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Matching of Different Attributes for Successful Manufacturing and Sales Management: A Strategic Relationship Approach

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Abstract

The main purpose of this empirical research is to find out the matching of the 'suppliers-manufacturer-product-distributors-consumers' attributes (SMPDC Attributes) in consumer goods industries of Bangladesh. In total, 250 samples are used applying cluster sampling method. Data have been collected through semi-structured questionnaire. PAST 2.17 version is used for analyzing data. Results show that good matching of all five variables categories augment sustainability of firms in the industry. This study reveals that well-suited suppliers to manufacturer, an efficient manufacturing of a product, a high quality product with reliable distributors and suitable target customers for that product are essential to confirm success.

Keyword: Attributes, Suppliers, Manufacturer, Product, Distributors, Consumers

Introduction

Attributes are the elementary collections that construct any object or thing. Attributes are the characteristic of an object (Babbie, 2009) which generally represents the perspectives. In marketing literature, product attributes are those aspects of products and services that determine why consumers buy products (Suttle, 2009). Attributes are considered as key dimensions of supplier, manufacturer, product, distributors and consumers. These attribute elements help to arrive accurate predictions for the consumers in their buying decision. Similarly, they help other entities to evaluate their relationship partners. It is also becoming increasingly crucial for managers of different organisations. Accurate predictions are necessary for successful designing and effectively execution of plans but it is always hard in business (Stevenson, 1998). Yet hard, proper estimation of those attributes for the manufacturing and selling organisation will offer secured profit.

This paper presents a strategic approach-"Matching the SMPDC Attributes", which highlights the interdependent relationships of suppliers, manufacturer, product, distributors, and consumers that mount an organisation's manufacturing and sales management strategy. This strategic relationship approach is mainly aimed to tackle product failure in the market. The present study is however designed to reach the following objectives:

1) to understand the challenges associated with making strategic decisions regarding manufacturing and sales of products in a competitive environment;
2) to understand the emergence of the care and control of the attributes related to suppliers-manufacturer-product-distributors-consumers;
3) to understand whether it is needed to ensure standard alignment among the attributes cited in objective 2; and
4) to analyze control models for examining success or failures of products in the market and thereon taking appropriate strategic decisions to respond.

The present study, however, is a focus on the context of how it could be confirmed about success or failure of new products in the market. In accordance with this context, this study examines a proper match of the attributes that are related to suppliers, manufacturer, product, distributors, and consumers expecting successful launching for a product in the competitive marketplace. This paper includes SMPDC attributes that affect successful

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innovation of new product. The findings contribute to our understanding about successful development of the new product concept.

The next section of this study discusses the theoretical review together with the framework of the SMPDC approach in section three. Section four presents the methodology of the study followed by analysis in section five. Section six discusses the results and implication of the current approach is shown in section seven. Finally, this paper is concluded in section eight.

Literature Review

Very close to the present approach, quality function deployment (QFD) concept was developed in Japan around 1960s; and it was later spread broadly into US market in the 1980s (Chan and Wu, 2002). QFD is basically aimed to translate the customers' requirements into appropriate technical requirements for each stage of product development as well as production. Hill (1994), in his book, emphasizes planned quality control issues to both of manufacturing and sales force staffs that seem to be the main driver which leads to the development of QFD concept in Japan. Before introducing QFD concept, statistical process control (SPC) tool was developed by Shewhart in the 1920s which leads to reducing manufacturing variation. The common cause of performance variations is the result of normal interactions of people, machines, environment, and techniques used in creating utilities (Boffoli et al., 2010). With the manufacturers' performance, the product features, product performance, suppliers' role and suppliers' performance are positively correlated (Vonderembse and Tracey, 1999).

The influence of supplier alignment on delivery and quality related performance is more significant than on cost or flexibility performance (Shin et al., 2000). Manufacturing issues such as product development costs, timeliness of delivery of raw materials, assembles, logistics or goods, inventory levels, and manufacturing schedules directly depend on the performance of suppliers, they directly influence the profitability and financial performance of manufacturing organisations. The relationship between effective manufacturing and corporate success is rarely seen as it is difficult to achieve high efficiency at a lower cost. In fact, this relationship is much more critical and sensitive (Skinner, 1969) to achieve success for the new product. For growth and performance, all manufacturing firms follow almost same criteria such as adequate size or economies of scale, access to quality resources at satisfactory costs, and price competitiveness in final markets (Abbott, 2002). When organisations become attentive in improving the business conception, it often involves improved manufacturing supervision (Epiq Technologies Inc., 2012). Wheelwright (1978) regrettably argues that top executives often fail to understand manufacturing as a key resource to attain corporate objectives. For that reason, organisations arrive in wrong decisions with new products. Under the marketing concept (Kotler and Armstrong, 2012) product quality that direct to fulfill customer needs has become the key competitive weapon for firms (Garvin, 1984). Product quality is the collection of some attributes of a product that contribute to its ability to meet given requirements. To consumers, a product with high-quality is one that well fulfills their expectations. Anderson et al. (1994) believe that many firms are now frustrated in their efforts to improve quality which links customer satisfaction and financial returns of firm. Manufacturer's success, therefore, does not only depend on what the manufacturer believes, or what about studies, it is rather, influenced by what the actual customers feel, experience, and says (Strickland, 2010).

Similar to other attribute elements, organisations must be careful about their distribution system to face the battle over control and performance. About distribution, often the organisations think for outsourcing. Distributors are not performed as manufacturers would like (Arnold, 2000); they do not even run in the ways consumers desire. In order to deliver products timely to the customers, proper distribution channel is indispensable (Lisa, 2006). The current approach seeks to propose a tool featuring the Shewhart's control chart to ensure a significant control over the attributes of supplier, manufacturer, product, distributors, and consumers in Bangladesh context.

The Framework of the Approach

The industrial sector of Bangladesh is increasingly facing difficulties in controlling material and other costs which leads continuous shut down of manufacturing units. The growing trends of increasing costs in almost every manufacturing erode firms' profit (Ogbadu, 2009). Besides, there have always been tensions about smooth supply that reflect the quality of finished product, and also about the ability and performance of distributors in ensuring the acceptance and satisfaction of the consumers.

Most manufacturing companies customarily experience these problems while entering to manufacturing and sales activities. Considering the current context of Bangladeshi industries, we have undertaken current approach to see the application of SMPSC attributes. *Firstly,* all manufacturing organisations when produce products, have to depend on their suppliers regarding the supply of necessary raw materials, assembles, logistics and other materials. These supply items always vary on price and volume in respect to its availability, transportability, perishability, supply frequency, and of course on the nature and ability of the manufacturers. To ensure effective, efficient, timely, and uninterrupted flow of supply of raw material and assembles items, it is very crucial for the manufacturers to find, select and contract to the suppliers who are efficient enough to meet the specifications and requirements of the manufacturers. *Secondly,* alike the care and cautiousness to the suppliers, the manufacturers thyself should ensure their strength and fitness in the industry. The earlier prediction and alignment of some particular attributes of the manufacturers-i.e., ability, efficiency, extent of technology adoption, innovation attempts, and partnership ability-with respect to their product(s) that will help to perform successfully in the respective industry. *Thirdly,* manufacturers put utility and value into with the manufacturing process, and consumers purchase products to serve the purpose of consuming utility and getting value and satisfaction there from the products. To ensure the best satisfaction of consumers, manufacturer should be careful about some key attributes of their products i.e., quality, image, shape and weight, price, and reliability. *Fourthly,* every manufacturing company needs to ensure smooth and safe flow of goods-commonly refer to functions of marketing intermediaries. However, some manufacturing companies perform this job by their own efforts while others use different business entities called marketing channels. The goal is only to reach products to the consumers and there have always been tensions between manufacturers and distribution channels. Therefore, care should be given to some particular attributes of distributors to secure, prompt and safe flow of goods. *Finally,* it is very crucial for the manufacturer to align their product with consumers to counter the challenge of product failure. Before the manufacturing start, firms should search and avail some particular attributes of consumers as taste, perception, social power and status, pride, purchase ability, family structure, post-buying behaviour, and many others that pertinent to the production of particular product.

Methodology

In this study we've selected 250 respondents divided in four major clusters for the quantitative data requirement. Noapara, an industrially significant zone in the south-western region of Bangladesh has been selected as the sampling area. In the four clusters there are the representatives from the suppliers of raw materials, manufacturers, distributors, and the consumers. The respondents were asked to select an industry before they start their respond to the main part of the questionnaire. Both structured and semi-structured questionnaire have been used to collect data. Data have been collected using face-to-face interview method from selected respondents. Necessary qualitative data have been collected from online sources.

Primarily data from the four clusters have been collected under five major variables namely- Supplier Attributes, Manufacturer Attributes, Product Attributes, Distributors Attributes and Consumer Attributes. Each main variable are characterized with 13 to 16 sub-variables (sub attributes). A 5-point ordinal scale (Stevens, 1964) is used to obtain the measure for each sub attributes. The scale is used as per the extent of capabilities, competency and importance. Collection of the attributes along with its value is conducted on the basis of the product's nature, product value, raw materials and its source(s), target customers, and other resources supply required (e.g. natural, capital, information and human resources). Later it has been separated as per the industry type. The quantitative data is analyzed using Correspondence Analysis to obtain multivariate statistical analysis.

In the current approach Shewhart's Control Chart (Shewhart, 1931) is used in a modified way to interpret the product of this approach. Two sigma control limit (Nayab, 2011) is used to ensure less variability and close data points. More specifically, in obtaining the control limits, smaller sigma level is used. Data is randomly chosen from a set of normally distributed data and that has a 95% of probability of being within the acceptable standard deviation. In the control chart, the Lower Control Limit (LCL) and the Frequency Weighted Average (FWA) have been used to detect variable(s) that need the care and control.

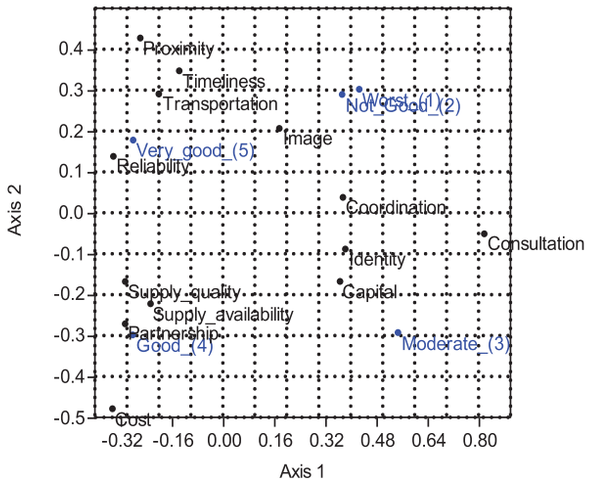
Data Analysis

Data are found on about 83 types of attributes (variables) of suppliers, manufacturer, product, distributors, and

consumers. Each of 83 variables was measured on a 5-point ordinal scale and data were entered in contingency tables. Thus it became difficult to consider all the variables. But, the exclusion of some data could lead to defective results and that can produce faulty predictions.

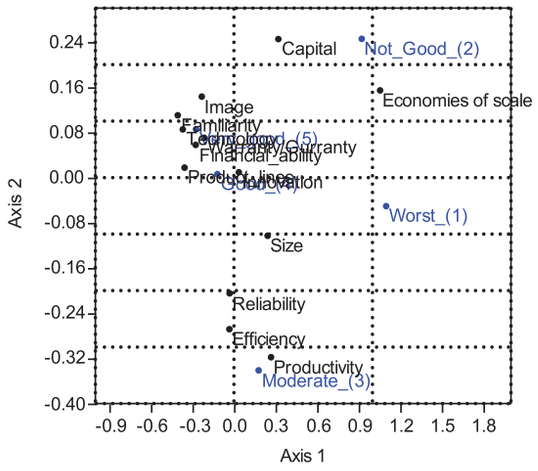
In this context, the authors conducted correspondence analysis (CA) to reduce the data overload and to make the use of data more reliable and cost and time effective. This analysis tool is also the most reliable for the cross tabulation (contingency table) data (Yelland, 2006). PAST 2.17 version was used which provides the following statistical visualizations (Graphs):

Figure 1: CA Scatter Diagram for Suppliers' Attributes



*Source: Field data

Figure 2: CA Scatter Diagram for Manufacturer Attributes



Source: Field data

Figure 3: CA Scatter Diagram for Products Attributes

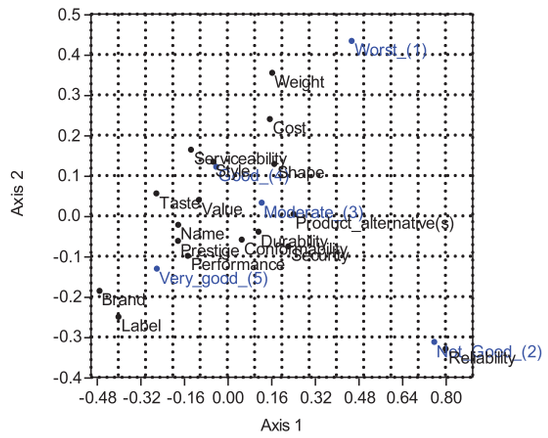


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Figure 4: CA Scatter Diagram for Distributors' Attributes

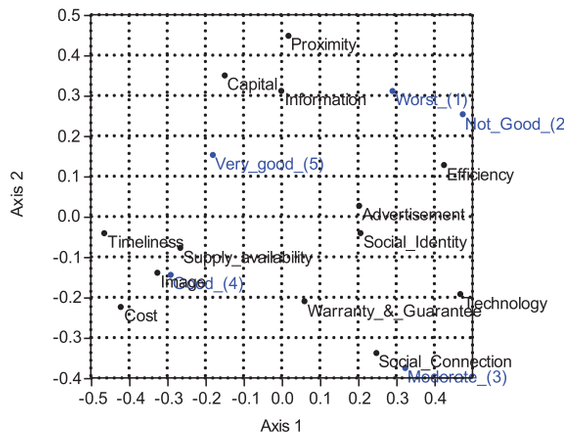

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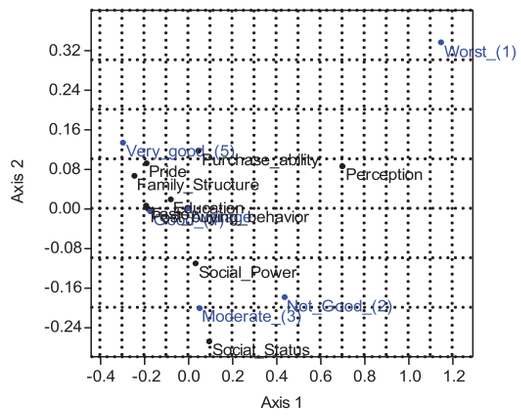
Figure 5: CA Scatter Diagram for Consumers' Attributes



Source: Field data

Table 1: Correspondence Analysis of Data

CA of Suppliers			*CA of Manufacturer*			*CA of Product*			*CA of Distributors*			*CA of Consumers*		
Axis	*Eigen value*	*% of total*	*Axis*	*Eigen value*	*% of total*	*Axis*	*Eigen value*	*% of total*	*Axis*	*Eigen value*	*% of total*	*Axis*	*Eigen value*	*% of total*
1	0.132462	58.057	1	0.150411	73.978	1	0.0830282	61.225	1	0.0878417	49.017	1	0.0748929	77.611
2	0.0669039	29.323	2	0.0275588	13.554	2	0.0282309	20.818	2	0.0547067	30.527	2	0.0131491	13.626
3	0.0173858	7.6201	3	0.0180212	8.8635	3	0.017052	12.574	3	0.0261394	14.586	3	0.00590549	6.1198
4	0.0114063	4.9993	4	0.00732902	3.6047	4	0.00729969	5.3828	4	0.0105173	5.8688	4	0.00255061	2.6432

*Source: Field Data

Table 2: The Attributes of SMPDC after Correspondence Analysis

Suppliers' Attributes (S)	*Manufacturer's Attributes (M)*	*Product's Attributes (P)*	*Distributors' Attributes (D)*	*Consumers' Attributes (C)*
(S1) Proximity	(M1) Capital	(P1) Product alternative	(D1) Cost	(C1) Pride
(S2) Transportation	(M2) Reliability	(P2) Taste	(D2) Information	(C2) Social Power
(S3) Timeliness	(M3) Technology	(P3) Reliability	(D3) Technology	(C3) Education
(S4) Capital	(M4) Productivity	(P4) Cost	(D4) Proximity	(C4) Purchase ability
(S5) Coordination	(M5) Efficiency	(P5) Brand	(D5) Warranty/ Guarantee	(C5) Perception
(S6) Image	(M6) Economies of Scale	(P6) Shape	(D6) Advertisement	(C6) Post buying behaviuor
(S7)Consultation	(M7) Image	(P7) Value	(D7) Image	(C7) Family Structure
(S8)Supply quality	(M8) Size	(P8) Label	(D8) Timeliness	(C8) Taste
(S9) Cost	(M9) Financial Condition	(P9) Weight	(D9) Social connection	(C9) Social Status

*Source: Field Data

The graphs (Figure 1 to 5) show that the variables in different group sets, which is used to exclude some variables as per the need of this study. The analysis also provides the eigen values for the data sets, which is used to have the percentage measures of attributes in different axis (dimensions) in Table 1.

Thus, using graphic presentation and correspondence analysis data table, sub-attributes (variables) of each attribute head shown in Table 2 are selected to examine under the current approach:

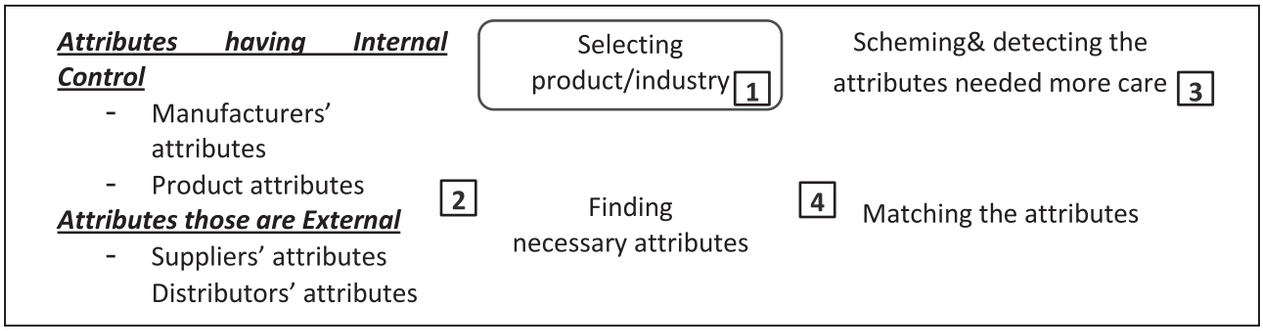
Discussion of the Results

The present approach includes five major attributes heads. To organisations, these should be most concerning issues when going for production and thereafter sale of what they produced. Among the five type of attributes, two attributes namely- Manufacturer's attributes and Product's attributes have their own control , and other three namely- Suppliers' attributes, Distributors' attributes and Consumers' attributes are external (Figure 6). As per the nature and features of the product, and industry type, the importance (value) of each of the major attributes is different. Hence, the entire approach works in four steps as under:

S-1. Selecting Product Type/Industry: A particular product in an industry may be launched and developed by either the new entrepreneurs or the firms having operation in other industry or in the same industry as well. It is the first work of the both of them to select the product and the value offered in it. Noted that, the current approach is applicable for reviewing the potential success of both initiating a new product in the marketplace or growth of a product in its lifecycle. The authors have selected the consumer product industry to apply the current approach.

S-2. Finding Necessary Attributes: From the development of an idea to reach a product to the ultimate buyer, a product passes through a channel and receives values from each element of the channel. In the 2nd step, the using entrepreneurs and firms will seek for the sub-attributes of each element of the entire channel. More

Figure 6: The 4 Steps Work Plan of the Approach



*Source: Field data

broadly, regarding the product offered; the entrepreneurs and the organisations will seek to answer the questions as- What will be the suppliers' quality to effectively meet our supply requirements? How much competency should and must we possess to ensure efficient manufacturing? What should the product hold to confirm best satisfaction? Which qualities of the distributors are needed to reach the target customers timely? And, what are the consumers' ability and quality we need to sale the product profitably?

Thus, the entrepreneurs and the organisations will avail data on the attributes and primarily become able to guise about their forthcoming manufacturing performance and sales volume.

S-3. Scheming and Detecting the Attributes those need more Care: An efficient and effective completion of S-2 will yield the collections of attributes of different kinds in different dimensions with corresponding value. Here the authors divided S-3 into two different sub-steps as following:

S-3.1.Shaping the scheming process: The value of the attributes will represent what the actual conditions are? To have effective measure, the using organisation will shape the scheming process according to S-1 (product type/industry) as under:

a. Entering the actual values: The actual values obtained through S-2 is entered into a data table containing a series of columns and corresponding rows to identify separately the attributes head namely-suppliers, manufacturer, product, distributors and consumers and the attributes under each head. The authors used different codes to identify each of the sub-attributed under each head (i.e. S1, S2, P1, P2, Pn.).

b. Applying control chart concept: The current approach suggested using Shewart's Control Chart in a modified way. We think that it is an efficient way of analyzing performance data to evaluate the process. In this step, the following calculations are essential:

The Mean Value: The mean value is obtained from the frequency weighted average (FWA) value divided by the number of variables under each head. Symbolically, $\bar{\bar{s}}$, $\bar{\bar{m}}$, $\bar{\bar{p}}$, $\bar{\bar{d}}$ and $\bar{\bar{c}}$ (table-1). The FWA is obtained by:

$$FWA = \frac{\sum_{i=1}^{n} XiFi}{\sum_{i=1}^{n} Xi}$$

Here, Xi = value for each observation

Fi = Number of samples under each observation

The Lower Control Limit (LCL): The lower control value limit is calculated by using formula, that is, $\bar{\bar{x}} - z\sigma_{\bar{x}}$

Here, $\bar{\bar{x}}$ *= Mean values for each specific heads*

$\sigma_{\bar{x}}$ *= Standard deviation, and*

z = Sigma control limits (the authors uses $z = 2$)

The calculations in this study are summarized in the Table 3.

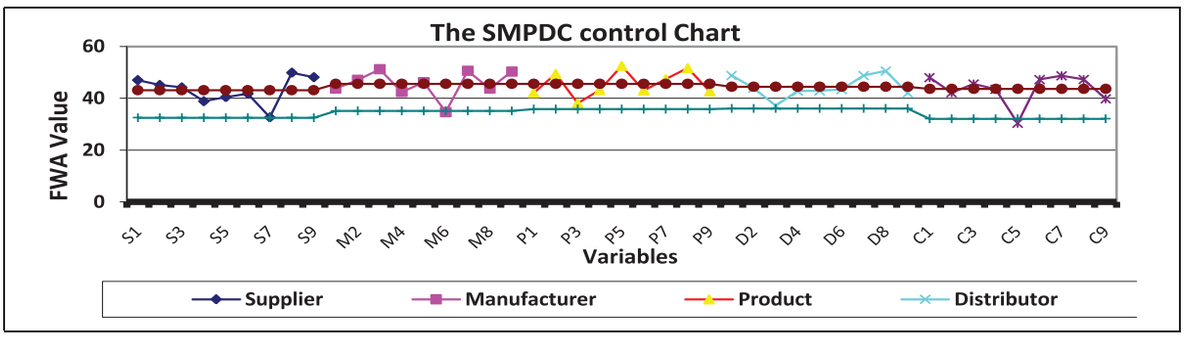
S-3.2. The comparison: In this step, the sub-attributes' value will be judged on the corresponding attributes heads' lower control value limit and the mean value as well. Here table-3 is plotted and thus, the chart represents

Table 3: The Value of FWA, Mean and LCL

Code	$\bar{S}$	*LCL*	*Code*	$\bar{M}$	*LCL*	*Code*	$\bar{P}$	*LCL*	*Code*	$\bar{D}$	*LCL*	*Code*	$\bar{C}$	*LCL*
S1	47.00	32.47	M1	43.73	35.11	P1	42.13	35.81	D1	48.80	36.054	C1	48.00	32.07
S2	45.13	32.47	M2	47.13	35.11	P2	49.47	35.81	D2	43.87	36.054	C2	42.13	32.07
S3	44.20	32.47	M3	51.20	35.11	P3	38.13	35.81	D3	37.13	36.054	C3	45.53	32.07
S4	38.87	32.47	M4	42.40	35.11	P4	43.20	35.81	D4	42.73	36.054	C4	43.47	32.07
S5	40.47	32.47	M5	46.20	35.11	P5	52.53	35.81	D5	42.87	36.054	C5	30.40	32.07
S6	41.80	32.47	M6	34.67	35.11	P6	43.07	35.81	D6	43.40	36.054	C6	47.20	32.07
S7	32.67	32.47	M7	50.60	35.11	P7	47.40	35.81	D7	48.80	36.054	C7	48.67	32.07
S8	49.87	32.47	M8	43.73	35.11	P8	51.67	35.81	D8	50.53	36.054	C8	47.27	32.07
S9	48.13	32.47	M9	50.33	35.11	P9	42.73	35.81	D9	42.00	36.054	C9	39.80	32.07
$\bar{\bar{S}}$ =	43.13		$\bar{\bar{M}}$ =	45.56		$\bar{\bar{P}}$ =	45.59		$\bar{\bar{D}}$ =	44.46		$\bar{\bar{C}}$ =	43.61	

*Source: Field Data

Figure7: The Scheming and Detection of Problematic Attributes



*Source: Field Data

mean value line, the lower control line along with the position of each sub-attribute under relevant attributes heads (Chart shown in Figure 7).

S-3.3. The detection: Through S-3.2, the points' (sub-attributes') positions found close to the mean line means the Supplier(s), Manufacturer, Product, Distributors, and Consumers in the entire whole are fitting. The points' positions above the mean line will epitomize the more competency and fitness of the attributes. But, points are found below the lower control value limit (LCL), which represents the negative positions/features (e.g. inability, poor efficiency, defectiveness, poor quality, dissatisfaction and ignorance) of particular sub-attributes' and therefore, it reflects weakness(es) of resultant attributes head. Hence, the organisation will be able to identify the sub-attribute(s) where more care is needed to ensure better performance. The degree of control and there from success prospect is marked and identified by detecting zones and colors on the chart (Figure 7).

S-4. Matching the Attributes: It is rare for the manufacturers to have best and satisfied supplier(s), distributor(s), and consumers simultaneously for the specific product. As per the detection(s) of this approach (i.e. from chart-01), a supplier has quality supply (S8= 49.87), fair price (S9= 48.13) and locate nearby (S1= 47.00) etc., but hasn't available consulting service (S7= 32.67); would it a fit supplier to a particular manufacturer? Likewise, a distributor with fair cost (D1= 48.80), timely supply (D8= 50.53), but with lower social connection (D9= 42.00), would it a fit distributor to a manufacturer? Again, the product the manufacturer offered is a reputed brand (P5= 52.53); but the targeted buyers haven't reliability (P3= 38.13) on the product; would it possible to ensure profitability? According to the current approach, all these detections become easier because these variables are found at close or under the lower control limit (LCL). Therefore, the organisation will able to recognize its prospects as well as the need

for proper matching. Here, manufacturer may have the following specifics to decide:

a. Alternatives: In respect to the proper matching, manufacturer can choose from a number of suppliers, distributors and targeted consumer group on the basis of geographic, demographic, psychographic, and economic consideration. When looking at to these alternatives, they should identify the most viable alternatives.

b. Zero alternatives: If no alternative is found, manufacturer will try to proper match with the current profiles of the suppler(s), distributor(s) and target consumers.

Thus, the manufacturer will be able to match the supplier(s), manufacturer, product, distributor(s) and consumers as per the manufacturing and sales requirements and specifications applying the present approach.

Approach's Effects

In the backdrop of applying the current approach, through the collection and analysis of the attributes of suppliers, manufacturer, product, distributors and consumers, the using company will be able to recognize the following:

- who is/are the most suitable and cost effective supplier(s)for the company?
- what are the abilities, skills, techniques, strategies, and technologies the company itself should and must acquire and possess for particular product?
- what should include in the product (e.g. value and features) to meet the requirements and satisfactions of the target consumers?
- who is/are the most suitable, cost effective and dynamic distributor(s) to reach the consumers?
- who are the fitting consumers for the company's product?
- what are the sub-attributes of the above mentioned five (the SMPDC), of those the company should care about?

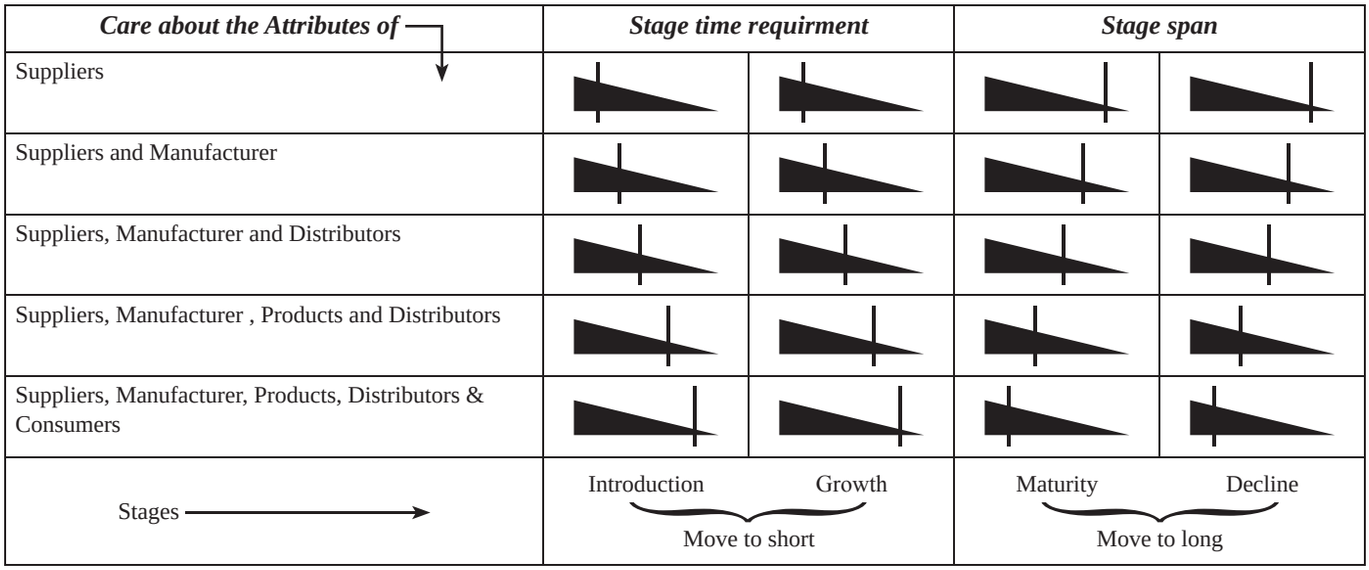
Therefore, the using company (manufacturer) will be able to examine how a proper matching of the attributes of suppliers-manufacturer-product-distributors-consumers could ensure successful product manufacturing and sales and thus it will help to minimize risk of launching a new product in the marketplace. However, the present approach is expected to offer timely raw materials supply at minimum cost. It can ensure efficient, effective, demand based and safe production of particular product with lowest risk of inventory storing. Manufacturer can maintain high performance in production and sale of product(s) with proved image and consumers' acceptance and perceived satisfaction. The present approach provides smooth flow of goods to ultimate consumers at fair profit. It can ensure reliable consumer and consumer group with the opportunity of getting valuable and rationale suggestions over long period.

Effect on Product Life Cycle

Manufacturers always try for a rapid growth of their products. Having growth in shorter time period, manufacturers reach at maturity of the product. They want to pass a long time at this period. Strategies of different types are also taken for lingering this stage. In finding and stabilizing a long life span for a particular product, the current approach could be also an unswerving tool. In this context, authors have conducted a qualitative analysis and estimated the following effect of this approach on PLC (Figure 8).

- **Move to Short:** A product's lifecycle starts with the introduction. With a prior market study entrepreneurs and manufactures start to collect materials for production. The "S-1" and "S-2" (Selecting the product and Finding necessary attributes) of this approach is helpful in identifying the attributes that manufacturer must have. They will also become able to find the best fitting supplier to have a good integration with them. Thus, it becomes easier to produce the proposed product relatively in a quick time and with greater efficiency and effectiveness. More the response on taking care and attention to the attributes, more shorten is the time required for the introduction of the particular product (Figure 8). The approach also offers the same move (to short) for the growth stage for a product (Figure 8). In this study, the detection step (S-3.3) helps to identify the problematic attributes in the entire chain. Development actions to these attributes will crop the faster growth of the product. But, it will depend on the extent of response, ability and will of the manufacturer on taking care and attention to the attributes.

Figure 8: The Effect of the Current Approach on Product Lifecycle



*Source: Field Data

- **Move to Long:** After the product passes the growth, it reaches at maturity. At maturity, the consumers are almost loyal and they purchase the product with high conformity of value of it. In the meantime, the product becomes a brand and subject of users' (consumers') reference. Because of consumers' high perception and dependency on the product, producer has to be very much careful about the entire chain. The manufacturers earn the highest profit at this stage and want to clamp it for a long time.

Ensuring uninterrupted supplier performance is obvious at this stage. Product quality and performance is also vital here. Beside, product improvements information, timeliness of supply and availability of completed product to consumers are some other driving factors to clamp the maturity stage for long-run. As this approach is used to detect the problematic variables of the entire chain (from Figure 7), it will identify the immediate action requirements in the chain. Thus, more the response on taking care and attention to the attributes of supplier(s), organisation, product, distributor(s), and consumers; more is the satisfaction of consumers and longer the span of maturity stage of particular product (Figure 8).

Entrepreneurs and manufacturers innovate and launch a particular product to yield profitability till the product lost its demand. A product is supposed to be dead when consumers and users feel zero demand for a product and the product goes out of market. The decline stage of product begins with the fall of sales. In such situation, manufacturers want turn to raising sales. The detection of consumers' changing attributes is possible through the current approach (change of value in Figure 7). Thus the manufacturer can introduce immediate change and improvement in the product's attributes to meet consumers' changed demand. Even, it is possible to get back at the maturity by initiating respond to the consumers' changing attributes and consumers driven change in the product's attributes.

Conclusion

Manufacturer's performance is significantly dependent on the performance of their suppliers, product, distributors, and the satisfaction of the consumers. A big challenge for the managers is to diagnose the problem areas accurately. The current approach is aimed to confirm the collection of the attributes (variables) on which the success and failure of the manufacturer is depended. It is also an unswerving tool for the detection of problematic variables. Using this approach, marketing managers will be able to take accurate and quick corrective actions. It will result in smooth and uninterrupted manufacturing and profitable sales. It is also useful in the management of the product's lifecycle.

In designing the approach we've taken the key attributes of suppliers, manufacturers, product, distributors, and the consumers. The proper measure of all these variables is

a big challenge. There may be some source error in the primary data used in this research. The reason is the variability in the level of understanding of all respondents in each of 83 variables. For organisations, accurate measurements and continuous review of those variables are critically important in applying this approach. Development of a mechanism to link this approach with the central database of the organisation will yield better performance of it. The current approach is expected to work as a visual control tool for successful manufacturing and sales management.

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