AN ANALYSIS OF PRODUCT LIFE CYCLE AND MARKET SEGMENTATION STRATEGIES

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Abstract—**The life cycle idea, which was first developed in the setting of biochemical research, has gained widespread acceptance as a framework for understanding and assessing events that are bound by and susceptible to change. An essential component of managing technological advancement is the deployment of the LC idea to the creation of standard industrial goods. It Is consequently called the "product life cycle." Product development decisions made by management is aided by the PLC paradigm. It can also be modified to concentrate on the adoption of technology and implemented in the establishment of company plans and planning for activities.**

Index Terms—**Aspects of a product's life cycle, Expansion, Maturity, Decrease, Product development, Marketing mix, Market segmentation**

I. Introduction

Product: Anything, commodity, service, or technology made available to the market to fulfill a customer's requirement or desire is referred to as a product in the fields of marketing and economics. Merchandise might be ethereal, like amenities, electronic goods, or licenses that create worth despite having physical manifestation, or apparent, like tangible objects that can be experienced and possessed. Products are the result of creation, manufacturing, and shipping procedures, and they are essential to buying patterns, company strategy, and economic exchange.
PRODUCT LIFE CYCLE: The phases that a product undergoes as it arrives, positions itself, and leaves its marketplace are outlined in the product's Product Life Cycle. Put differently, the steps which a product is anticipated to go through are described by the product life cycle. Administrators may utilize it as an asset to analyze and create methods to promote their goods as they move through all stages.

1. Introduction
2. Growth
3. Maturity
4. Decline

PHASES OF THE LIFE CYCLE OF A PRODUCT

The product life cycle consists of the following four stages:

1. Introduction
2. Growth
3. Maturity
4. Decline

1. **Introduction:** Revenue of a product are usually modest and develop gradually when it initially debuts. Since the product is new and unproven, the business's revenue is currently low. Due to the possibility that consumers won't test the goods, the unveiling phase necessitates substantial marketing activities. Since capacity for manufacturing is not optimally utilized, efficiencies of scale have no advantages.

Gaining extensive product awareness and encouraging customer trials are the main objectives of the initialization stage. The consumer base of innovators—the individuals who are probably going to purchase a new product—should be the target of marketing initiatives. In the introductory stage, there are actually two approaches to fixing prices:

A. Price skimming is the practice of setting an excessive starting cost and then progressively lowering it as the market expands.
B. Price penetration: Setting an affordable price in order to penetrate the market and gain share of the market fast, then raising rates in proportion to market growth.

2. Growth

The product will move into the expansion stage if it keeps growing and satisfying consumer demands. Revenue from sales often increases rapidly from the starting point during the expansion phase. When manufacturing hits capacity and sales revenues rise more quickly than expenses, advantages of scale are achieved.

As rivals launch comparable products, competitiveness is frequently intense during the expansion period. The market expands, rivalry heats up, sales improve, and consumer numbers climb during the expansion stage. In the expansion stage, rate discounting is typically uncommon because businesses can boost sales by drawing in prospective customers with their product choices.

3. Maturity Stage: When market demand ultimately reaches its maximum capacity, the product's revenue development slows. In order to draw clients away from rivals, businesses frequently reduce prices and step up their marketing campaigns during this phase. Lower-quality companies will ultimately depart the market because of intense competition—a phenomenon known as the shake-out phenomenon. The market's most powerful companies continue to take over and monopolize the steady market.

Maintaining prosperity and preventing a decline in sales is the most difficult task at the point of maturity. In the maturation stage, maintaining consumer brand devotion is crucial. Additionally, in order to keep the product effective and at the point of maturity, corporations usually use tactics like market creation, product creation, or marketing innovation in order to continually reinvent themselves.

4. Decline Stage: During this phase, product sales begin to diminish and revenue also diminishes. This is mostly because new or improved products that more effectively meet consumer needs have entered the market. During the decline stage, a number of tactics might be used, such as: Minimize marketing campaigns and try to extend the product's life as much as you can. Gradually cutting back on traditional channels of distribution and removing the product from regions that aren't doing well. Using this tactic enables the business to discontinue its product and try to launch a substitute. Marketing the goods to a supplier or specialized service provider. This enables the business to get rid of a subsidized product while keeping devoted clients.

Causes Caused by the New Product's malfunction:

1. Inadequate marketing analysis
2. Not utilizing technological advances
3. Expensive or overpriced goods
4. Inadequate design
5. Ineffective advertising
6. The intermediary's lack of participation
7. Inappropriate marketing strategies
8. The newly developed good was introduced at the wrong time

II. NEW PRODUCT DEVELOPMENT

Launching a new product is a challenging endeavor, and the danger is significant considering there is no assurance that the novel product will be recognized in the market. When developing new items, it is preferable to take an approach based on science. The many phases of an innovative product's manufacturing are as follows:

1. Idea Generation: The process of developing a new product is initiated by a concept. Any source could be the inspiration. Examples include rivals, periodicals, authorities, departments, and scholarly studies.

2. Screening Analysis: In this phase, the business assesses every concept. The goal below is to save needless costs by halting the execution of undesirable concepts that don't meet the needs of the business. A concept is assessed based on a number of variables, including expenditures, technological sophistication, profitability, and customer requirements.

3. Conceptual Testing: This phase involves evaluating the new idea. The company assesses if the ideas would meet the company's needs.

4. Business study: A thorough economic study is carried out here. Specialists often do the evaluation in order to determine the production feasibility and financial advertising competitiveness. In this section, the executive's job is to determine the product's characteristics, market acceptance, and profitability. Concepts that offer more profitability with a lower return on investment are chosen.

5. Product Development: During this phase, an intangible product is transformed into a tangible one. Either the department of engineering or the study and advancement division handles this. In order to prevent the new product from becoming a dumping ground, careful consideration should be given during its development. For this reason, it is necessary to thoroughly examine reports on research, the organization's budget, product specifications, etc. Early death is the effect caused by creating a new product with excessive hurry. However, if it takes too much time, the business risks losing out to rivals.

6. Test Marketing: Testing the product's economic feasibility comes when it has been developed. We call this procedure "test making." "Designing an interim Marketing Mix & exposing the novel product to a consumer dubbed the trial industry for confirming & assess the global market responses for the novel product" is the definition of test marketing.

III. BENEFITS OF TEST MARKETING

1. Understanding the consumer's response to the new product is beneficial.
2. It is known how consumers view the mix of marketing elements.
3. It prevents expensive production mistakes and undesired products. It lessens the uncertainty surrounding the newly developed product.
4. It aids in creating an appropriate marketing mix.
5. It aids in creating efficient advertising plans.
6. Test marketing also reveals the newly introduced product's shortcomings, who can be fixed prior to a large-scale introduction.
7. Test marketing improves dialogue among the business, middlemen, and clients.
8. Knowing how middlemen feel about the new product is also beneficial.

7. Commercialization: The process of launching a new product on an extensive basis in more widespread market after it has been profitable in test marketing, or whenever the market embraces it, is referred to as commercialisation. From the perspective of the consumer, an novel item truly emerges at this time.

IV. METHODS FOR CREATING NEW PRODUCTS

Aggressive and responsive development of products techniques are the two subtypes associated with product development strategies:

1. An aggressive approach to product development being aggressive is initiating or managing a circumstance as opposed to merely reacting to it when it has already occurred. That is what proactive approaches to developing products is all about. This approach predicts the need for a feature or good earlier it is released by analyzing market patterns. As a result, the business has an advantage over rivals. Businesses that use this approach spend a lot of money on market research before developing new products. They welcome enterprise and don't hesitate to take chances.

2. An approach for adaptive product development Being responsive is responding to a circumstance instead of initiating or managing it. Whenever desire or market conditions shifts, a reactive strategy pertaining to product creation is used. A responsive product creation approach can be approached in various ways:

Attending client needs. Reacting for promote competitiveness. Improving product quality to keep one step in front of rivals. Lowering the cost of the item in order to render penetration into the marketplace challenging. In summary, a great idea is not enough to create a successful item. To have an impact on the market, an effective plan of action and a steady process for developing products are required.

V. MARKETING MIX

Executives must pay close consideration to the marketing and delivery operations since production is meaningless without sales. The act of creating and combining different marketing components in an approach that guarantees the accomplishment of business goals is known as the "marketing mix." These categories—product, price, place, and promotion—have often used to group the components of the marketing mix. For this reason, the marketing mix is referred described as a blend of the four Ps:
According to Philip Kotler, "marketing mix is the mixture of controllable marketing variable that the firm uses to pursue the sought level of sales in the target market"

1) Product: The product is usually a service that cannot be described or a tangible object that appears to satisfy a particular requirement or desire of the consumer. Every product has a predictable existence, and it is essential for advertisers to comprehend and prepare for each stage as well as the particular difficulties they provide. Understanding the issues that the good is trying to address is crucial. It is necessary to comprehend the advantages provided by the product and all of its characteristics, as well as to research its distinctive selling point. Additionally, it is necessary to identify and comprehend the product's prospective customers.

2) Price: The price of a product is the real cost that the final consumer is anticipated to pay. A product's price has a direct impact on its sales. This has less to do with an objective costing of the goods on offer and more to do with the customer's perception of its value. A product won't be profitable if its price is greater or lesser below its true worth. Understanding how the consumer perceives the product you are offering is crucial for this reason. A product can be considered profitably valued over its target value if there is a significant consumer value. On the other hand, a product might have to be sold lower in order to be sold if consumers don't think it's worth much. Transportation strategies, chain of value expenses and premiums, and rivals' pricing strategies can all have an impact on price.

3) Promotion: The advertising category encompasses all marketing correspondence tactics and approaches. Public affairs, promotions for sales, commercials, and exclusive deals are a few examples of these. Regardless of the medium of distribution, it must be appropriate for the product, the pricing, and the target audience. It's critical to distinguish both marketing and advertising. The communication portion of the whole marketing process is called advertising.

4) Place: Location or position refers to the manner in which the client will get the product. One important component of positioning is dispersal. The placement technique will assist in determining which channel of distribution is best for a given product. The remainder of the product design must be complemented by the way a product is obtained by the final consumer.

VI. MARKET SEGMENTATION

According to Stanton, "Market segmentation consists of taking the total, heterogeneous market for a production dividing it. Into several sub-markets or segments, each of which tends to be homogeneous in all significant aspects."

The technique of breaking down a specific market into more precise, more compact categories is known as market segmentation. Consumers and viewers are divided into subgroups based on shared traits like geographical location, requirements, hobbies, or statistics.

A company may carry out thorough consumer market studies thanks to market fragmentation. It also makes thorough industry-specific research possible. It provides information on consumer experiences, innovative methods regarding product development, recommendations for increasing client retention, and more.

VII. FEATURES OF MARKET SEGMENTATION

1. It is made up of a collection of clients who have comparable needs.
2. The marketing professional chooses which categories to target after identifying them rather than creating them.
3. Micro advertising and the "current marketing paradigm" lead to market segmentation.
4. Market segregation is mostly caused by varied and complicated consumer habits.
5. By identifying variations in the reaction attributes of different segments of an industry, it is a strategy for maximizing market reaction from constrained marketing funds.
6. It is employed as a "conquer and divide" tactic.
7. It allows businesses to provide a suitable marketing combination and better options to ensure consumer selection.
8. To categorize consumers into homogeneous categories according to their characteristics and characteristics so that appropriate marketing campaigns can be created for each group.
9. To learn about the norms, inclinations, and purchasing patterns of consumers in order to determine the extent to which uniform marketing initiatives would be appropriate for every consumer.
10. To identify potential client acquisition locations while conducting appropriate marketing campaigns.
11. To determine various client groups' probable purchases.
12. To maintain the company customer-focused so that profits can be obtained through customers who are satisfied.
13. By correctly applying specific marketing strategies and strategies, market division offers a foundation for greater effectiveness.

VIII. THE EFFECTIVE MARKET SEPARATION IN FAVORABLE CIRCUMSTANCES

Following conditions will make the application of the industry fragmentation approach more beneficial:

1. The intended market's prospective customer base must be quantifiable.
2. The desired marketplace's varied necessary knowledge and data must be available.
3. There must exist enough customers for the business to generate successful sales figures.
4. To reduce expenses and needless effort waste, the potential target market must be reachable via the company's current marketing methods, promotional medium, and salespeople force.

IX. SELECTION OF TARGET MARKET

The organization needs to consider two aspects while assessing various market segments: a general appeal of the sector and the organization's goals and capabilities. In summary, a number of decisions should be made when assessing and choosing a target market:

1. Fragment diameter.
2. Opportunities for Growth.
3. Appeal.

4. It has to be quantifiable:
5. Reachable.
6. Materials.

Stanton has proposed four recommendations for identifying the desired customer segment:

1) The market segment being targeted ought to coincide with the organization's objectives and appearance.
2) It ought to be consistent with the organization's capabilities and the market potential offered in its intended market.
3) A company should look for industries that will provide sufficient supply and sales at a reasonable acceptable cost to turn revenue.
4) Generally speaking, a business should look for a sector with the fewest opponents.

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