30/04/21

MP 482
PRODUCT DEVELOPMENT AND DESIGN.

Christy Varghese
CSE-A Roll no. 34
Btech 88.

PART-B

(3) PRODUCT LIFE CYCLE

Introduction.
- the manufactured product is introduced in the market.
- In this stage it will create awareness and trial of the product launched.

Features :
- Relatively high peize.
- Covers less market.
- More money spend for promotion.

Growth.
- Products gets into more customers.
- Objective to maximize market share.

Features :
- Profit at peak level
- Mass market approach
- Price decrease.

Maturity
- Sales continue to rise but more slowly.
- The objective is to maximize profits depending market share.

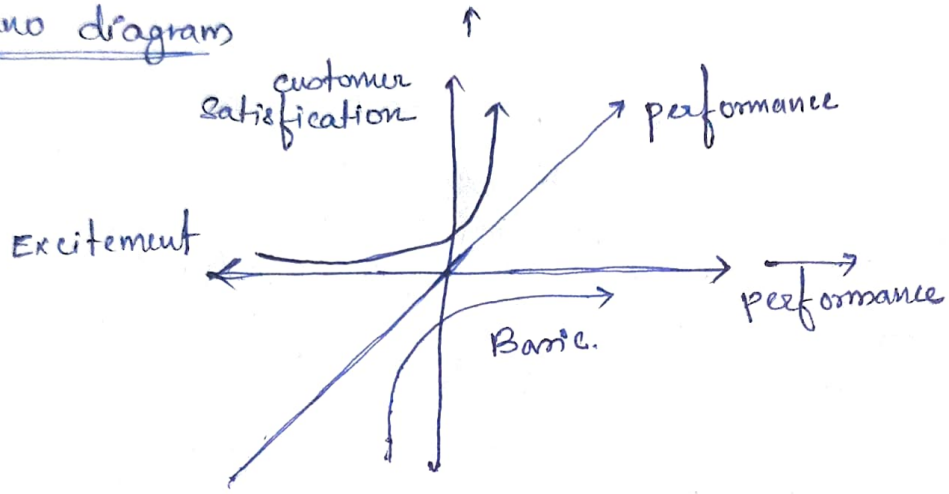
Features :
- Profit gets stable
- Price reduces further.
- Competition as its peak.

Decline
- Heretic sales decline permanently
- The expenditure begin to equal the profits or worse.

Features :
- Market is saturated.
- Sales and profit decline.

Part B

(2) Kano diagram



* when the performance and customer satisfaction balanced we get a "performance" kano diagram.

* If the customer satisfaction is higher than the performance of the product an "excitement" kano diagram is obtained.

* whereas when the performance of the product is higher than the customer satisfaction we get a Basic kano diagram.

* For excitement, the performance of the product is normal in the beginning but at a particular time the demand & response for the product is increased.

* For basic, the customers are not buying the product or else they are not interested on the product.

PART B

(1) Need - metrics matrix (Table fan).

Need \ Metric	No. of windings	Motor	Capacitor	Long cable	Productive cons	Speed of motor
Full Room circulation	*	*	*			*
Safety		*	*	*	*	
Portability		*	*	*	*	
Aesthetics	*				*	*
Low consumption		*	*			*
Durability	*	*	*	*	*	

PART A.

(1) There are mainly 3 types of customer needs:

(i) functional needs

functional needs are the most tangible and obvious of the three main types of customer needs. functional needs can be broad or extremely specific, depending on the customer's buying criteria.

for example: A normal person who wish to start gaming says "I need a gaming phone". while a gamer will say "I need a Asus Rog 5".

(ii) Social Needs

A customer need that relates to how a person wants to be perceived by others when using a product or service. while social needs aren't typically customer's primary concern when considering a purchase, they can influence the decision.

for example: Considering the previous example, the normal person joins the gaming society where he sees his friends using high tech gaming phone. The normal person, will be influenced and will buy the phone with similar specs.

(iii) Emotional Needs:

These type of needs are similar to social needs, in that they're typically secondary to functional needs. It refers to what & how the customer feel over the product.

for eg: Taking the previous examples, the gamer will be passionated towards gaming because of that feeling & emotional touch he wish to buy the Asus Rog 5 phone which is the best gaming phone.

PART - A

(2) Modular Architecture

- The interactions b/w chunks are well defined and are generally fundamental to the primary functions of the products.

Types of Modularity

Modular architecture mainly contain 3 types :

* slot - modular architecture.
- Each of the interfaces b/w chunks in a slot - modular architecture is of a different type from the others, so that the various chunks in the ~~period~~ product cannot be interchanged.

* Bus modular architecture
- In this, there is a common bus to which the other chunks cannot via the same type of interface.

* Sectional modular architecture
- In a sectional modular architecture, all interfaces are of the same type, but there is no single element to which all the other chunks attach.

Each type embodies a one-to-one mapping from functional elements to chunks and well defined interfaces.

PART A

(3) * When the customer needs and constraints are understood, the industrial designers helps the team to conceptualize the product.
* During the concept generation stage engineers naturally focus their attention upon finding soln. to the technical sub function of the product.
* Industrial designers make simple sketches, known as thumbnail sketches of each concept.
* These sketches are fast and inexpensive medium for expressing ideas and evaluating possibilities.

PART- A

④ Design for Manufacturing (DFM)

DFM is design based on minimizing the cost of production and/or time to market for a product, while maintaining an appropiate level of quality.
DFM involves minimizing the number of parts in a product and selecting the appropriate manufacturing process.

In product design,

- we can estimate the manufacturing cost using DFM.
- we can reduce the costs of components.
- Reduce the costs of assembly.
- Reduce the costs of supporting production.
- Consider the impact of DFM decisions on other factors.