
Product Decisions New Product Development (NPD)

Marketing Management
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Product Related Decisions

- Branding
 - Positioning
 - Packaging
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Brand communicates hidden benefits or quality

- Some benefits are hard to communicate
 - And so are hidden
 - Such as fragrance of perfume
 - Often products fail despite the best efforts of seller
 - But buyer does not know effort of seller
 - "Quality" is hidden
 - Brand name can help in these cases
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Brands Have Economic Value

- Consumers associate brands with certain benefits
 - Functional
 - Reliability, performance, economical
 - Maytag, Bose, Honda
 - Psychological
 - Prestige, Safe, Wholesome
 - Tiffany's, Volvo, Disney
- And so would pay a premium for the benefits that they expect from the brand

Brand is an implicit contract

- Brand helps to identify products
 - Consumers can "punish" poorly performing products
 - By refusing to buy it in the future
- Building and maintaining brand reputation is costly
 - Brands would avoid consumer displeasure
 - So they deliver what is promised

Methods of Branding

- Corporate Brands
 - Colgate, GE, Clorox, Maytag
- Product specific brands
 - Tide, Maxwell House, Kleenex
- Umbrella Brands
 - One brand name used in several product categories
 - Like corporate brands
 - Lipton —Tea and soup
 - With sub-brands
 - Sony Trinitron, Sears Kenmore and Craftsman
- Co-brands
 - Citibank Visa, Exxon-Mobil, Intel inside

Brand Equity

- Is an asset
 - For Coke to introduce a diet drink would be costly, but the cost could be kept lower by calling the drink Diet Coke
 - If Coke were to be marketed without the brand name but holding all other things equal the product would command a lower price; the brand Coke carries a premium in the consumers' mind
- These sorts of economic advantages that a brand has constitute its brand equity.

Brand Equity

- Brand equity can be built up
 - By advertising (awareness)
 - Over time, reputation (perceived quality)
 - Over time, through satisfied customers (brand loyalty)
 - Co-branding and similar associations

Brand Extensions

- Leverage brand equity to enter new product/markets
 - Evaluate fit with new offering
 - Reduce cost of introduction
 - Get rapid trial and adoption
 - Save on "positioning" effort and costs
 - Evaluate potential negatives for brand equity
 - Dilution, negative feedback

Positioning

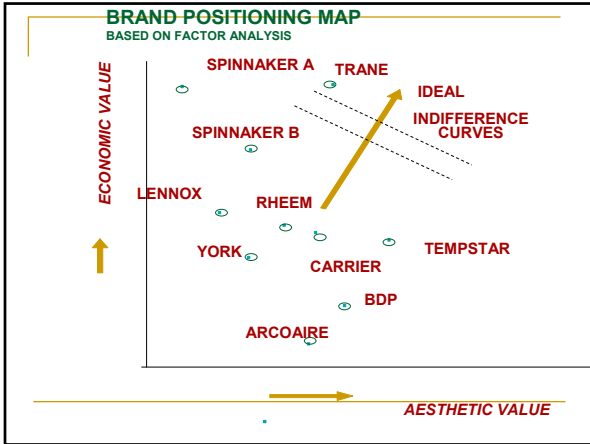
- How brands are perceived relative to each other
 - Objective characteristics
 - Subjective characteristics
 - Benefits
- Unique selling proposition
- Ideal Points
 - Holes in the market

PRODUCT DIFFERENTIATION

- SOME WAYS TO DEFINE DIFFERENTIATION:
 - A ROSE IS NOT A ROSE...
 - EACH PRODUCT CAN (MUST?) HAVE A *UNIQUE SELLING PROPOSITION (USP)*
 - EXAMPLES: COLAS: *THE REAL THING / PEPSI GENERATION*
SHAMPOOS: *GENTLE / PROTEIN*
AIRLINES: *ON-TIME / LOVE TO FLY / FRIENDLY SKY*
CARS: *MAKE IT SIMPLE / QUALITY IS JOB 1 / RELENTLESS PURSUIT OF PERFECTION*
 - DIFFERENTIATE ATTRIBUTES OR FEATURES
 - EXAMPLES: LARGE SCALE TV: 45" / 53"
 - SUPERMARKET: QUALITY / EDLP
 - KETCHUP: RUNNY / THICK
 - TISSUES: SOFT / ABSORBENT

Perceptual Map

- One way to see how products are differentiated is to
 - Ask how consumers see the products
 - What are the "benefit dimensions"?
 - How are the brands "placed" relative to each other
 - How is the "ideal" brand placed
 - There may be consumer segments
- The map can tell a manager
 - Whether there are "holes" in the market
 - Which brands are close substitutes---cross elasticity



Packaging

- Packaging is an attribute and so has
 - Consequences
 - Both functional and psychological
 - Leading to values
 - Both terminal and instrumental
- Can help differentiate both on
 - Objective (functional) benefits and
 - Subjective (psychological) benefits

Packaging affects Production Process

- Most important, packaging may not affect utility of consumption as much as the production process itself
 - Can examine product before purchase
 - Can access and store product easily
 - Can prolong pantry life
 - Can affect ease of consumption (straws in juice packages!)
 - Can affect cost of disposal

New Products

- Lifeline of successful companies
 - Gillette known for its absolute dominance in razor and blades market
 - Duracell, Gillette Toiletries (Right Guard, Soft&Dri), Stationery products (Parker, Paper Mate), Oral-B toothbrushes, Braun electrical appliances
 - Profitable, fast growing, each number one world-wide and anchored by a steady flow of innovative ideas
 - Gillette is a "new product machine" – Wall Street Journal
 - Encourages innovations that will cannibalize its established products
 - "If we don't bring out a new zinger, someone else will"

Problems with Some NP

- Endogeneity between support and demand
 - HDTV
 - Film processing – APS
- Failure rates are very high ~ 80% of new products are classified as failures
 - New Coke, Zap Mail (FedEx), Polarvision instant movies (Polaroid), Arch Deluxe sandwiches (McDonald's)
 - Of 25,000 new consumer food, beverage, health care products that hit the market each year only 40% will be around 5 years later
 - Failure rates of Industrial products ~ 30%

Why Products Fail?

- Insignificant "point of difference"
- Incomplete market/product definition
 - Market research – needs analysis?
- Target market too small (inaccurate forecasts)
- Poor execution of marketing mix
 - Minute Maid Squeeze Fresh OJ – very messy
- Bad timing – too late?
- No economical access to buyers – can be costly to get shelf space

Other

- Market size forecasts
- Positioning, pricing, distribution support (APS)

Approaches to NPD

- Classical linear approach
- Rugby approach
- Target costing approach

Classical Linear Approach (CLA)

- Opportunity Identification
 - Identify consumer segment needs that are worth satisfying
- Once market entry decision has been – generate NP ideas
 - Customer suggestions – e.g. Infinity SUV
 - Employee – General Mills Granola Bars
 - R&D breakthroughs – Sony (VCRs, Walkman, DVDs)
 - Competition – Honda Odyssey

Design (CLA)

- Filter/Design
 - Needs of target consumers
 - Feasibility
 - Demand forecasts
 - Other information to filter/weed
 - Use above information to proceed with design efforts

Testing (CLA)

- Given prototype
 - Test with customers from the target group
 - Test results help refine product, demand forecasts and may help thwart some concepts
 - Test marketing – behavior in a real shopping environment with real marketing mix (price, advertising and other promotional activity)

Rollout (CLA)

- Measures of interest
 - Trial
 - Repeat purchase rate

Rugby Approach (RA)

- In contrast to sequential approach to PD as in CLA, RA is a more parallel in nature
- Product development teams are cross-functional
 - Autonomous (once goals have been defined)
 - Constant interaction between members with different backgrounds minimizes bottlenecks
 - More sensitive to requirements of different departments
 - Lessons learnt can be transferred to the entire organization

Target Costing Approach (TCA)

- Ascertain product features that are desirable
- Estimate the price end consumer is willing to pay
- What kind of product will satisfy the needs – quality, other attributes?
- Unit Profit?
- $\text{Unit Cost} \leq \text{Price} - \text{Unit Profit}$

NPD Process

- Idea/Concept generation
 - Employees, R&D, customers, competitors
 - Think tanks internal or external to the company can also assist in generating ideas
- Concept screening
 - Consumer surveys – conjoint analysis
 - Focus groups
 - Demos

NPD Process

- Product Definition
 - Incorporate consumer feedback early in the process
 - Conflicting requirements will need to be prioritized (output from Conjoint may be useful)
 - Establish link between customer needs and physical characteristics of the product (House of Quality)

Testing

- Product use tests
 - Initial tests conducted with small consumer or employee samples
 - Consumers are asked to use the product over a time period – reactions are solicited to make inferences about the likely success
 - More sophisticated tests could simulate purchase environments
 - More elaborate tests could be conducted over extended periods (initial wear-out)
 - Helps uncover problems that manifest only over an extended period of use

Market Tests

- Test markets
 - Trial rate
 - Repeat rate
 - Consumption or Usage rate
- How to choose test markets?
- Other decisions
 - How long to test? How much to spend? What information to gather?

Sales Forecasting

- Extremely hard but crucial
- Sales projections influenced by
 - Awareness
 - Penetration (how many)
 - Repeat rate (how often)
 - Usage rate (how much)

Post Rollout Support

- Very Critical
- Quality product is not enough
- Initial support must exist for product success

Conjoint Analysis

- Premise – a product is a bundle of attributes
- Each attribute can have many levels – example, Pizza crust (thin, thick, pan)
- Conjoint analysis uses data on consumers' overall preferences for a selected number of product bundles
 - Decomposes these overall preferences into components that are derived from the **different attribute levels**

Conjoint Analysis: An Example

- Packaged goods firm interested in introducing a new frozen pizza
- Based on focus groups the following attributes and levels are being considered:
 - Crust 3 levels (thin, think, pan)
 - Toppings (4) (veggie, pepperoni, sausage, pineapple)
 - Type of cheese (3) (mozzarella, Romano, mixed)
 - Quantity of cheese (3) (2, 4 or 6 oz)
 - Price (3) (\$7.99, 8.99 or 9.99)

Collecting Data

- Present alternatives for consumers to evaluate – how many alternatives to present?
 - 324 possible combinations (3x4x3x3x3)
 - Only interested in figuring out the part-worths of 16 levels
 - Can do with evaluating as few as 16 alternatives
 - Important to NOT have alternatives that are dominated

Conjoint Analysis Output

Crust	(15 points)	Qty. Cheese	(10 points)
Pan	0	2 oz	0
Thin	10	4 oz	8
Thick	15	6 oz	10

Topping	(30 points)	Price	(35 points)
Pineapple	0	9.99	0
Veggie	10	8.99	20
Sausage	25	7.99	35
Pepperoni	30		

Conjoint Analysis: Output

Type of Cheese	(10 points)
Romano	0
Mixed Cheese	3
Mozzarella	10

Ranking Alternatives

Veggie Delite	Points	M-Lover's Treat	Points
Thin	10	Thick	15
Veggie	10	Pepperoni	30
Romano	0	Mixed	3
2oz	0	6oz	10
\$7.99	35	\$9.99	0
Total Utility	55	Total Utility	58

Implications for NPD

- Respondents prefer pepperoni (30) to veggie (10) by 20 points
- Respondents prefer paying 8.99 to 9.99 by the same 20 points
- Pepperoni premium relative to veggie is \$1
- Firm can produce a pizza that has a utility score of 100
 - Is that profitable?

Implications for NPD

- Consumer tastes are not identical
- Group consumers that place similar weights on the attributes (levels) together
 - Consumers that prefer thin/think/pan together
 - Do preferences correlate with demographic or psychographic characteristics
 - How large are these segments?
 - How many alternatives to offer? [Back](#)

New Product Development

Supplement

Product Positioning: Monopolist

- Suppose after engaging in market research the firm estimates the following
- Consumer Value = $\theta q - p$, where q is a quality index constructed using product attributes and p is the price
- θ is found to be uniformly distributed in the range [100, 500]
- What price and quality levels would be the most profitable for a monopolist?

Product Positioning: Monopolist



Firm's Problem

- Set price and quality to maximize profits
- Profit = $p(500 - p/q)/400 - 500 \cdot (q^2)$
- Optimality conditions:
 - $p/q = 250$
 - $(p/q)^2 = 1000 \cdot 400 \cdot q$
- Optimal quality: $q^* = 5/32$, $p^* = 625/16$
