

Synopsis of the thesis entitled

# **Six Sigma Marketing: An innovative approach to achieve strategic goals**

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## **Six Sigma Marketing: An innovative approach to achieve strategic goals**

After achieving great success in manufacturing set up, Six Sigma is leveraging its paddle over other organizational functions as well. In recent era organizations can survive in market by being effective as well as by being efficient to cater market needs. Effectiveness can be achieved by delivering offerings based on market requirements and efficiency can be achieved by providing these offerings in cost effective way. Six Sigma as a customer focused improvement approach addresses both the dimensions uniquely-being effective through unique value proposition in the market and being efficient by reducing variability of Critical To Quality (CTQs) characteristics. These characteristics of Six Sigma are providing opportunity for its expansion over other areas well as other organizational functions except manufacturing. The most widely adoption of Six Sigma has been found in healthcare and financial service due to their resemblance with manufacturing based on high volume repetitive standard processes (Hoerl, 2004). Different organizational functions are also marching towards applying this approach to improve upon their effectiveness and efficiency. As mentioned by Pestorius (2007), sales and marketing are the latest functions to join Six Sigma bandwagon.

Marketing as an organizational function has always been questioned for its productivity (Rust et al. 2004). From decades marketers are trying to solve this great mystery of making marketing more accountable for the investments involved in. Understanding how marketing expenditure affects customer's perception towards firm with the objective of establishing profitable firm-customer relationship is the major purpose of today's marketers. Improved functionality of marketing can help organization to manage firm-offering-customer link effectively and hence achieving greater financial advantages. Six Sigma with reputation of profit generation in manufacturing setup comes handy to marketing professional to address productivity issues. Six Sigma as a data driven process improvement approach can help marketing to leverage its full potential to manage firm-offering-customer link profitably (Muralidharan and Raval, 2017a).

Marketing has undergone massive transformation from traditional production era to recent total customer experience. As mentioned by Aaker (2011) marketing own three key drivers of strategy as:

- Customer insights to recognize growth opportunity
- Value proposition for competitive market positioning

- Inform and enable business strategy to connect marketing with other functions and connecting marketing with business strategy.

With changing market scenario marketers are addressing the above three drivers in distinctive way. Changing economic circumstances, increased customer sophistication, changing organization structure and tremendous progression of information technology are proposing unique marketing environment. This new marketing environment pays great emphasis on:

- Understanding what customers value in offering
- Educating customers instead of information delivery
- Creating pleasurable total customer experience

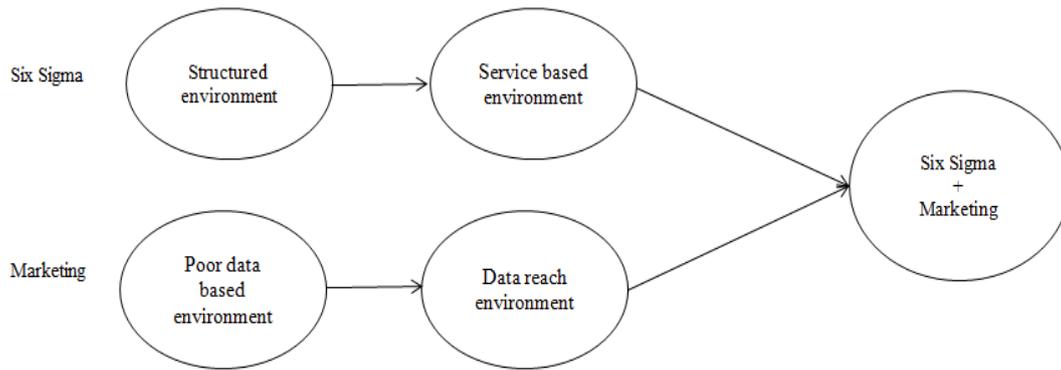
None of the above objectives can be achieved without intense customer orientation. This can be achieved through creating strong channel of communication between firm and customers. Ever developing information technology is proposing great infrastructure to establish this close connection between firm and customers. World Wide Web is facilitating this close channel of communication in ever effective way. Digital presence of organization through websites, social media and phone apps are becoming critical part of contemporary marketing strategy. This digital platform is loaded with abundance of data and hence the environment is rich. Enormous amount of data generated on digital platform guides marketer to take informed decision based on facts instead of faith.

## **Six Sigma marketing (SSM)**

Six Sigma Marketing as an innovative approach is trying to bridge the gap between quality professionals and marketing practices (Reidenbach (2009), Webb and Gorman (2006)). Six Sigma Marketing (SSM) is defined as a fact based data-driven disciplined approach to grow market share by providing targeted product/markets with superior value (Pestorius (2007), Creveling et al. (2007), Muralidharan and Raval (2013)). Integration between Six Sigma and marketing can be proposed based on the following aspects:

- Six Sigma as a process improvement approach expanding its horizon from data rich manufacturing environment to service environment (Antony (2006), Chakrabarty and Chuan Tan (2007), Kwak and Anbari (2006), Goh (2002), Biolos (2003), Hensley and Dobie (2005), Woodall (2001), Nakhai and Neves (2009)). On the other hand marketing is carving ways from superficial customer perception environment to data

rich digital environment. Hence, Six Sigma converge towards service environment-which is the fundamental nature of marketing and marketing converge towards data rich environment-which is the fundamental nature of Six Sigma. This complementary convergence of two fields provides greater opportunity for possible integration between Six Sigma and marketing. The Figure 1 explains this.



**Fig: 1** *Integration basis for Six Sigma and Marketing*

- As explained by Montgomery and Woodall (2008) Six Sigma developed over three generations. First generation of Six Sigma focused upon variability and defect reduction, second generation of Six Sigma integrated defect reduction with business performance and third generation of Six Sigma attempts to create value throughout organization and for all stakeholders. Similarly progressing over different eras like production, sales, customer orientation marketing finally has reached to the total customer experience era, which largely rely on customer value (Brännback (1999), Oswald et al. (2006)). Hence, contemporary practices of both Six Sigma and marketing focus upon customer value. Emphasis on superior customer value delivery provides the necessity for integration between Six Sigma and marketing.
- Six Sigma can leverage its potential under specific environment. As Biolos (2003) mentioned, applying Six Sigma to highly customized processes is costly affair. However mass customized and standardized processes are good candidates for Six Sigma application. Contemporary Marketing activities on digital platform works based on mass customization model. Marketing on digital platform aimed at addressing individual customer need at the same time is significantly less compared to traditional mass media marketing. This mass customized nature of contemporary marketing provides fertile land for its integration with Six Sigma.

- Brining business model on digital platform required great deal of transparency. Marketers are required to be transparent in their value proposition and business activities. This environment offers great opportunity to see marketing as a process. These clearly defined marketing processes are at the advantageous position to improve their performance through Six Sigma.

The benefit of integrating Six Sigma into marketing processes includes better information (management by fact) to make better decisions (Muralidaran and Raval, 2017b). Using the more robust approach reduces the uncertainty inherent in marketing—a creative, dynamic discipline. A marketing methodology should also facilitate the customer-product-financial linkages as mentioned earlier. This requirement seeks a comprehensive scope of marketing’s responsibilities from offering inception, through offering development, to the customer experience. This comprehensive scope encompasses a business’s strategic, tactical, and operational aspects (Creveling et al., 2006).

This thesis emphasizes the importance of Six Sigma marketing, relatively an upcoming topic and explores the marketing essentials needed to improve the quality of service, product and growth of the organization. Since, the marketing activity is completely a customer centric organizational function, its integration with Six Sigma could be the formula for all round success of an organization. Therefore, we embark on the conceptual aspects of SSM. We perceive SSM as one of the best quality improvement methodology applied successfully to organizational areas like manufacturing, production, accounting and finance, sales and marketing, information systems, human resource management etc. Application of Six Sigma to sales and marketing offers channel to the creativity that result in high return of investment (ROI). Different tools and techniques based on application of Six Sigma in marketing process have been studied in this thesis. Various key performance indicators (KPI) and their connection to Six Sigma supply chain matrices are examined critically. A case study to illustrate SSM from its value proposition is also discussed in the thesis. Further, the detailed plan of the thesis is as follows:

**Chapter 1** propose introduction of the study with importance of expanding application of Six Sigma to transactional functions like marketing. An extensive literature survey is done to get holistic perspective of Six Sigma and marketing fields. This holistic view aimed at understanding both the business practices from origin to till date. With this objective in mind, literature survey includes historical academic articles as well contemporary business magazines

articles. With focus on proper conceptualization of Six Sigma and marketing fields, different dimensions of both the fields are discussed. Different perspectives of Six Sigma definitions like metric approach, methodological approach and philosophical approach are discussed. Marketing too is discussed with reference to transactional approach, relationship approach and total customer experience approach. Based on extensive literature review objectives of the study are mentioned in this chapter.

In **Chapter 2** general perspectives of Six Sigma Marketing are discussed. Criteria for effective Six Sigma project selection with effective model proposition are discussed in this chapter. Two interconnected approaches namely probability model and regression model are discussed to explore causal system projected by Six Sigma philosophy as  $Y = f(X)$ .  $Y$  here indicates output of business process while  $X$  indicates factors causing changes in  $Y$ . Objective of Six Sigma improvement programme is on reducing variation in  $Y$  by controlling for  $X$ s. With reference to random nature of  $Y$ , probability model focus upon attaching probabilities to the possible values of the outcome variable. However, this change in outcome variable can be the result of change in exploratory variables called  $X$ 's. Change in outcome variable is seen with reference to change in to the values of parameters of  $Y$  like mean and standard deviation under different values of  $X$ 's (see Muralidharan, 2015 for more details).

Critical evaluation of Six Sigma projects through different methods like Program Evaluation and Review Technique (PERT), Critical Path Method (CPM), Matrix based methods and system dynamics etc are discussed. Use of these methods to evaluate SSM project is discussed as proposed by Pyzdek and Keller (2009). Importance of measurement based key performance indicators (KPI) is discussed to judge overall performance of the organization with respect to Six Sigma methodology. Relevance of supply chain metrics is discussed with reference to Six Sigma Marketing. Importance of supply chain metrics to track performance and to optimize supply chain is also discussed. Quantification of success of Six Sigma project through confidence-trust matrix is explained with interpretation guide line. Ultimately role of IT in Six Sigma project management and marketing is discussed based on synchronization of group activity, cost effectiveness and green practices.

**Chapter 3** discusses about  $1.5\sigma$  shift, which is an important part of metric based Six Sigma definition. The 3.4 DPMO in Six Sigma definition is based on long term sigma level of the process. This long term sigma level of the process can be obtained through,

$$Z_{LT} = Z_{ST} - 1.5 \quad (1)$$

Also estimation of process standard deviation is the important part of understanding sigma shift. Hence, different methods to estimate process standard deviation is discussed (Muralidharan and Raval, 2012). Estimation of sigma shift based on ANOVA approach, equivalence of distribution approach and tolerance analysis approach are also presented in this chapter (Raval and Muralidharan (2016)). Role of sigma shift in marketing promotional activity is critically examined in this chapter.

**Chapter 4** of this thesis highlight productivity improvement through SSM. DMAIC (*Define-Measure-Analyze-Improve-Control*) model for SSM is explained in this chapter. SSM enables companies to improve the marketing's strategic, tactical and operational processes as a way to enhance the top line to drive revenue. By applying Six Sigma to marketing, organizations can identify leading indicators of growth and become proactive about performance improvement (Muralidharan (2015), Muralidharan and Raval (2017)).

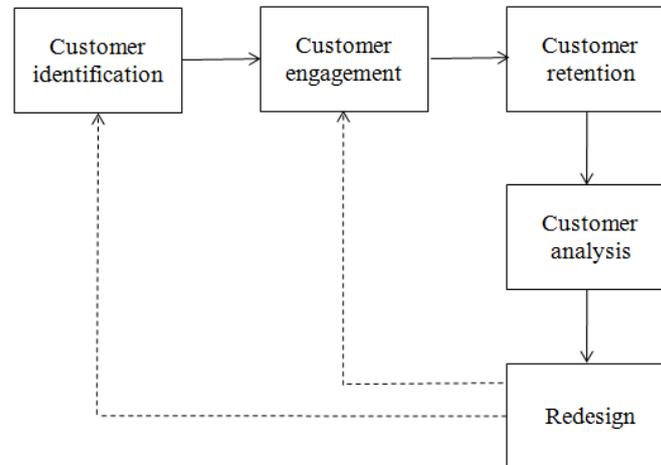
**Chapter 5** discusses different components for successful implementation of Six Sigma and marketing. Understanding the integration between these two topics requires investigation of both the fields from their origin to contemporary practices. Immense progression of Six Sigma has been found from manufacturing set up to service environment. Now, Six Sigma is expanding its horizon to different service environments like finance, medicine, construction etc, as well as to service functions of organizations. Originated in manufacturing, Six Sigma is progressing towards the most customer oriented functions like sales and marketing as expected. This progression has shifted focus of Six Sigma merely from defect reduction to value creation.

According to our research, the major components for successful Six Sigma implementation are identified as:

- Extensive top management involvement to bring cultural change in the organization
- Proper project selection based on top-down or bottom-top approach to achieve strategic goals
- Adopting process based improvement approach to manage processes effectively
- Effective use of human resource to spread Six Sigma culture all over organization etc.

On the other hand marketing has progressed from transaction based production era to Total Customer Experience (TCE) based digital era. Achieving TCE require effective customer value management from marketing function (Oswald A. Mascarenhas et al., 2006). Hence, we recommend that, Six Sigma philosophy should adopt the data rich environment of marketing

to facilitate customer credibility in every activities of the organization. Also the need for integration should not be an organizational demand only, but also the necessity of time and space. With that focus on managing customer value effectively at different stages through digital environment, we propose the tactical model for SSM as shown in Figure 2.



**Fig: 2** *Contemporary Six Sigma Marketing model*

The above model facilitates the key drivers of marketing strategy to work in tandem with the customer requirements and the management by objectives. Further,

- The first stage of this model focus upon getting customer insights to identified market need. Understanding what customer value in offering is the important part of this stage.
- The second and third stage of models focus on customer engagement and customer retention. These two stages involve effective value delivery and hence creating delighted total customer experience.
- The customer analysis and redesign stages are based on taking informed decision to update marketing strategy timely.

With reference to increasing effectiveness and efficiency of marketing function, we need to make the process simple, thin and waste free. Delivering customer value requires chain of value added steps. Therefore, we study the importance of Lean Six Sigma (LSS) approach in marketing. This is the content of **Chapter 6**. LSS as a combination of Lean and Six Sigma aimed at minimizing Non-Value added steps from any process flow (Arnheiter and Maleyeff (2005), Manville et al. (2012), Snee (2010)). However, Lean and Six Sigma works in

complimentary way to improve effectiveness and efficiency of the marketing process. Attaining environmental sustainability through LSS is also explained based on the work of many authors (Muralidharan and Raval (2013), Chugani et al. (2017), EPA (2009), Revere and Black (2003)) and references contained therein.

A case study is presented in **chapter 7**. Use of data based Six Sigma approach to improve marketing efforts of a company is demonstrated in this chapter. Instead of jumping to the solution based on preconceived ideas, company decided to go for data driven Six Sigma approach for their marketing efforts. Marketing efforts of the company are aimed at but not restricted to:

- To reach wider mass of people for the domestic expansion of company
- To design lubricate channel of communication with major purpose of time saving
- To keep customers engage by providing updated information about new offerings
- Addressing customer issue at every stage of their decision cycle and thereby creating total customer experience

To achieve above objectives, Six Sigma approach is closely woven with marketing efforts of the company. Without data based Six Sigma intervention, marketing efforts merely becomes guess work with great risk involved in. Following efforts are made by the company to integrate data driven Six Sigma approach with marketing activities:

- To explore the mode through which many people try to get information
- Understanding what recent customers and prospective customers value in offering
- Value proposition based on customer need
- Value enhancement through constant customer engagement
- Achieving customer loyalty by creating pleasurable customer experience

This integration of Six Sigma with marketing efforts resulted into saving of time and money through streamlined processes. It also helps company to optimize its efforts at different stages to achieve maximum customer attention and there by receiving financial benefits. Different tools like Voice of Customer (VOC), XY matrix, control charts etc are used to minimize randomness from marketing efforts and make it more effective through Six Sigma integration.

Some promotional issues related to SSM are discussed in **chapter 8**. We understand that proper blending of scientific approach of Six Sigma with innovation of marketing can bring new competitive advantage to marketing as a business function.

Based on discussion above guide line to improve marketing process with Six Sigma are explained in **chapter 9**. Organizations need SSM as

- Marketing and sales professionals and quality professionals both focus the value of the customer, thereby uniting a common platform for quality and productivity improvement.
- Quality professionals help their company to do more of what adds value for customers, thereby committing to the quality function deployment.
- Marketing and sales professionals make customers aware of that value, guide them to purchase it, and then deliver as much of that value as possible to as many customers as possible.

Concluding remark and a discussion based on whole study is given in **chapter 10**. As an output of this thesis, the authors have published about five research articles. A couple of papers are underway for publication.

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