Predictors of Failure in Selected Roofing Sheets Product in Enugu and Delta States, Nigeria

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Abstract

This study was prompted by the desire to investigate the predictors of failure in the roofing sheets product industry in Enugu and Delta States, Nigeria. Enugu and Delta States, housed two indigenous roofing sheet product manufacturing firms, Eternit Ltd and Enenite Ltd. Indigenous roofing sheet products of thatches, clay tiles, fibre cement roofing products are gradually disappearing from the market due to low consumer's acceptance. In Nigeria, a man's status in the society is widely determined by the type of house he occupies, which is much more an expression of his quality, a symbol of his achievements and barometer that indicates how society perceives him. Private home owners desire not just a roof over their head but aesthetic and secured roof. A critical component of any building is the roof. A good roof is expected to comprise high performance and durable materials to protect a building from nature's harsh elements. Roofs are expected to provide water tightness and near continuous protection from moisture and vapour, ultraviolet exposure, cold, noise, wind and fire. This is the core value of a roofing sheet product, without which the house owner has no customer satisfaction. In recent times there has been a high rate of product failure in the roofing sheets product. The objective of this study is to ascertain the extent to which industry competitions in relation to price, product quality, product reliability, channel of distribution conflict, predicts product failure in the roofing Sheet products.

Keyword: Predictors, product failure, roofing sheet, competition

1.1 Introduction

The social and economic justification for the existence of a business is its ability to satisfy its consumers through its products and services. A company meets its basic responsibility to society through its products. Unless it fulfils this mission, a firm should not exist, and normally the competitive forces in a socioeconomic system do not permit it to exist, at least not for long. A company cannot successfully sell a low quality product over the long run. A company needs a good product to get repeat sales, and repeat sales are needed to stay in business, (Adrian, 2000). Products are the basic profit determinant. The watch word for management must often be innovating or die, and this innovating attitude can become a philosophy almost paralleling that of the marketing concept (Stanton, 1984). The product is the ultimate basis for the customer to know whether his needs are met or not.
Product strategy is a critical element of marketing and business strategy since it is through the sale of products and services that companies survive and grow. Successful marketing depends on understanding the nature of product and basic decision areas in product management. (Donnelly, 2004).

In line with the marketing concept philosophy, a reasonable definition of product is that, it is the sum of the physical, psychological and sociological satisfaction the buyer derives from purchase, ownership and consumption (Donnelly, 2004). From this standpoint, products are customer satisfying objects that include such things as accessories, packaging and service (Donnelly, 2004).

In spite of the importance of products to customer satisfaction and company survival, many products fails. Product can fail at any level of the product life cycle, (Plc) either in the introductory, growth, maturity, or decline stage.

The core elements in the marketing mix is the company product because it provides the functional requirements sought by customers, (Jobber, 1998).

All other elements of the marketing mix stand on the "shoulder" of the product. We price the product, we promote the product, we distribute the product. Marketing managers develop their products into brands which help to create a unique position in the minds of customers.

1.2 Statement of the Problem

There is high rate of roofing sheets product failure in recent time, especially in the fibre cement roofing sheets. The thatches, zinc, the supper 7, Dura-tiles and the aluminum step tiles are no more common in the market.

Prices of available ones are high, above the reach of the common man. Competition is high in the roofing sheets industry because of imported foreign products. Most roofing sheets product firms are downsizing in respect to labour force because there is no market for their products. i.e. there is very low acceptance for their roofing sheets products.

Consumers relies on aesthetic, than durability, hence the patronage of foreign roofing sheets product. These aesthetic products are not available and affordable in the rural areas because of the distribution network. There is a shift from durability to aesthetic, hence the patronage of colourful roofing sheet which is used to match windows, frame and building colours. As the competition become intensively globalized, understanding and accommodating the changing needs of consumers from different cultural backgrounds have become important.

Although rain water harvesting system can be simple and inexpensive to construct, various sources of contamination within the collection system can negatively affect water quality (Liu, 1996, Catalina 2009). Contamination in harvested rain water is affected by roof type, including roofing materials. It becomes imperative that every house owner pick the right kind of roofing sheet products for his home.

Altitude, humidity and temperature extremes are climatic features that affect the uses and function of roofing sheets products. Roofing sheets products that perform well in temperate zones may deteriorate rapidly in tropical zone. The temperature in Enugu is generally high throughout the year with monthly maximum temperature ranging between 28.1^{0c} and 32.2^{0c}. The mean monthly minimum temperature has be recorded at 22^{0c} and 24.9^{0c} in July and March respectively. These are weather indices that can lead to cracks and discolouration. The consumption of rain water from asbestors roofing products which are not health friendly is seen as death trap. The temperature in Delta State area is generally low with heavy rains. Some of these roofing sheets such as zinc and step tiles are prone to corrosion and rust, prone to leakages during rain, non heat resistant, reflect sound especially during rains. They are light in weight and cannot withstand strong wind.

1.3 Objective of the Study

The major objective of this study is to ascertain the predictive factors of roofing products failure and proffer likely solutions.

Specifically, the objectives of the study include:

1) To ascertain the extent to which industry competition in relation to product quality, price, predicts product failure in the roofing sheet product industry.
2) To ascertain the extent to which the roofing product reliability predicts its failure in the roofing sheet product industry.
3) To ascertain the extent to which product distribution network conflict predicts its failure in the roofing sheet product industry.

Literature Review

2.1Concept of Product Failure

A product refers to the benefits derivable from a physical entity or service. This was aptly put my McCarthy when he said that, in marketing a product, we are "selling the satisfaction, uses, and/or profit expected from the purchase of the product". Stanton has a yet broader conceptualization of product; he defines it as "a set of tangible and intangible attributes, which include: packaging, colour, price, manufacturers and retailers services, which the buyer may accept as offering want-satisfaction. (Agbonifoh, et al 2007, Stanton, 1984).

Kotler, (2004) explained product failure from three perspectives, absolute, partial, and relative product failure.

Absolute product failure is a form of product failure in relation to sales volume in which there is loss of money and its sales does not cover its variable cost.

A partial product failure is a form of product failure in relation to sales volume in which there is loss of money but its sales cover its variable cost and some of its fixed costs. A relative product failure is a form of product failure in relation to sales volume in which the product sales yield a profit that is less than the company's Return on Investment (ROI).

2.2 Product Planning and Development

Product planning consists of all activities that enable a company to determine what products it will produce and/or sell to its market or markets.

Product development has a more restricted meaning and refers to the technical activities of product research, engineering and design of a product service. The combined scope of product planning and product development includes decisions on the following areas:

1) Which products should the firm make and which should it buy?
2) Should the company market more or fewer product?
3) What new uses are there for each product?
4) What brand, package, label should be used for each product?
5) How should the product be styled and designed, and in what sizes, colours and materials should it be produced?
6) In what quantities should each item be produced?
7) How should the product be priced? (Agbonifoh et al 2007).

2.3 Style and Types of Product Failure

A product life time is limited by physical and economic factors.

A product failure can be referred to as a breakdown of a product, before its predestined time (Ruiz et al, 2000). A roof failure is defined as those occurrences in which the roof will not provide the minimum barrier against the elements for which it was designed (Pavoli, 2007).

One cannot expect a product or a system to work forever and to work too in same condition. The product or system wears out with time and hence the capability of the product or system to perform its tasks adequately depends upon the age of the product or system, (Banga, 2008).

According to Kaminsky (2002), failure is an inevitable event for physical reasons, and sometimes a necessary affect for economic reasons. Infophease (2007), cited in Kaminsky (2002) stated that, "Built – in Obsolescence" is a method of stimulating consumer demand by designing products that wear out or become outmoded after limited use.

Kaminsky (2002), identified two main style of product failure which includes (1) Graceful Failure (2) Catastrophic Failure. A graceful failure is the one that failsafe, predictable and or detectable and preferably also fixable.

Failsafe is "eliminating danger by compensating automatically for a failure or malfunction". For example, if a car power steering fails, the manual steering takes its place. Although part of the system is broken, the steering is still fully functional.

If a product cannot be failsafe, it should be predictable before it fails or detectable when it begins to fail. For a product to be easily fixable it should be modular. Whether or not a product should be made fixable depends on the cost of making it such and on the cost of the entire product.

A catastrophic failure is defined as undetectable, cascading and not fixable. A cascading failure is when one failure leads to another, until complete breakdown. The initial failure may be minor, or even cosmetic, but it eventually destroys the entire system. How do you prevent a cascading failure? First, the failure must be detectable or predictable. Secondly, it must fail in a safe-state (Kamisky, 2007).

2.4 Causes of Product Failures

In spite of past investments of firms on new products development, many of them have faced with weak market acceptance and fail (Su et al 2006).

A product failure can be referred to as a breakdown of a product before its predestined time (Ruiz et al, 2000).

Cooper, (2001), stated the following as causes of product failure:

• Poor Marketing Research
• Technical Problems
• Insufficient Marketing Effort
• Bad Timing
Higher Cost than Anticipated
• Competitive Strength or Reaction

Kotler (2004), stated that new product continue to fail at a disturbing rate because of the following Reasons:

- A high – level executive pushes a favourite idea through in spite of negative market research findings.
- The idea is good, but the market size is over estimated.
- The product is not well designed.
- The product is incorrectly positioned in the market, not advertised effectively or overpriced.
- The product fails to gain sufficient distribution coverage or support.
- Development costs are higher than expected.

Stanton (1983), Donelly (2004), McCarthy (1990) have the same view as the narrated causes of product failure.

2.5 Root Cause Failure Analysis

The root cause is the most basic causal factors that if corrected or removed, will prevent the recurrence of the situation (Rust, 1993). The purpose of determining the roof causes(s) is to fix the problem at its most basic sources so that it does not occur again, even in other products, as opposed to merely fixing a failure symptom. Identifying root causes is the key to preventing similar occurrences in the future and improving the company's product.

Root cause analysis is a methodology designed to help (1) Describe what happened during a particular occurrence (2) Determine how it happened and (3) Understand why it happened. (Rust, 1993) What differentiates root cause analysis from, for example, trouble shooting, and are its long and wide – ranging goals. Whereas trouble shooting emphasize the elimination of a symptom or particular problem in a single unit or product, root cause analysis seeks to determine why a particular event or failure took place so as to correct the problem from ever occurring again in that or any other product. In this way, root cause analysis is a tool that can be used to constantly improve all aspects of product development and production.

2.6 Critical Factors for Product Success

Onah and Thomas (2004:211) stated that positive steps taken to remedy the deficiencies in new product planning and development programmes include among others the following:

a) Improved Screening and Evaluation of Ideas and Products.
b) Organization Changes
c) Changes in Procedures and Communications.
d) Strengthening Research and Development Promotion Efforts.
e) Improvements in Production and Quality Control
f) Improved Calibre of Personnel Working on New Product Programmes.

According to them, "The first commandment in marketing" is "know thy customers", the second is "know thy product". The products or services sold by a firm are prime determinant of the company's rate of growth, rate of profit and total marketing programme. Policies and strategies of a firm's products will therefore have to be considered with respect to the full complement.

2.7 Identifying Competitors Strategic Moves in an Industry

Generally, competition focuses on price, product quality, product reliability, product features, product performance, quick services, convenience or brand reputation (Poter 1980). Competitive forces can be moderate in one industry and fierce, event cut - throat in another.

In some industries competition focuses on who has the best price, while in others, competition is centered on quality and reliability or product features and performance or quick service and convenience or brand reputation.

In other industries, the challenge is for companies to work cooperatively with suppliers, customers and may even select competitors to create the next round of product innovation and open up whole new vistas of market opportunities (Thompson and Strickland, 2001).

Kotler, (2004) stated that nothing focuses the mind of a marketing manager better than the constant sight of a competitor who wants to wipe him off the map. Jobber, (2004) emphasized that the real question in industry competition is not how well a firm is doing today against its own history but how it is doing against her competitors.

Porter, (1998) stated that competitive strategy is about being different. It means deliberately choosing to perform activities than rivals, to deliver a unique mix of value. Organizations succeed in a competitive market place over the long run because they can produce better product or service, or can do certain things their customer's value better than their competitors. The analysis of how industry structure affects product survival and long-run profitability has shown the need to understand and monitor competitors. Competitors' action can spoil an otherwise attractive industry, their weakness can be a target for exploitation and their response to a firm marketing initiative can have a major impact on their success (Jobber, 1998).

2.8 Effects of Reliability on Product Failure

Customers always want that the products, which he purchases, must be reliable. It is also the desire of the manufacturer that whatever he produces should be reliable (Banga, 2008). For this purpose, manufacturers continually re-assess their products to rectify defects and discrepancies.

Reliability is the capability of a product to work well and works whenever it is used for the job for which is designed, reliability is the probability of a device performing its purpose adequately for the period of time intended under the operating condition encountered (Banga, 2008). A common definition of reliability is the ability of a product or system to fulfill its intended purpose for a certain period of time under stated condition. Brombacher, (1992) has argued, especially for innovative high-volume products that the intended purpose for a user is different from that for a manufacturer. When a product works according to its technical specification but a user is unhappy with the functionality, the user will be dissatisfied with the product quality and reliability (Brombacher, 1992).

In this example, the reason of dissatisfaction is not because the product is violating its technical specifications but because the product only fulfils part of the customer requirements. To the customer, the product has failed.

Sander and Brombecher, (2000) define five aspects that can lead to formal customer complaints.

a) The product is not safe.
b) The product does not work.
c) The product does not comply with specifications.
d) The product does not meet customer expectations.
e) The product does not have sufficient satisfying aspects.

This research article only deals with reliability instead of quality, because the dimension of quality is ambiguous According to Garvin (1988) Rosenthal (1992) and Rosenan and Moran (1993), the quality dimensions that are used to judge a product cover broad aspects.

Garvin (1988), and Rosenthal (1992), listed quality dimensions as follows:

1) Performance (product primary operating characteristics).
2) Features (supplementary characteristics of a product).
3) Reliability (Product consistency over time).
4) Conformance (Meeting industry or established standard).
5) Durability (Measure of product useful life).
6) Serviceability (Ease – of – repair)
7) Aesthetics (Product appearance).
8) Perceived Quality (Subjective reputation of a product).

2.9 Implications of Channel Conflicts on Product Failure

The marketing intermediaries or institutions are the backbone of the manufacturers and the cornerstone of the consumers. They ensure that manufacturers who cannot get their products to consumers and consumers, who cannot buy in bulk from manufacturers are satisfactorily and adequately served. The manufacturers provide the needed incentives to seek cooperation of the middlemen by motivating them through provision of various facilities (Ehikwe, 2002:230). The prime purpose of the distribution system is to create time and place utility for the ultimate consumer. The inability to fulfill this mission by marketing intermediaries leads to product failure.

Decisions regarding the structure of the marketing channel and choice of number and type of distribution intermediaries tend to be long-lived and are not easily changed unlike pricing and advertising decisions. (Cannon and Perreault, 1999). In recent years, there has been a surge of interest in the study of relationships between buyers and sellers and indeed relationship marketing has emerged as a new field of study (Sheth and Parrvatiyar 2000, Palmatier, Fant, Grewal and Evans, 2006). Channel members are regarded as partners who work together to satisfy buyers even though each intermediary may be regarded as buying from the preceding member in the channel of distribution.

Conflict in marketing channels has been defined as "a situation in which one channel member perceives another channel member to be engaged in behavior that is preventing or impeding him from achieving his goals (Sterm, Ansary and Coughlan, 1996). Conflict is tension clashed between channel members as a result of perceived unfairness. If a channel member's "action are viewed as impeding another channel member" goals, conflict will increase. On the other hand, if a channel member's actions are seen to facilitate the achievement of another member "goals, conflict will decrease. A channel member" perceptions of conflict will influence changes in the relational norms that characterize its relationship with other channel members.

Methodology

The study used survey designs in determining the variables that predict product failure. The stratified sampling technique was adopted to arrive at 287 sample size from a population of 1,012 staff of fibre and aluminum roofing sheets manufacturing companies in Enugu and Delta State Nigeria. The descriptive statistics was used to analyze the data from respondents.

Descriptive statistics on each independent variable of competition, product reliability and channel of distribution conflict.

Competition as a Predictor of Roofing Sheet Product Failure

In determining whether completion is a predictor of product failure, the responses presented in Table I were analyzed. The emphasis is on product features, innovative capabilities, customer service, cost of production, pricing policy etc.

Analysis was also made in relation to mean responses in different roofing sheets of fibre cement, Aluminum, Clay and Witchtech roofing sheets products.

Decision Rule

If mean < 2.5, the respondents agree

If mean ≥ 2.5, the respondents do not agree.

Competition as a Predictor of Product Failure

In determining whether completion is a predictor of product failure, the responses presented in table I were analyzed. The emphasis was on product features, innovative capabilities, customer service, cost of production, pricing policy etc.

Table 1: Competition as a Predictor of Product Failure

Variables	SA (%)	A (%)	D (%)	SD (%)	N (%)	Mean	Std Dev
Inability to incorporate unique attributes and features (product differentiation) in our company's product offering more than that of our competitors, is our main competitive weakness	82 (33.5)	102 (41.6)	56 (22.9)	4 (1.6)	1 (0.4)	1.94	0.82
Product innovation capabilities is our company's most competitive lapses	72 (29.4)	112 (45.7)	58 (23.7)	3 (1.2)	0 (0.0)	1.97	0.76
Customer service capabilities is our company's essential competitive problem	77 (31.4)	139 (56.7)	28 (11.4)	1 (0.4)	0 (0.0)	1.88	0.64
A relative higher cost of production gives our company a competitive disadvantage	176 (71.8)	49 (20.0)	20 (8.2)	0 (0.0)	0 (0.0)	1.36	0.63
Lack of technological skills weakens our company competitive position	131 (53.5)	34 (13.9)	77 (31.4)	2 (0.8)	1 (0.4)	1.81	0.94
Our dealers/distributors capability negatively affects our competitive position in the industry	75 (30.6)	126 (51.4)	42 (17.1)	0 (0.0)	2 (0.8)	1.89	0.74
We seldom monitor our competitors marketing efforts	74 (30.2)	135 (55.1)	35 (14.3)	0 (0.0)	1 (0.4)	1.85	0.66
We seldom collect marketing data on our competitors to help direct our marketing plans	75 (30.6)	80 (32.7)	89 (36.3)	1 (0.4)	0 (0.0)	2.07	0.83
Our product pricing policy affects our competitive position	138 (56.3)	83 (33.9)	23 (9.4)	1 (0.4)	0 (0.0)	1.54	0.68
Few product varieties (product line) affects our competitive position	124 (50.6)	84 (34.3)	36 (14.7)	1 (0.4)	0 (0.0)	1.65	0.74
Our sales people are instructed to monitor and report on competitor activities	106 (43.3)	86 (35.1)	51 (20.8)	1 (0.4)	0 (0.0)	1.80	0.81
We have less loyal customer than competitors	37 (15.1)	159 (64.9)	49 (20.0)	0 (0.0)	0 (0.0)	2.05	0.59
There are too many roofing sheets product firms now than ever before	201 (82.0)	41 (16.7)	3 (1.2)	0 (0.0)	0 (0.0)	1.19	0.42
We rarely respond to competitors actions in the industry	96 (39.2)	89 (36.3)	59 (24.1)	1 (0.4)	0 (0.0)	1.86	0.79
Overall Mean						**1.77**	

Source: Field Survey, 2013

As presented in table 1 based on the mean response values < 2.5 and the percentage responses of those that strongly agree and agree, it is the opinion of the respondents that inability to incorporate unique attributes and features (product) differentiation) in their companies' product offering more than that of their competitors, is their main competitive weakness (mean = 1.94), product innovation capabilities is their company's most competitive lapses (mean = 1.97), customer service capabilities is their company's essential competitive problem (mean 1.88), relative higher cost of production gives their company a competitive disadvantage (mean = 1 .36), lack of technological skills weakens their company competitive position (mean 1.81), their dealers/distributors capability negatively affects their competitive position in the industry (mean 1.89) and they seldom monitor their competitors marketing efforts (1.85).

Also, the respondents pointed out that they seldom collect marketing data on their competitors to help direct their marketing plans (mean 2.07), their product pricing policy affects their competitive position (mean 1.54), few product varieties (product line) affects their competitive position (mean = 1 .65), their sales people are instructed to monitor and report on competitor activities (mean = 1.80), they have less loyal customers than competitors (mean = 2.05), there are too many roofing sheets product firms now than ever before (mean 1.19) and they rarely respond to competitors actions in the industry (mean 1.86).

With an overall mean of 1.77 < 2.5, the respondents agree that competition is a predictor of product failure.

To carry out further analysis, the mean responses of the manufacturers according to the type of products they manufacture is presented in table 2 and discussed. The essence of this is to show the pattern of response from respondents of each product type with a view to establishing whether the views presented in table 1 on competition being a predictor to product failure is shared by all the respondents from the various groups (fibre cement, aluminum, clay and Gerald manufacturers).

Table 2: Product Type Mean Response on Competition as a Predictor of Product Failure

S/N	Items	Fibre cement	Aluminum	Clay	Gerard
1.	Inability to incorporate unique attributes and features (product differentiation) in company's product offering more than that of our competitors, is our main competitive weakness	2.08	1.66	4.00	2.92
2.	Product innovation capabilities is company's most competitive lapses	2.16	1.66	3.00	2.77
3.	Customer service capabilities is company's essential competitive problem	1.91	1.69	2.00	1.85
4.	A relative higher cost of production gives company a competitive disadvantage	1.12	1.65	2.00	1.15
5.	Lack of technological skills weakens company competitive position	1.73	1.84	4.00	2.08
6.	Our dealers/distributors capability negatively affects competitive position in the industry	1.98	1.76	2.00	2.23
7.	We seldom monitor competitors marketing efforts	2.01	1.62	3.00	2.23
8.	We seldom collect marketing data on competitors to help direct marketing plans	2.46	1.63	3.00	2.08
9.	Our product pricing policy affects competitive position	1.61	1.52	2.00	1.00
10.	Few product varieties (product line) affects our competitive position	1.78	1.59	2.00	1.00
11.	Our sales people are instructed to monitor and report on competitor activities	1.58	2.05	5.00	1.31
12.	We have less loyal customer than competitors	2.09	2.04	2.00	1.77
13.	There are too many roofing sheets product firms now than ever before	1.10	1.31	2.00	1.00
14.	We rarely respond to competitors actions in the industry	1.88	1.75	2.00	2.54
	Overall Mean	**1.82**	**1.70**	**2.71**	**1.85**

Source: Field Survey, 2013

The mean responses of the respondents presented in table 2 show that respondents that produce fibre cement and aluminum roof products agree with all the variables presented, while the respondents that produce Gerald roof products with items 1, 2 and 14 that have mean > 2.5 disagreed. However, as seen in the overall mean response, respondents that produce clay tiles do not agree with most of the items presented in the table 2. From, this, it is revealed that while respondents agree that competition is a predictor to product failure, responses obtained from manufacturers of clay tiles show that they differ on such conclusion.

The IC coefficient of 0.486 indicates a positive relationship between PF and IC, and it is statistically significant (with t = 7.441). Based on this, the null hypothesis is rejected. Hence, industry competition predicts product failure.

Product Reliability as a Predictor of Product Failure

In determining whether product reliability is a predictor of product failure, the responses presented in table 3 were analyzed.

Table 3: Product Reliability as a Predictor of Product Failure

Variables	**SA (%)**	**A (%)**	**D (%)**	**SD (%)**	**N (%)**	**Mean**	**Std Dev**
Immature product development process lead to low product reliability	6 (2.4)	146 (59.6)	63 (25.7)	17 (6.9)	13 (5.3)	2.53	0.87
Weak product design result in product catastrophic failure	12 (4.9)	151 (61.6)	78 (31.8)	4 (1.6)	0 (0.0)	2.30	0.59
Lack of product innovation result in product failure	59 (24.1)	164 (66.9)	19 (7.8)	3 (1.2)	0 (0.0)	1.86	0.59
Low product performance result in product failure	145 (59.2)	83 (33.9)	15 (6.1)	2 (0.8)	0 (0.0)	1.49	0.65
Wrong customer usage of a product results in its failure	152 (62.0)	92 (37.6)	1 (0.4)	0 (0.0)	0 (0.0)	1.38	0.50
A product that is not safe for usage in terms of health wise, reduces consumers acceptance	213 (86.9)	31 (12.7)	1(0.4) 0	0 (0.0)	0 (0.0)	1.13	0.35
A product that is not reliable in terms of functionality reduces customer patronage	155 (63.3)	84 (34.3)	5 (2.0)	1 (0.4)	0 (0.0)	1.40	0.55
We always receive complaints from customers about product	38 (15.5)	99 (40.4)	106 (43.3)	2 (0.8)	0 (0.0)	2.29	0.73
The aesthetics of our product has improved (colour variant)	45 (18.4)	118 (48.2)	82 (33.5)	0 (0.0)	0 (0.0)	2.15	0.71
The breakage nature of products during transportation poses a competitive disadvantages	114 (46.5)	15 (6.1)	114 (46.5)	2 (0.8)	0 (0.0)	2.01	0.98
The specialized installation nature of product affects its demand	98 (40.0)	20 (8.2)	123 (50.2)	2 (0.8)	2 (0.8)	2.14	1.00
The light weight nature of products that makes it not to withstand strong wind affects its demand	66 (26.9)	31 (12.7)	144 (58.8)	4 (1.6)	0 (0.0)	2.35	0.90
Overall Mean						**1.92**	

Source: Field Survey, 2013

As presented in table 3, based on the mean response values < 2.5 and the percentage responses of those that strongly agreed and agreed, it is the opinion of the respondents that weak product design result in their product catastrophic failure (mean = 2.30), lack of product innovation result in product failure (mean 1 .86), low product performance result in product failure (mean = 1.49), wrong customer usage of a product results in its failure (mean 1.38), a product that is not safe for usage in terms of health wise, reduces consumers acceptance (mean = 1.13) and a product that is not reliable in terms of functionality reduces customer patronage (mean 1.40). Also, the respondents determined that they always receive complaints from customers about products (mean 2.29), the aesthetics of products has improved (colour variant) (mean = 2.15), breakage nature of products during transportation poses a competitive disadvantages (mean 2.01), specialized installation nature of products affects its demand (mean = 2.14) and the light weight nature of product that makes it not to withstand strong wind affects demand (mean 2.35).

Even though the mean score is 2.53 > 2.5, with 6 respondents (2.4%) strongly agreeing and 146 respondents (59.6%) agreeing, it is the determination of majority of the respondents that immature product development process lead to low product reliability.

With an overall mean value of 1.92 < 2.5, the respondents are of the view that product reliability is a predictor of product failure.

To carry out further analysis, the mean responses of the manufacturers according to the type of products manufactured is presented in table 4 and discussed.

The essence of this is to show the pattern of response from respondents of each product type with a view to establishing whether the views presented in table 3 on product reliability being a predicator to product failure is shared by all the respondents from the various groups (fibre cement, aluminum, clay and Gerald manufacturers).

Table 4: Product Type Mean Response on Product Reliability as a Predictor of Product Failure

S/N	Items	Fibre cement	Aluminum	Clay	Gerard
1.	Immature product development process lead to our low product reliability	2.04	3.00	3.00	3.00
2.	Weak product design result in product catastrophic failure	2.03	2.57	3.00	2.54
3.	Lack of product innovation result in product failure	2.02	1.77	2.00	1.15
4.	Low product performance result in product failure	1.38	1.65	3.00	1.00
5.	Wrong customer usage of a product results in its failure	1.43	1.39	1.00	1.00
6.	A product that is not safe for usage in terms of health wise, reduces consumers acceptance	1.05	1.23	2.00	1.00
7.	A product that is not reliable in terms of functionality reduces customer patronage	1.51	1.30	2.00	1.15
8.	We always receive complaints from customers about product	2.14	2.44	3.00	2.38
9.	The aesthetics of our product has improved (colour variant)	2.18	2.23	2.00	1.31
10.	The breakage nature of products during transportation poses a competitive disadvantages	1.18	2.95	3.00	1.77
11.	The specialized installation nature of product affects its demand	2.29	2.06	2.00	1.46
12.	The light weight nature of products that makes it not to withstand strong wind affects its demand	2.97	1.67	3.00	2.46
	Overall Mean	**1.85**	**2.02**	**2.42**	**1.69**

Source: Field Survey, 2013

As shown in table 4 the mean responses from the various groups show that manufacturers of fibre cement products do not agree with item 12; manufacturers of aluminum products do not agree with items 1, 2 and 10; manufacturers of Gerald products do not agree with items I and 2; while manufacturers of clay tiles do not agree with 6 items: 1, 2, 4, 8, 10 and 12. While all the respondents from the groups of fibre cement, aluminum and Gerald products agree that product reliability is a predictor to product failure, with an overall mean score of 2.42, respondents from the clay tiles group barely agreed with this conclusion.

Table 5: Channels of Distribution Conflict as a Predicator of Product Failure

Variables	**SA (%)**	**A (%)**	**D (%)**	**SD (%)**	**N (%)**	**Mean**	**Std Dev**
I am discouraged in continuing with Aluminium because of their goals incompatibility with mine	15 (41.7)	0 (0.0)	0 (0.0)	3 (8.3)	18 (50.0)	3.25	1.95
I am discouraged in continuing with fibre cement product because of their limited period mix	10 (27.8)	9 (25.0)	1 (2.8)	1 (2.8)	15 (41.7)	3.06	1.77
Direct sales (bypassing) to end users by manufacturers. discourages me from stocking their product as a distributor	18 (50.0)	11 (30.6)	3 (8.3)	0 (0.0)	4 (11.1)	1.92	1.27
Salesmen attitude of demanding for gifts leads to conflict between distributors and the company in the roofing product industry	7 (19.4)	6 (16.7)	16 (44.4)	1 (2.8)	6 (16.7)	2.81	1.28
Too many appointed distributors in the cement fibre roofing products amounts to conflicts	20 (55.6)	2 (5.6)	4 (11.1)	0 (0.0)	10 (27.8)	2.39	1.6
Incidence of fake which discolours and corrodes Aluminum long span products discourages me	14 (38.9)	1 (2.8)	1 (2.8)	3 (8.3)	17 (47.2)	3.22	1.90
Manufacturers inability to offer enough products to the market discourages distributors	19 (52.8)	12 (33.3)	5 (13.9)	0 (0.0)	0 (0.0)	1.61	0.73
Government inconsistent policies affects negatively the roofing product industry in Nigeria	19 (52.8)	9 (25.0)	2 (5.6)	1 (2.8)	5 (13.9)	2.00	1.41
Manufacturers poor delivery inadequate promotional support, leads to conflict in the industry	13 (36.1)	19 (52.8)	3 (8.3)	0 (0.0)	1 (2.8)	1.81	0.82
Low profit margins and poor quality products results in conflict in the roofing sheets products	28 (77.8)	8 (22.2)	0 (0.0)	0 (0.0)	0 (0.0)	1.22	0.42
Lack of promotional assistance from manufacturers amounts to distributors and manufacturers conflicts	1 (50.0)	15 (41.7)	2 (5.6)	0 (0.0)	1 (2.8)	1.64	0.83
Unclear roles and rights among distributors leads to conflicts	9 (25.0)	17 (47.2)	6 (16.7)	0 (0.0)	4 (11.1)	2.25	1.18
Marginal profit for distributors leads to stocking competitors products	26 (72.2)	10 (27.8)	0 (0.0)	0 (0.0)	0 (0.0)	1.28	0.45
Lack of motivation and cooperation from manufacturers discourages distributors to stock other competitors products in the roofing sheets industry	21 (58.3)	14 (38.9)	1 (2.8)	0 (0.0)	0 (0.0)	1.44	0.56
Competition for scarce resources e.g. limited availability of new product leads to channel conflict in the roofing sheets product industry	9 (25.0)	17 (47.2)	6 (16.7)	0 (0.0)	4 (11.1)	2.25	1.18
Differences in information availability leads to channel conflict in roofing sheets product industry	10 (27.8)	23 (63.9)	2 (5.6)	0 (0.0)	1 (2.8)	1.86	0.76
Lack of constant communication between the manufacturers and the channel members about new product leads to conflict	8 (22.2)	24 (66.7)	2 (5.6)	0 (0.0)	2 (5.6)	2.00	0.89
Variety of diluted and uncoordinated messages from company and middlemen reduces sales volume	7 (19.4)	20 (55.6)	5 (13.9)	0 (0.0)	4 (11.1)	2.28	1.14
Overall Mean						**2.13**	

Source: Field Survey, 2013

As presented in table 5 based on the mean response values < 2.5 and the percentage responses of those that strongly agree and agree, it is the opinion of the respondents that direct sales (bypassing) to end users by manufacturers, discourages stocking products as a distributor (mean = 1.92), too many appointed distributors in the cement fibre roofing products amounts to conflicts (mean = 2.39), manufacturers inability to offer enough products to the market discourages distributors (mean = 1.61), government inconsistent policies affects negatively the roofing product industry in Nigeria (mean = 2.00), manufacturers or delivery inadequate promotional support, leads to conflict in the industry (mean = 1.81), low profit margins and poor quality products results in conflict in the roofing sheets products (mean = 1.22) and lack of promotional assistance from manufacturers amounts to distributors and manufacturers conflicts (mean = 1.64).

The respondents also revealed that unclear roles and rights among distributors leads to conflicts (mean = 2.25), marginal profit for distributors leads to stocking competitors products (mean = 1.28), lack of motivation and cooperation from manufacturers discourages distributors to stock other competitors products in the roofing sheets industry (mean = 1 .44), competition for scarce resources e.g. limited availability of new product leads to channel conflict in the roofing sheets product industry (mean = 2.25), differences in information availability leads to channel conflict in roofing sheets product industry (mean 1.86), lack of constant communication between the manufacturers and the channel members about new product leads to conflict (mean = 2.00) and variety of diluted and uncoordinated messages from company and middlemen reduces sales volume (mean = 2.28). Though, mean response = 3.06 (std. dev. = 1.77) >2.5, with a percentage response of 27.8% strongly agreeing and 25% agreeing, majority of the respondents are not discouraged in continuing with fibre cement product because of their limited period mix.

However, the respondents do not agree that they are discouraged in continuing with Aluminum because of their goals being incompatibility with theirs (distributors) (mean = 3.25) and incidence of fake which discolours and corrodes Aluminum long span products discourages them (mean = 3.22).

With an overall mean of 2.13 <2.5, it is the determination of the respondents that channels of distribution conflict is a predictor of product failure. To carry out further analysis, the mean responses of the manufacturers according to the type of products they manufacture is presented in table 6 and discussed. The essence of this is to show the pattern of response from respondents of each product type with a view to establishing whether the views presented in table 5 on channels of distribution conflict being a predictor of product failure is shared by all the respondents from the various groups (fibre cement, aluminum, clay and Gerald manufacturers).

Table 6: Product Type Mean Response on Channels of Distribution Conflict as a Predictor of Product Failure

S/N	Items	Fibre cment	Aluminum
1.	I am discouraged in continuing with Aluminum because of their goals incompatibility with mine	4.86	1.00
2.	I am discouraged in continuing with fibre cement product because of their limited period mix	1.67	5.00
3.	Direct sales (bypassing) to end users by manufacturers. discourages me from stocking their product as a distributor	1.48	2.53
4.	Salesmen attitude of demanding for gifts leads to conflict between distributors and the company in the roofing product industry	2.48	3.27
5.	Too many appointed distributors in the cement fibre roofing products amounts to conflicts	1.10	4.20
6.	Incidence of fake which discolours and corrodes Aluminum long span products discourages me	4.76	1.07
7.	Manufacturers inability to offer enough products to the market discourages distributors	1.81	1.33
8.	Government inconsistent policies affects negatively the roofing product industry in Nigeria	2.10	1.87
9.	Manufacturers poor delivery inadequate promotional support, leads to conflict in the industry	1.62	2.07
10.	Low profit margins and poor quality products results in conflict in the roofing sheets products	1.29	1.13
11.	Lack of promotional assistance from manufacturers amounts to distributors and manufacturers conflicts	1.76	1.47
12.	Unclear roles and rights among distributors leads to conflicts	2.29	2.20
13.	Marginal profit for distributors leads to stocking competitors products	1.24	1.33
14.	Lack of motivation and cooperation from manufacturers discourages distributors to stock other competitors products in the roofing sheets industry	1.48	1.40
15.	Competition for scarce resources e.g. limited availability of new product leads to channel conflict in the roofing sheets product industry	2.33	2.13
16.	Differences in information availability leads to channel conflict in roofing sheets product industry	1.90	1.80
17.	Lack of constant communication between the manufacturers and the channel members about new product leads to conflict	1.81	2.27
18.	Variety of diluted and uncoordinated messages from company and middlemen reduces sales volume	2.33	2.20
	Overall Mean	**2.13**	**2.13**

Source: Field Survey, 2013

Table 6 shows that the responses of distributors of fibre cement roofing sheets and aluminum roofing sheets have the same views on channels of distribution conflicts being predictors of product failure even though respondents in the fibre cement category did not agree to items 1 and 6 and respondents in the aluminum category did not agree to items 2 - 5.

Summary of Findings

The major indices under competition that easily forces product into failure in the roofing sheets industry include the product price, quality which is an embodiment of the product performance, conformance, durability, features, aesthetics and the customer personal perception of the product. There are roofing sheets products that are light and easily blow off by wind yet, with high price.

There are also roofing sheets that requires experts for their installation, reflect sound during rain, incidence of fake, which discolours and corrodes.

One revelation of this study is that some roofing sheets contribute to air and water quality problems throughout a buildings life. Formaldehyde, benzene, ammonia and other harzardous or cancer - causing chemicals are present in many building materials. These chemical known as Volatile Organic Compounds (VOCS) can continue to be emitted into the air long after the materials containing them are installed.

Cascading and Catastrophic failure occurs in some roofing sheets products. e.g. a crack may occur unnoticed until the raining seasons. Some roofing sheets easily rust, reflect sound, and easily break.

There are roofing products that are not available in the rural communities in large quantity because of poor distribution system and price are beyond the reach of the rural dwellers, for the few available ones. Gerard, duratile of fibre cement are hardly seen in some areas.

Most of the roofing products are installed directly by manufacturers and importers rather than by intermediaries. Some manufacturers allows very small profit margin to distributors, resulting in stocking different brands of the products from competitors.

Conclusions

A firm can fulfill its socio economic responsibility to satisfy its customers by producing and marketing truly want - satisfying products or services. With scarce resources and growing concern for our environment, socially responsible product innovation becomes even more important. The products or service marketed by a firm are prime determinant of that company's growth rate, profits and total marketing program.

To manage their product assortments effectively, marketers must understand the full meaning of the term product and the different concepts of what a new product is. A product is a set of tangible and intangible attributes, including packaging, colour, price, manufacturer's prestige, and retailer's prestige and manufacturer and retailer services, which the buyer may accept as offering want satisfaction.

In contemporary time, consumers have been more selective in their choice of products. As consumers disposable income has increased, and as an abundance of products have become available, consumers are exposed to different brands of products.

It becomes very necessary that a company embark on product innovation because a product has a life cycle from birth to death, after which they are eventually replaced.

Secondly, a company product can after a period of time becomes obsolete, and must be changed or replaced as their sales volume and market share are reduced by competitive products. In addition, as the product ages its profits generally declines.

Product innovation is indispensable because product is a basic profit determinant. The watch word for management must often be "innovate or die" and the innovating attitude can become a philosophy almost parallel that of the marketing concept (Stanton 1980).

As most of consumers needs and wants are satisfied they tend to look for more high quality, more expensive products that give them or place them at a higher social class and status. This selectivity of the roofing sheets products consumers calls for product innovation.

Implementing customer satisfaction philosophy therefore, means identifying their needs and expectation and finally measuring their perception. Knowing the needs of the customers makes it easier to anticipate the ideal set of products that will satisfy them.

In Nigeria, the rich build specifically for class and prestige which is evidence in more usage of some roofing products that are very expensive, which shows class. The categories of these roofing products are being imported to this country, such as Gerard roofing products and some categories of aluminum roofing sheet products. There is a shift from durability to aesthetic, hence the patronage of colourful roofing sheet which is used to match window, frame and building colours.

Recommendations

Based on the findings of this study the following recommendations were made.

1) Some roofing sheets product were identified to be very light for wind and rain storm to be easily blow off, while others require expertise for their installation, while still others have incidence of fake which discolour and corrodes and incomplete meters. This was evidenced in the aluminum products.

Aluminum sheets product manufacturers should improve on the product thickness and monitor incidence of fake products. They should be given to as many roof installations as possible within and outside the company who are specialized installation technology.

2) Health implications due to the chemicals used for production that emit into the air and also contaminated rain water are cancer - causing chemicals.

Even though every manufacturer indicated that the level of health implication is low from their products, there is still fear in many consumers. This fear is high concerning the cement fibre products. Public enlightenment campaign to create awareness should be intensified. While those produced in Enugu and Delta State in Eminite and Eternit are said to be absestors free, they should guide against imitation from neigbouring countries.

Proper laboratory test is also recommended of the toxic chemical content of their products.

3) Distribution network should be improved upon by all manufacturers. It is one thing to have a quality roofing products, it is another to create place and time utility for customers within the social system (Mahajan, Muller and Bass, 1990). This is the contention of Bass diffusion model.

Manufacturers should subsidize transportation cost. Government should improve on our road network, to avoid breakage and for quick delivery system.

3) Government should formulate policies to protect indigenous roofing product from the imported products.

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