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# **SUSTAINABLE NEW PRODUCT DEVELOPMENT: INCORPORATING ECO-FRIENDLY PRACTICES INTO PRODUCT DESIGN AND MANUFACTURING AT HERITAGE FOODS INDIA Ltd.**

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## **ABSTRACT**

New Product Development (NPD) is a systematic process of transforming innovative ideas into marketable products that meet customer needs and organizational objectives. In today's highly competitive business environment, companies must continuously develop new products to maintain growth, improve customer satisfaction, and achieve a sustainable competitive advantage. The NPD process involves idea generation, idea screening, concept development, market research, product design, prototype development, testing, commercialization, and post-launch evaluation.

The success of a new product depends on understanding customer requirements, technological advancements, market trends, and effective marketing strategies. Organizations that invest in research and development can identify emerging opportunities and create products that offer superior value to consumers. New product development not only helps firms expand their product portfolio but also enhances brand image, increases market share, and improves profitability.

This study focuses on the importance, stages, challenges, and success factors of new product development. It examines how businesses use innovation, market analysis, and customer feedback to create products that satisfy consumer expectations. The study concludes that a well-planned and customer-oriented product development process is essential for long-term business success and growth in dynamic markets.

## **I. INTRODUCTION**

New Product Development (NPD) is the process of creating, designing, and launching a new product or improving an existing product to meet changing customer needs and market demands. It is a vital business function that helps organizations remain competitive, increase profitability, and achieve long-term growth. In today's dynamic business environment, technological advancements, changing consumer preferences, and intense competition make continuous product innovation essential for success.

The New Product Development process involves several stages, including idea generation, idea screening, concept development, market analysis, product design, prototype testing, commercialization, and post-launch evaluation. Each stage plays a crucial role in ensuring that the final product meets customer expectations and achieves business objectives. Companies use market research, customer feedback, and technological innovations to identify opportunities and develop products that provide superior value.

Effective new product development enables organizations to expand their product portfolio, enter new markets, strengthen brand image, and gain a competitive advantage. However, the process also involves challenges such as high development costs, market uncertainty, changing customer preferences, and the risk of product failure. Therefore, successful NPD requires careful planning, strategic decision-making, cross-functional coordination, and a strong focus on customer needs.

In the modern business world, new product development has become a key driver of innovation and organizational success. Companies that continuously invest in research and development are better positioned to introduce innovative products, satisfy customers, and maintain sustainable growth in the marketplace.

## **NEED AND IMPORTANCE OF THE STUDY**

### **Need for the Study**

- To understand the significance of new product development in achieving business growth and competitiveness.
- To examine the various stages involved in the product development process.
- To identify factors that influence the success or failure of new products in the market.
- To analyze the role of innovation and technology in developing new products.
- To study customer needs and preferences that drive product development decisions.
- To evaluate the challenges faced by organizations during product development and launch.
- To understand the contribution of research and development activities to organizational success.

### **Importance of the Study**

- Helps organizations understand the importance of innovation in sustaining competitive advantage.
- Provides insights into effective product development strategies and practices.
- Assists businesses in identifying customer requirements and market opportunities.
- Enhances decision-making related to product design, pricing, promotion, and distribution.
- Helps reduce the risks associated with new product failures.
- Supports organizations in improving product quality and customer satisfaction.
- Encourages the adoption of advanced technologies and market-oriented approaches.
- Contributes to increased sales, market share, and profitability.
- Helps companies respond effectively to changing market trends and consumer preferences.
- Provides valuable knowledge for managers, researchers, and students interested in product innovation and development.

## **OBJECTIVES OF THE STUDY**

- To study the process and significance of New Product Development (NPD) in achieving organizational growth and competitive advantage.
1. To understand the concept and importance of new product development in modern business organizations.
  2. To examine the various stages involved in the new product development process.
  3. To analyze the role of market research in identifying customer needs and market opportunities.
  4. To study the impact of innovation and technology on product development.
  5. To identify the factors influencing the success and failure of new products.
  6. To evaluate the effectiveness of product design, testing, and commercialization strategies.
  7. To assess the role of customer feedback in improving product performance.
  8. To examine the challenges faced by organizations during product development and market introduction.
  9. To understand how new product development contributes to customer satisfaction and business profitability.
  10. To provide suggestions for improving the effectiveness of new product development activities in organizations.

## **II. RESEARCH AND METHODOLOGY**

The Study was conducted by convent sampling and was administrated through questionnaire. This research was

conducted for **Heritage Foods (India) Limited**. New product “**New dairy\Retail Products**”. The base customers are the General public, constructors, builders, Suppliers, developers to know their opinion about the process of advertising and there was a good response.

#### **Data Collection Tools**

**Primary Data:** The data collected was /is primary data. It requires to meet the objectives of the project was obtained mainly as primary data to know the opinion of the respondents about the process of advertising.

**Secondary Data:** Secondary Data includes the collection of information from several journals, reports, magazines and through internet etc.

**Sample Design:** A sample design of 100 respondents was taken and segmented into Public.

**Type of Questionnaire:** The questionnaire consists of open ended, multiple choice dichotomous and closed ended questions.

To evaluate the true picture of advertising process, the data was collected; classified, analyzed and interpreted the results were converted into percentages and numbers so as to know the correct figure of preference.

#### **Limitations**

1. The study is limited to the information collected from selected respondents and may not represent the views of all consumers or organizations.
2. The accuracy of the study depends on the reliability and honesty of the responses provided by the respondents.
3. Due to time constraints, the study covers only a limited aspect of the new product development process.
4. The study is confined to a specific geographical area and therefore the findings may not be applicable to other regions.
5. Financial and resource limitations restricted the collection of a larger sample size.
6. Rapid changes in market trends, technology, and consumer preferences may affect the relevance of the findings over time.
7. The study focuses mainly on new product development practices and does not cover all aspects of product management.
8. Some respondents may have been reluctant to provide complete information, which could influence the results.
9. Secondary data used in the study may contain limitations related to availability and accuracy.
10. The conclusions and recommendations are based on the data collected during the study period and may vary under different market conditions.

### **III. REVIEW OF LITERATURE**

#### **About Market research**

#### **New product development**

In business and engineering, **new product development (NPD)** is the term used to describe the complete process of bringing a new product or service to market. There are two parallel paths involved in the NPD process: one involves the idea generation, product design and detail engineering; the other involves market research and marketing analysis. Companies typically see new product development as the first stage in generating and commercializing new products within the overall strategic process of product life cycle management used to maintain or grow their market share.

A firm's new product development efforts are shaped by its size, as well as the nature of the industry in which it operates. New products may be defined as any product, service, or idea not currently made or marketed by a company, or which the consumer may perceive as new. Many types of new products exist, from never-seen-

before products like Apple's personal communicator, to repositioned standards like Sears' shift to Sears Brand Central. Various studies suggest that between 50 and 80 percent of new products fail—the greater the rate of new product development, the higher the failure rate. *New Product News* predicts that more than 36,000 new products will be brought to market in 2005. Although there are numerous reasons why new products fail, faulty management and planning are at the core of most failures. Therefore, managing the new product development process is a key to a healthy organization.

### Fuzzy Front End

The Fuzzy Front End is the messy "getting started" period of new product development processes. It is in the front end where the organization formulates a concept of the product to be developed and decides whether or not to invest resources in the further development of an idea. It is the phase between first consideration of an opportunity and when it is judged ready to enter the structured development process (Kim and Wilemon , 2002; Koen et al., 2001). It includes all activities from the search for new opportunities through the formation of a germ of an idea to the development of a precise concept. The Fuzzy Front End ends when an organization approves and begins formal development of the concept.

Although the Fuzzy Front End may not be an expensive part of product development, it can consume 50% of development time (see Chapter 3 of the Smith and Reinertsen reference below), and it is where major commitments are typically made involving time, money, and the product's nature, thus setting the course for the entire project and final end product. Consequently, this phase should be considered as an essential part of development rather than something that happens "before development," and its cycle time should be included in the total development cycle time.



Koen et al. (2001, pp. 47–51) distinguish five different front-end elements (not necessarily in a particular order):

1. Opportunity Identification
2. Opportunity Analysis
3. Idea Genesis
4. Idea Selection
5. Concept and Technology Development

The first element is the opportunity identification. In this element, large or incremental business and technological chances are identified in a more or less structured way. Using the guidelines established here, resources will eventually be allocated to new projects... which then lead to a structured NPPD (New Product & Process Development) strategy. The second element is the opportunity analysis. It is done to translate the identified opportunities into implications for the business and technology specific context of the company. Here extensive efforts may be made to align ideas to target customer groups and do market studies and/or technical trials and research. The third element is the idea genesis, which is described as evolutionary and iterative process progressing from birth to maturation of the opportunity into a tangible idea. The process of the idea genesis can be made internally or come from outside inputs, e.g. a supplier offering a new material/technology, or from a

customer with an unusual request. The fourth element is the idea selection. Its purpose is to choose whether to pursue an idea by analyzing its potential business value. The fifth element is the concept and technology development. During this part of the front-end, the business case is developed based on estimates of the total available market, customer needs, investment requirements, competition analysis and project uncertainty. Some organizations consider this to be the first stage of the NPPD process (i.e., Stage 0).

The Fuzzy Front End is also described in literature as "Front End of Innovation", "Phase 0", "Stage 0" or "Pre-Project-Activities".

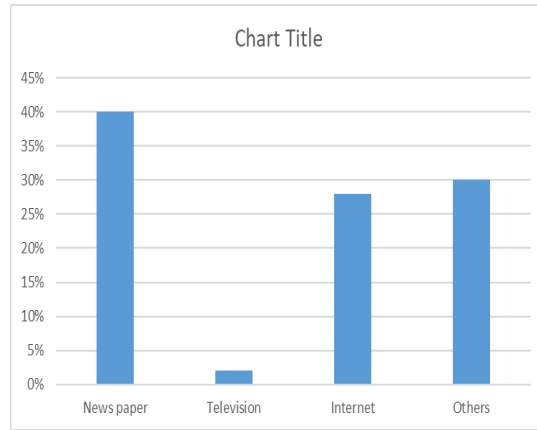
A universally acceptable definition for Fuzzy Front End or a dominant framework has not been developed so far. In a glossary of PDMA, it is mentioned that the Fuzzy Front End generally consists of three tasks: strategic planning, concept generation, and, especially, pre-technical evaluation. These activities are often chaotic, unpredictable, and unstructured. In comparison, the subsequent new product development process is typically structured, predictable, and formal. The term *Fuzzy Front End* was first popularized by Smith and Reinertsen (1991). R.G.Cooper (1988) describes the early stages of NPPD as a four step process in which ideas are generated (I), subjected to a preliminary technical and market assessment(II) and merged to coherent product concepts(III) which are finally judged for their fit with existing product strategies and portfolios (IV).

The final gate leads to a dedicated new product development project. Many professionals and academics consider that the general features of Fuzzy Front End (fuzziness, ambiguity, and uncertainty) make difficult to see the FFE as a structured process, but rather as a set of interdependent activities (e.g. Kim and Wilemon, 2002). However, Husig et al., 2005 argue that front-end not need to be fuzzy, but can be handled in a structured manner. Peter Koen argue that in the FFE for incremental, platform and radical projects, three separate strategies and processes are typically involved. The traditional Stage Gate (TM) process was designed for incremental product development, namely for a single product. The FFE for developing a new platform must start out with a strategic vision of where the company wants to develop products and this will lead to a family of products. Projects for breakthrough products start out with a similar strategic vision, but are associated with technologies which require new discoveries. It is worth mentioning what are incremental, platform and breakthrough products. *Incremental products* are considered to be cost reductions, improvements to existing product lines, additions to existing platforms and repositioning of existing products introduced in markets. *Breakthrough products* are new to the company or new to the world and offer a 5-10 times or greater improvement in performance combined with a 30-50% or greater reduction in costs. *Platform products* establish a basic architecture for a next generation product or process and are substantially larger in scope and resources than incremental projects

#### IV. DATA ANALYSIS AND INTERPRETATION

**How do you advertise your business?**

News paper	40%
Television	2%
Internet	28%
Others	30%

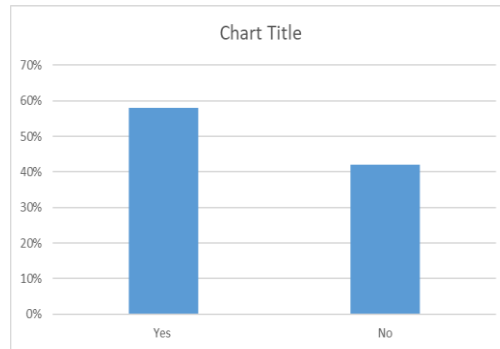


**Interpretation:**

The above table discloses the facts that most of the respondents i.e., 40% use newspaper for advertising, 30% of them uses their own advertisement tools.,28% of the respondents are using online media for advertising.only2% of them are using Television as their advertising tool.

**Do you think website is the easiest way of advertisement?**

Yes	58%
No	42%

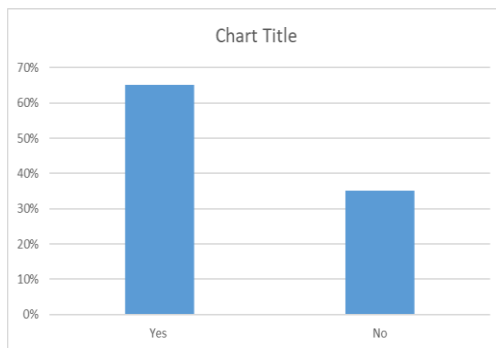


**Interpretation:**

The above chart reveals that 58% of respondents are thinking website is an easiest way of advertising, 42% of them do not agree with these. So, there is an increasing demand in online advertising.

**Do you have website? If Yes Please Mention your website?**

Yes	65%
No	35%

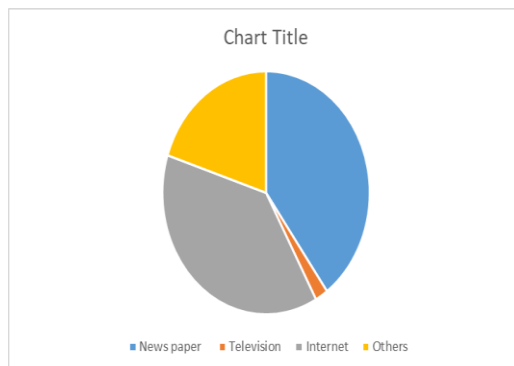


**Interpretation:**

By observing the above graph we can know that 65% of the respondents have their own websites, only 35% of them do not maintain any website. By seeing this we can know that many of the respondents use Internet as tool for advertising.

**How do you expose your new scheme to public?**

News paper	40%
Television	2%
Internet	38%
Others	20%



**Interpretation:**

Looking at the above picture 40% of the respondent’s use newspapers, 38% use internet, 20% of the respondents are using their own way. By these we can conclude many respondents are advertising their new scheme through Newspapers and Internet.

**V. FINDINGS**

- ❖ Most of the Public and customers use Internet next to News paper for advertising.
- ❖ I have found that Most of the Public and customers think website is the easiest way of advertising.
- ❖ As per my Survey I found that many new product Advertising sites serve somewhat important to Public.
- ❖ I found that Selling and buying are the important purpose of watching new products.
- ❖ Most of the Public and customers agree that the advertising through online is expensive.
- ❖ Most of the Public and customers agree that none of the leading online advertising websites gives clear information with images.

## VI. CONCLUSION

Businesses need to use all the resources they have, including skills and knowledge. Continuous improvement at Corus provides a process in which everybody can play a part in moving the business forward. Working in teams enables employees to share their ideas and expertise.

Using the expertise of staff helps the business to develop. It also empowers individuals to take on responsibility and provides them with increased job satisfaction.

New product development may involve risk, such as investing time, resources and money in new technologies. However, in meeting these needs, it has also opened up other business opportunities. By winning this contract, Corus is now able to make this higher grade steel available as part of its product portfolio. As a long-term strategy, it will help the business to outperform its competitors and increase its market share.

## VII. Suggestions:

- ✚ As Most of the Public and customers think Online advertising is Expensive so it will be better to use penetration method.
- ✚ As most of the websites do not provide clear information with images so it will be better to include images in our new products.
- ✚ Most of the Advertisement websites target only Public so it will be better to provide an opportunity forces tomerslike Developers, Suppliers, etc.
- ✚ Most of the buyers buy on installment basis so it will be better to provide information of financial institutions or bankers who provide credit facility.
- ✚ Regular Updating should be made for better services.

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