations that are using social media in B2B environment, they are getting the advantages of online feedbacks regarding their products and services. This would help the organizations to improve their products and policies which simultaneously enhance the company's trust and brand value.

Today, most of the organizations are using community discussion, employees' forums, blogs, Facebook, linked in groups and Twitter for the discussions, policy design and decision making [8]. The customers based industries must explore social media for online marketing and customer complaints. Social media must be integrated with overall manufacturing strategy so that customers will get the desired products [2]. Some of the key observations regarding India from the literature are (i) 66 % of the current demand is met by imports for electronics products; (ii) High value added manufacturing is likely to be restricted to less than 7 % in 2015 depicts opportunity loss of $200 billion between 2011 and 2015 in the absence of intervention; (iii) Raise in domestic manufacturing to 50 % till 2015 to create employment for nearly twenty lacs people; and (iv) Therefore, it is very critical to recognize the EMI as a priority sector and provide favorable conditions for its growth in the country.

3 Challenges in Using Social Media

Despite of vast potential benefit of using social media technology in EMI, there are considerable challenges that need to be addressed, some of these identified through the literature are-

(1) Level of accountable and control by both consumer and manufacturing organisation.
(2) Clashes between social media platform and organisation due to hierarchy in organisational structure.
(3) Governance issue with changing in social media platform for the manufacturing organisation.
(4) Fear of employees working on social media platform may be distracted by social media and hence be less productive at work.
(5) Concern of for loss of commercially sensitive information when using social media platforms.
(6) Because of pear pressure on manufacturing organisational, they adopt the latest platform of social media.

4 Research Methodology

The various factors affecting the EMI are identified from the extensive literature survey. The identified 48 factors have been listed in appendix-1 in the study. The study utilizes the expert opinion to identify those factors which are influenced by customers through social media and showing significant impact on manufacturing sector. The experts were mainly chosen from the government, industry and academic fields. The brief details of the experts are listed in Appendex-2 along with their experiences. The personal details are not discussed in order to maintain the confidentiality of the experts. The total eleven experts were chosen, five from industry, three from government organizations and three from the academic field. The experts were asked to give their response in yes or no in front of each factor. In first phase, the factors were mailed to the experts and responses were recorded. In second phase, a separate version was recorded from each expert in order to avoid the biasness in opinion on the factors. For few factors the consensus were not achieved. Then the decision was made on the basis of majority.

5 Findings and Discussions

Indian EMI is facing infrastructure and supply chain issues, which are hampering the competitiveness [9]. The major ones are related to the high cost of power, finance, logistics, high transaction costs and high raw material costs due to cascading taxes and inverted duties on dual use inputs. The in-house production raises the cost of goods by 8–12 % depending on the value addition.

Based on the expert opinions, the study finds seven key factors which are influenced by customers and have significant role in manufacturing process. These factors are product quality, product design, customer needs, service quality, product cost and government regulations. The customers may suggest to the manufacturing unit regarding the product requirement, its quality, product looks, and how much they are willing to pay for the product. The big organizations having integration with social media platform are analyzing various discussion happening over social media among the consumers to mine the relevant information regarding their own products, services and product competitors

available in the market. Such analysis prompts the organizations to make their strategies to attract the customers with high quality and low cost products or services. This makes the market players to be competitive and compete each other by providing the sustainable products or services to their customers.

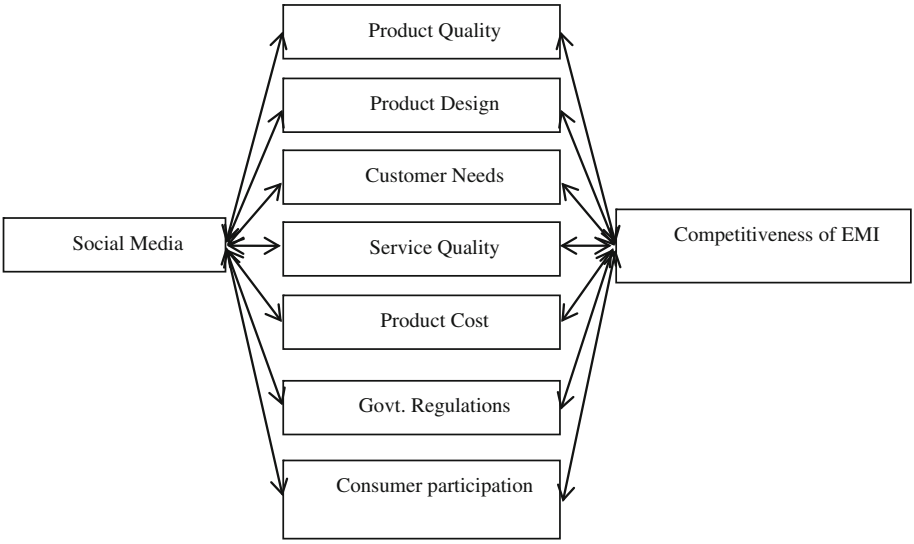

Fig. 1. Research Model for impact of social media on electronics manufacturing sector

A conceptual model has been designed to show the social media effect on competitiveness of manufacturing sector (Fig. 1).

6 Conclusions and Further Research

The next generation technologies are impacting the industries and have the immense potential for influencing growth. Therefore, the manufacturing industries also need to identify the technology options to craft the strategy to influence their sustainable growth. The designed model explains how the social media plays the key role to improve the performance of electronics manufacturing sector while placing the customers' opinions and feedbacks in center of the production.

The factors identified by the literature survey and the expert opinion are open tofurther discussion and future research. We would support the research framework may be used in future studies for clear understanding the importance of social media strategies in view of manufacturing sector. The proposed research framework could be further refined and validated by incorporating case based research.

Appendix-1. List of Factors Affecting Manufacturing Sector Identified from the Literature

1. Size of domestics market for EMI	2. Growth rate of industry
3. Government policies for facilitation the EMI	4. Need for common tax structure
5. Availability strong legal and regulatory framework	6. Incubation for entrepreneurship
7. Low cost of capital (interest on capital)	8. Availability of resources at low cost
9. Numbers of new firms registered	10. Investment in infrastructure building
11. Low cycle time of registration of the firm (online facility and ease of registration)	12. Substantial R&D Expenditure on EMI by government and private org.
13. Availability of transportation infrastructure	14. High exchange rate risk of currency
15. Proposition for joint research collaboration for EMI	16. Expenditure on science and technology education for building technological capability
17. Availability of Supplier network	18. Marketing excellence
19. FDI investment in host country for industry	20. Ease of Doing Business
21. Good macro-economic condition of the country	22. Ease of regulations for the sector
23. Human resource development	24. Export of electronics goods
25. Global export share	26. Share of industry in % of GDP
27. No. of patents registered by the industry	28. Quality products by the industry
29. Low cost products by the industry	30. Need for product differentiation
31. Integration of industry with research institutions/universities	32. Complicated and time taking decision making in government approvals process
33. Efficient operational capabilities	34. Inter-state trade restrictions
35. Unavailability of skilled manpower required for industry	36. Low level of R&D and Innovations investments by EMI
37. Unavailability of raw material and components at competitive cost	38. Focus on research and innovations of electronics products and manufacturing
39. Service quality of the products	40. Mergers and acquisitions
41. Usage of renewable energy source by the manufacturers	42. Customer focus (The willingness and ability to bring the customer to the focus of organizational)
43. Effective cost leadership to deliver the quality product at low cost	44. Customer feedback for the product
45. Internationalization of Industry	46. Competitiveness performance of Industry
47. Customer participation and engagements	48. Product design and new product innovations

Appendix-2. Personal Details of the Experts Selected for the Study

S. No	Designation	Experience
Industrial background		
1	Sr. Manager production from the electronics manufacturing industries	22 yrs
2	Manager marketing of electronics manufacturing	17 yrs
3	Industrial consultant	5 yrs
4	Manager, Production of electronics manufacturing	9 yrs
5	Manager, Production and Industrial of electronics manufacturing	6 yrs
Government organisations		
6	Scientist from the government organization	11 yrs
7	Undersecretary from the government organization	7 yrs
8	Sr. Scientist from the government organization	11 yrs
Academicians		
9	Professor, from reputed institution	8 yrs
10	Professor, from reputed institution	18 yrs
11	Professor, from reputed institution	12 yrs

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