

Product Analysis and Development

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Lecture 8

جامعة الجميع الذكية

ENT 614

New Product Development (Part two)



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EVERYONE'S SMART UNIVERSITY

In the previous
lecture

Product Portfolio and the Boston Matrix

Topics covered :

- What Is a Product Portfolio?
- What Should You Include in a Product Portfolio?
- What Is the Importance of a Product Portfolio?
- How To Build a Product Portfolio?
- How To Optimize an Existing Product Portfolio?

Some Examples of Product Portfolios

In this lecture

New product Development Process

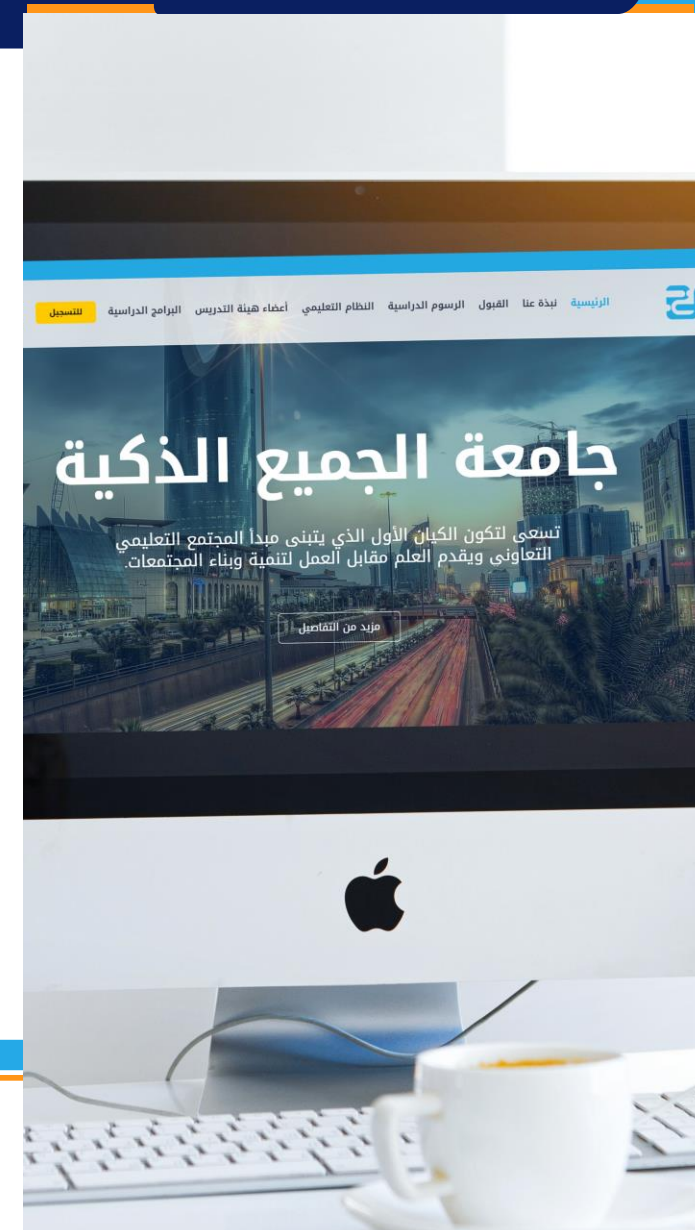
Topics covered :

- What is a Product Development Process?
- The 6 Steps of The New Product Development Process [NPD]
- Ideation and Ideation techniques
- Idea screening
- Concept development & testing



What is a Product Development Process?

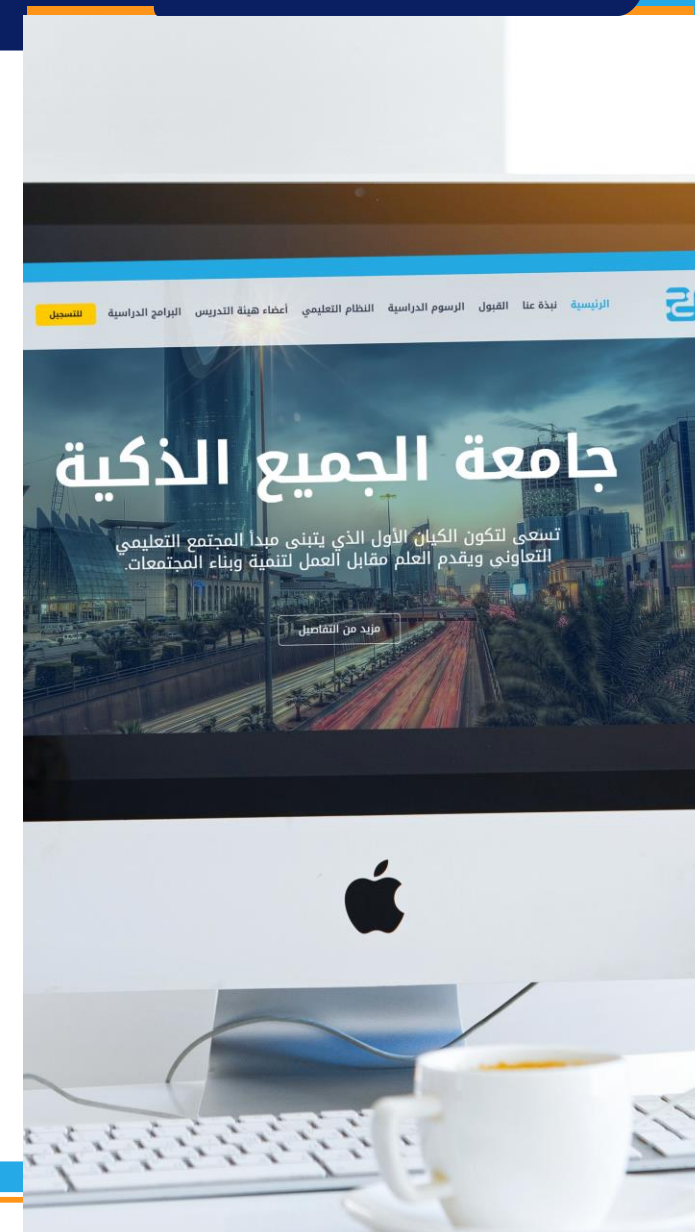
- A Product Development Process refers to the entire range of activities where a company conceptualizes and realizes a new offering.
- A product concept might originate in the **marketplace**, or in a lab or **workspace**, or from **customer requirements**, too.
- An innovation process allows teams to innovate and quickly release differentiated products rapidly



Why a Product Development Process?

- New product development is the most important strategic activity of any firm
- However, it is the **most risky** venture
- Most new products fail!
- Only **1 in 9** new product ideas are carried to the commercialization phase

High Failure rate and High Cost



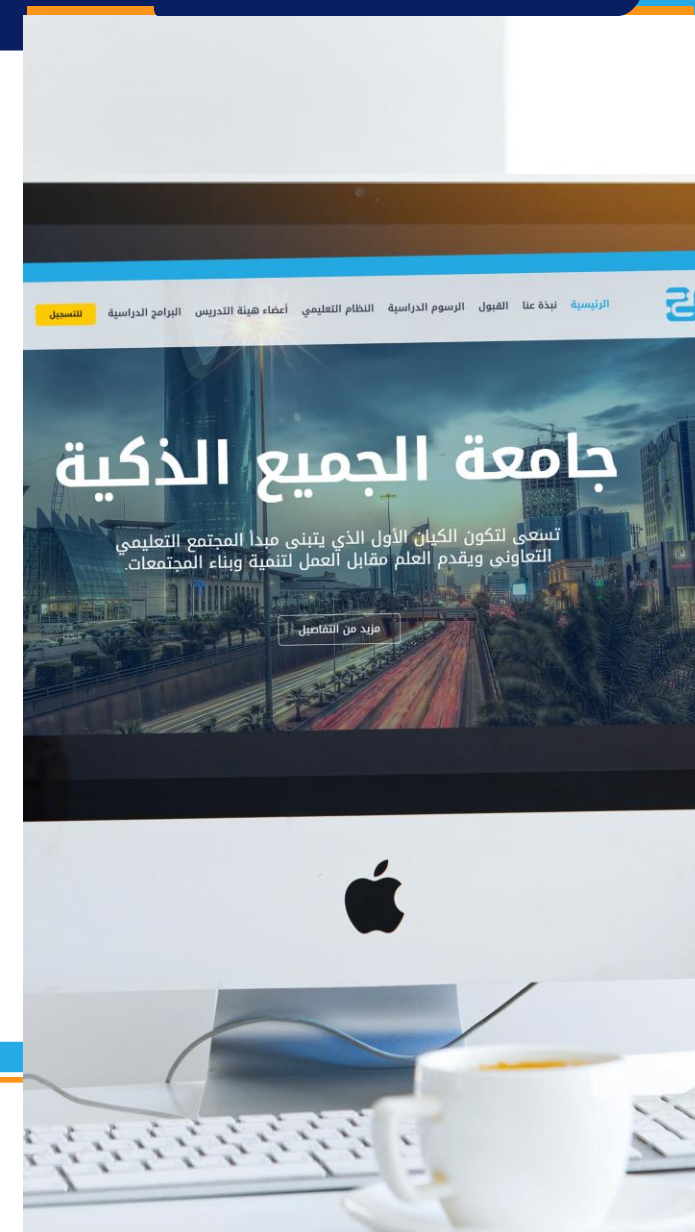
New Products

- Product Line Extension
- Significant Jump in Innovation
- True Innovation



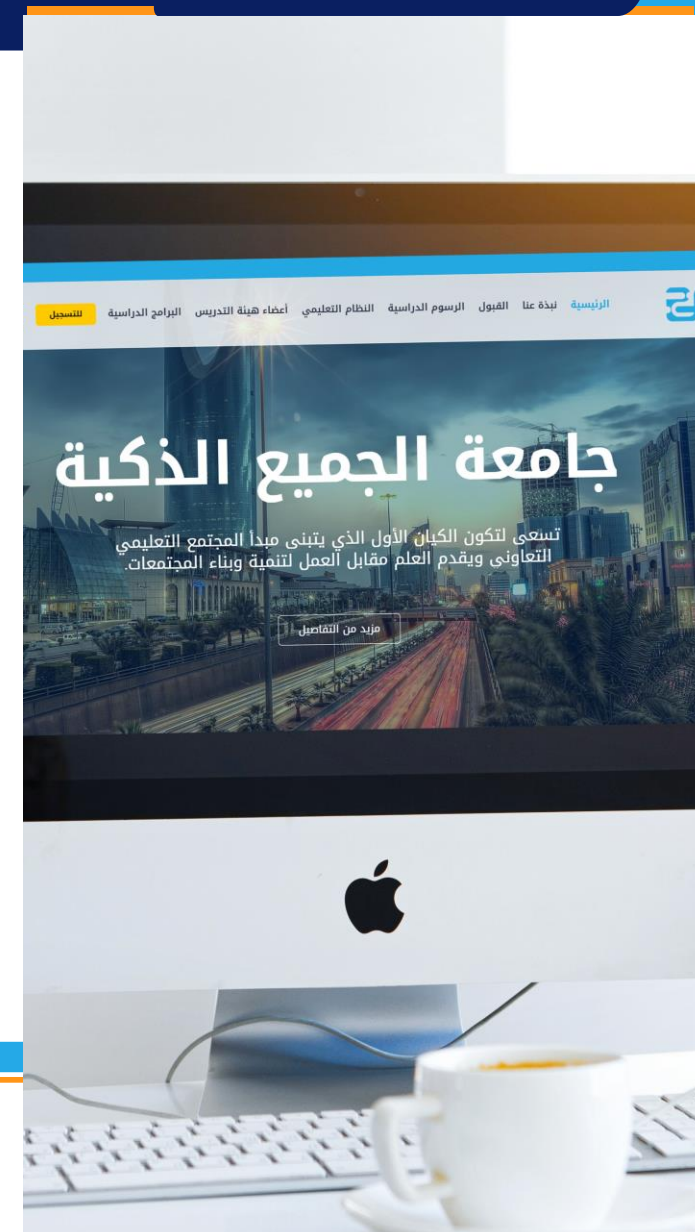
Why new products fail ?

- Poor planning and strategy
Market is not attractive
- Poor concept
- Poor execution
- Poor use of research
- Poor technology
- Poor timing
- Changes in tastes/environment
- Bad support from channel



Why new products succeed ?

- Top-management commitment
- Start with the consumer -- not the factory
- Intelligent use of research
- Find a competitive advantage
- Move quickly
- Know when to get out
- Accept, but manage risk



NEW-PRODUCT WINNERS AND LOSERS

Factor Affecting Product Success Rate	Product "Winners" (Best 20%)	–	Product "Losers" (Worst 20%)	=	% Difference (Winners – Losers)
• Point of difference, or uniquely superior product	98%		18%		80%
• Well-defined product before actual development starts	85		26		59
• Quality execution of activities before actual development starts	75		31		44
• Synergy, or fit, with marketing mix activities	71		31		40
• Quality of execution of marketing mix activities	71		32		39
• Market attractiveness, ones with large markets, high growth	74		43		31

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تسعى لتكون الكيان الأول الذي يتبنى مبدأ المجتمع التعليمي التعاوني ويقدم العلم مقابل العمل لتنمية وبناء المجتمعات.

مزيد من التفاصيل



New Product Success Factors

❑ Be close to the market

❑ Set a strategic direction

❑ Play to your strengths

❑ Strong organizational support

❑ Speed to market

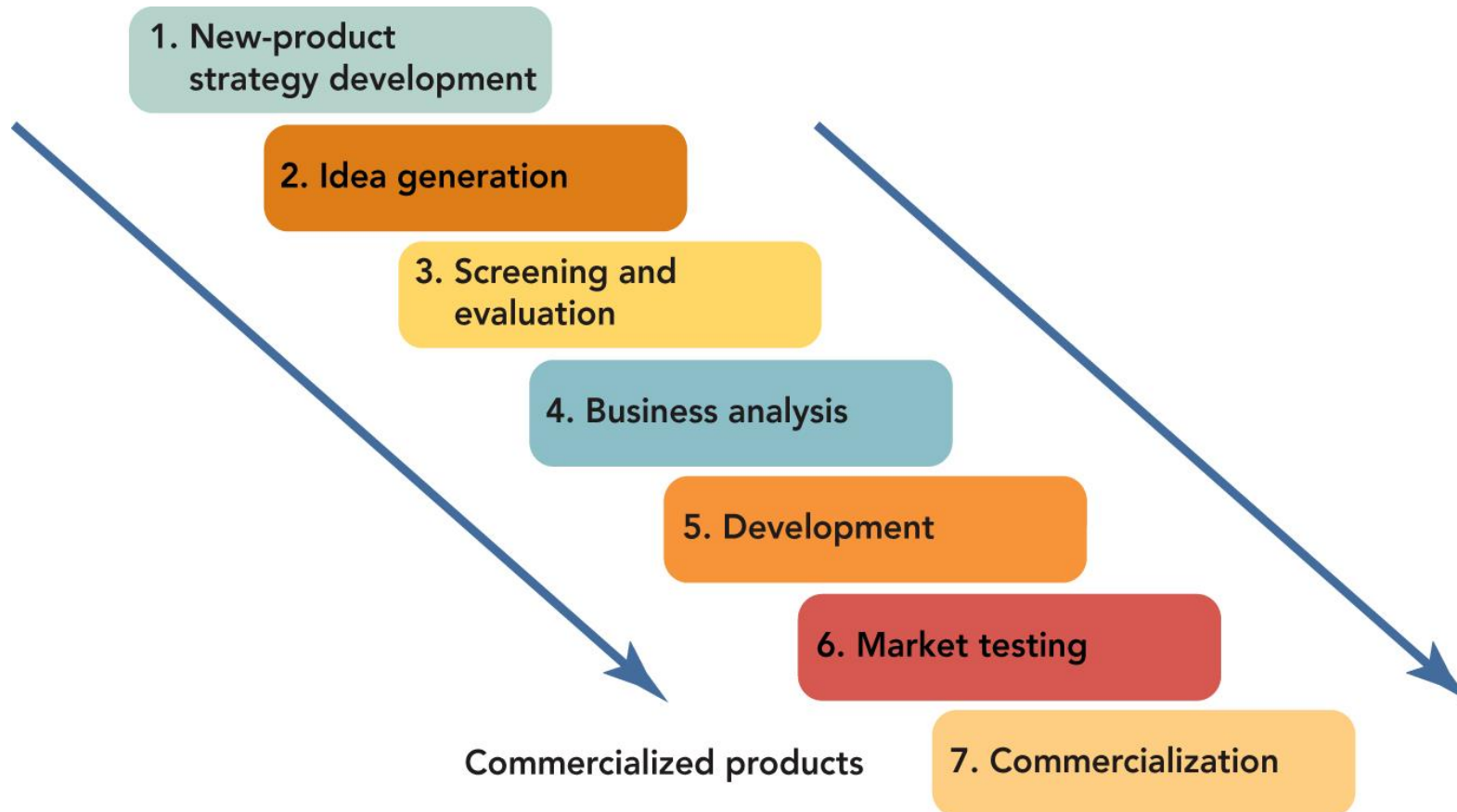
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THE SEVEN STAGES IN NEW-PRODUCT DEVELOPMENT



THE NEW-PRODUCT PROCESS

STAGE 1: NEW-PRODUCT STRATEGY DEVELOPMENT

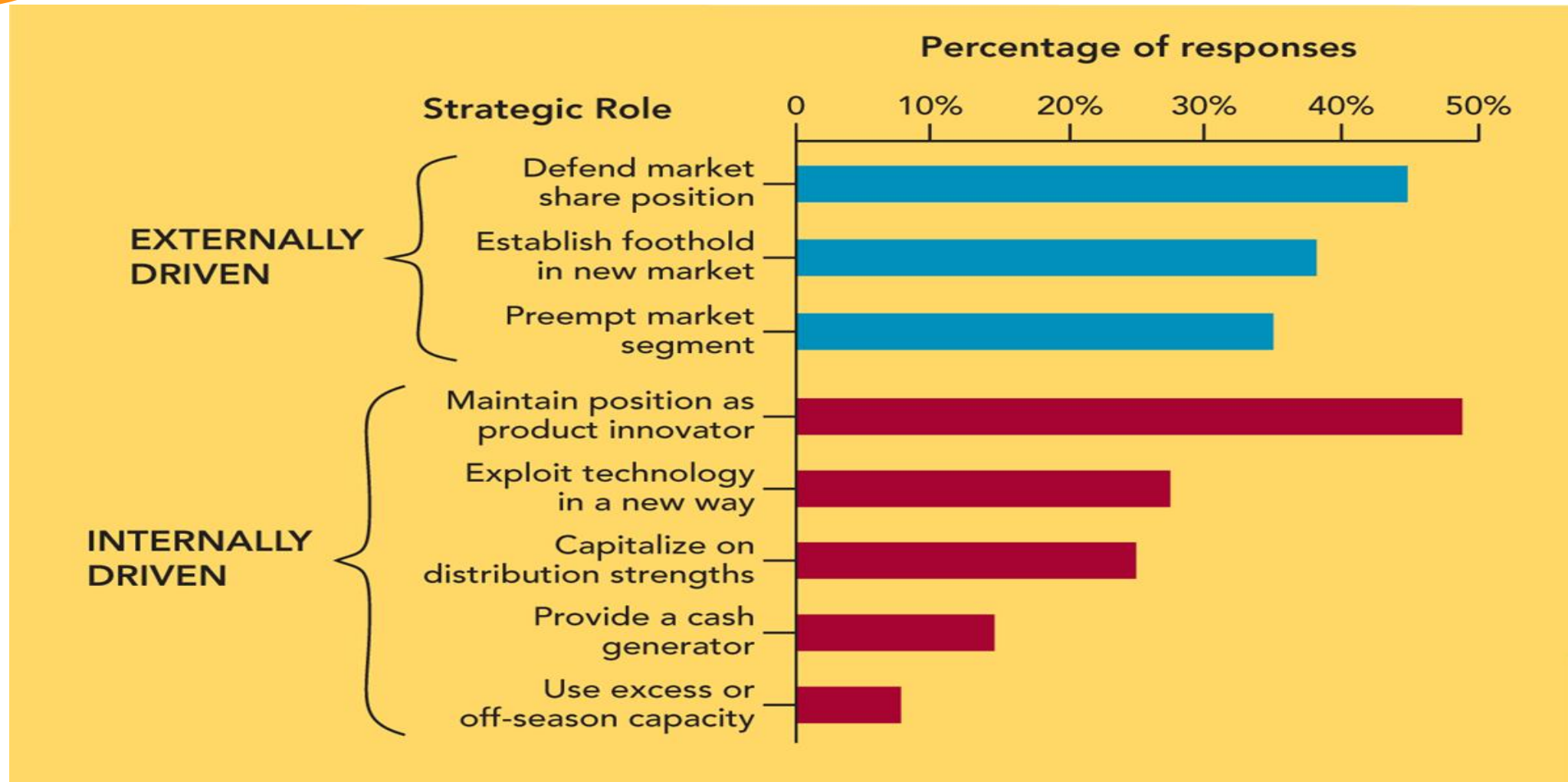
➤ New-Product Process

Stage 1 : New-Product Strategy Development

- Type of Strategy to Utilize
- SWOT Analysis Conducted
- Protocol Defined
- Strategic Role Identified



STRATEGIC ROLES OF MOST SUCCESSFUL NEW PRODUCTS



THE NEW-PRODUCT PROCESS

STAGE 2: IDEA GENERATION

- **Idea Generation**
 - **Open Innovation**
- **Customer and Supplier Suggestions**
- **Employee and Co-Worker Suggestions**
- **Research and Development Laboratories**
- **Competitive Products**
- **Universities, Inventors, and Small Tech Firms**



IDEATION (Idea Generation)

Ideation
(every one's job
& no one's
responsibility)

- **Establishing a focal point**
- **Identifying the sources of ideas**
 - Internal and external
- **Stimulating idea generation from each source**
 - Establishing flow lines or mechanisms to solicit ideas

Sources of Ideas

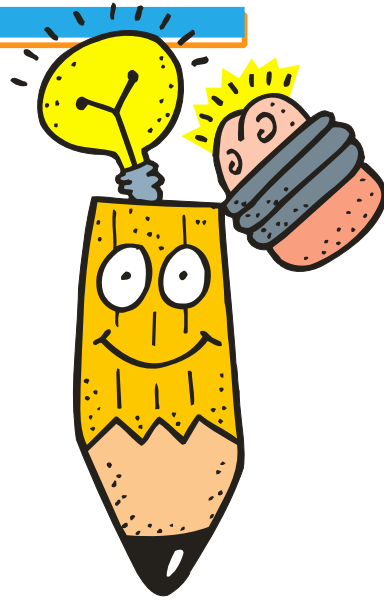
INTERNAL SOURCES

- **Employees**

- Across the Functions
 - Sales
 - Design / R&D
 - Production

Methodologies

- **Suggestion Schemes**
 - Possible formats of Suggestion Scheme:
 - On-going suggestion scheme
 - 'Idea of the month' type contests
 - Targeted Effort
 - Tips for Internal Suggestion Schemes:
 - Publicize the scheme widely
- Handling ideas promptly and provide timely feedback to the submitter
 - Welcome all ideas
 - Provide guidance & assistance
 - Offer incentives
 - Manage the suggestion scheme



Ideation (Internal sources)

- **Group Creativity Methods:**
 - **Brainstorming**
 - Invite an eclectic group
 - Run the session off-site
 - Have a pre-session mailing
 - Ensure that the 'rules' of brainstorming are well understood by everyone
 - Have a moderator who runs the session
 - **Reverse Brainstorming**
 - **Focus Groups**
 - **Attribute Listing etc.**
- **Scouting Time**
- **The Idea Bank**

Ideation (Idea Generation)

EXTERNAL SOURCES

- **Customers**
 - Group Discussions
 - Customer Panels
 - Customer Surveys
 - Working with Lead Users
- **Competitors**
- **Trade Shows**
- **Trade Publications**
- **Patents—the universal clearing house**
- **Idea Brokers—the idea middlemen**
- **Suppliers**
- **Trade Partners**
- **Private Inventors**
- **Universities—a brain trust in your back yard**

FOUR most powerful Ideation techniques:

Brainstorming:

The first ideation technique, brainstorming, is a way of **problem-solving** that combines several approaches. It invites people to post or brainstorm ideas at random. It allows the team to express their thoughts openly.

It also generates a slew of new ideas that you can refine into a unique, actionable concept. It allows the crew to express their thoughts openly.

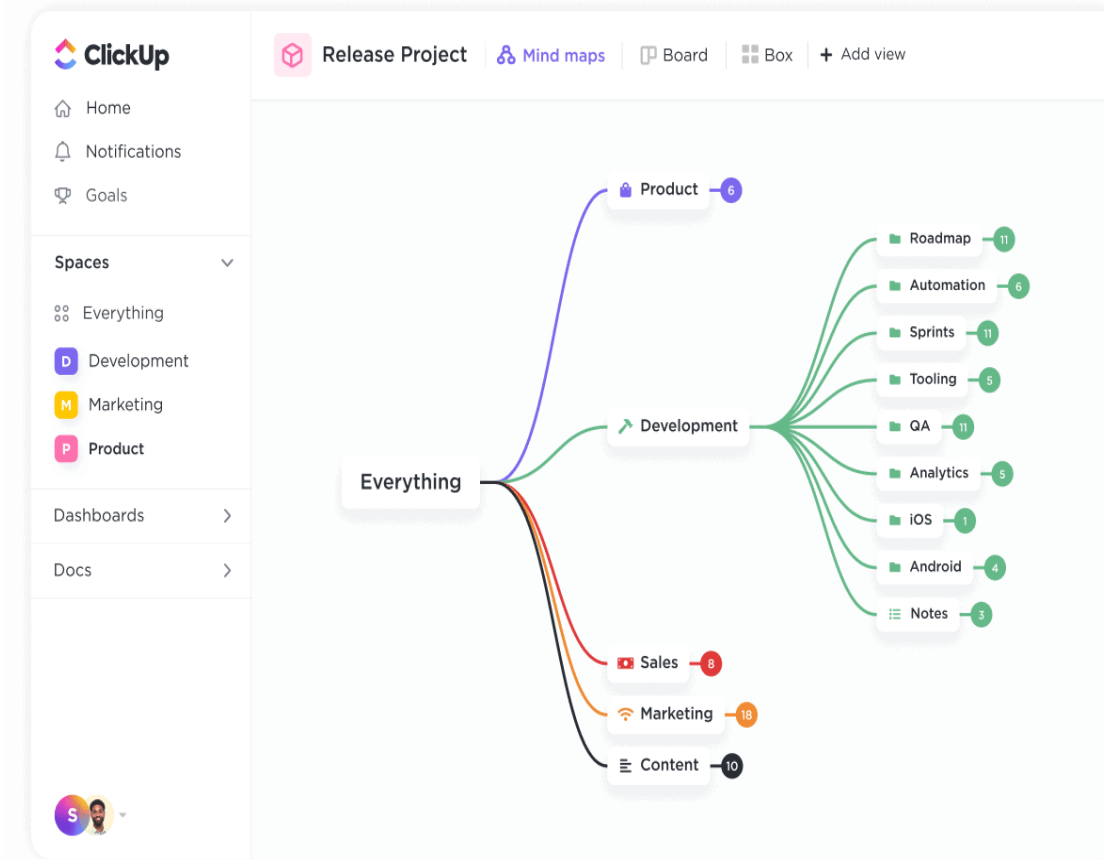


FOUR most powerful Ideation techniques:

Mind Mapping:

The term “mind mapping” refers to a visual depiction of concepts. It is a method of connecting ideas by constructing relationship webs. Here the problem occupies a central position in the minds of the players.

The issue stems from various concepts or themes that link to another solution or idea



FOUR most powerful Ideation techniques:

Sketch Storm:

In the format of diagrams and sketches, Sketch Storm conveys workable solutions. Words alone are insufficient. It allows participants to draw ideas in various shapes appropriate for idea generation.

An idea's sketch can be straightforward and unrefined but comprehensive enough to indicate the meaning



FOUR most powerful Ideation techniques:

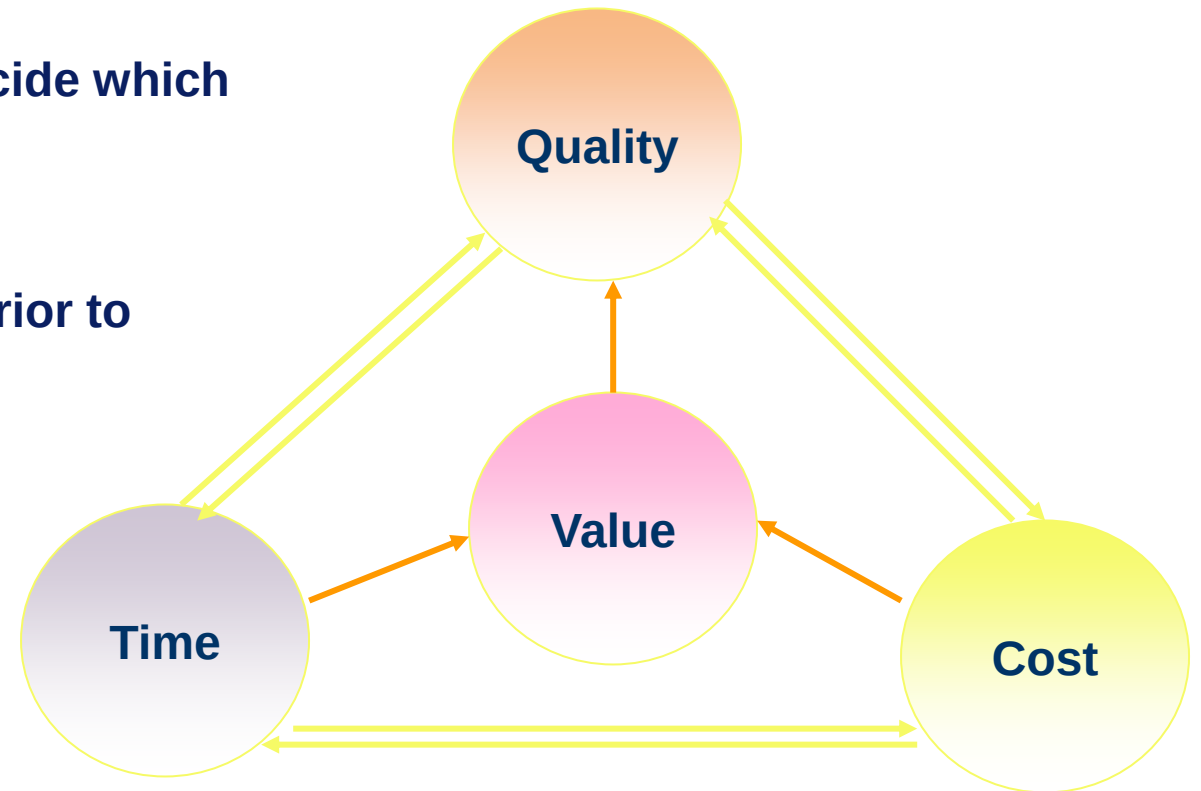
Story Board:

The last ideation technique is storyboarding, where participants are encouraged to develop a story based on the issues using storyboarding. It stresses visual storytelling with key characters as design, problem dynamics, and a path to a solution.



Stage 3: IDEA SCREENING

- Once you've generated plenty of ideas, you'll need to evaluate them for **viability**, score them, and decide which ones you'll want to further investigate.
- Objective is to eliminate **unsound concepts** prior to devoting resources to them
- First, you'll want to establish criteria to judge each idea against.



Stage 3: guidelines for IDEA SCREENING

- Alignment with your Product Innovation Strategy
- Degree of compatibility with the company's values & principles (ex: moral, health, environmental)
- Market attractiveness / opportunity
- Project feasibility
- Degree of product advantage over other options
- Ability to leverage existing company resources



Stage 3: guidelines for IDEA SCREENING

- ✓ Does the product represent something **completely new** and different from anything out there in the marketplace? Would it likely appeal to a specialty/niche segment of people?
- ✓ Does the idea have a **unique design** to it, that'll make it appeal to more people than a comparable product does now?
- ✓ Will this idea offer a noticeably **superior quality** in comparison to competitive offerings? If so, can it remain in the same price range as those competitive products?
- ✓ If it's a popular item (in terms of category volume), would you be able to noticeably **lower its price** without affecting its quality?
- ✓ Is the idea able to **offer enough new features** to differentiate it from the competition? If so, to what degree would these additional features be of value or seen as advantageous?

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Stage 3: guidelines for IDEA SCREENING

- ✓ For popular products, will your idea enable you to **produce and distribute it faster** than the competition?
- ✓ How much **longevity** does your product idea have? Is it part of an established category of products, a trend, or a fad? Having a grip on this is crucial. I'm not saying some product categories are no-growth, sometimes it depends on the sales channel. But obviously you don't want to base a lot of business on a me-too product whose lifespan may only last a few years.
- ✓ How **new is this idea compared to existing products** in your portfolio or pipeline? Buyers are likely to be approached next season by similar products with the additional features and attributes you'll be pitching.

Idea Review Session

- ❑ Personnel from Sales, Marketing, R&D, and PDD (Product Design and Development) are the key attendees to these sessions. Communicate to them the decision-making criteria and the primary aspects of the Product Innovation Strategy.
- ❑ Create standardized idea forms for presenters to fill-out and distribute. Fields include: product definition, target market, explanation of user benefits, and criteria against which the ideas are judged, and a sketch (if applicable).

Idea Review Session

- ☐ With a large number of ideas and participants, create voting schemes. This could involve having idea cards/boards set up around the presentation room, and giving every participant a number of votes. Voting by raised hands can work, but perhaps it might be best to give people post-its to place on the ideas they like, then tally the votes. Techniques may vary - the idea is that participation is important.
- ☐ Once you've selected your winning ideas, place them into an idea portfolio.
- ☐ Any ideas leftover that had some terrific potential, but for some reason couldn't make the cut, should be stored in an idea bank for future review.

Screening Criteria

	New Idea Screening Criteria Points				
Weightage(100)	C1	C2	C3	C4	C5
Idea 1					
Idea 2					
Idea 3					
Idea n					

Stage 4 : Concept Development & Testing

Concept is A printed or filmed representation of a product or service. It is a promise a product makes to resolve an unmet consumer need, the reason why it will satisfy the need, and a description or portrayal of any key element that will affect the perception of the product.

Effective Product Concept:

A statement of the problem that the product is meant to solve.

A definition of the type of solution that the product requires.

Supporting attributes (physical and communications) that adds credibility to product's ability to solve the problem.



Stage 4 : Concept Development & Testing

Guidelines for Effective Product Concept:

- Need Driven NOT Technology Driven
- Use Consumer Language
- Keep Statement Clear and Single-Minded
- Be Realistic
- Avoid Superlatives



From IDEA to CONCEPT

GM's Electric Car Case

Idea:

- An electric car which can go as fast as 80 miles/hr & as far as 90 miles before needing to be re-charged. GM estimates electric car's operating costs to be about half those of a regular car

The Concept:

- An efficient, fun-to-drive, electric powered subcompact car that seats 4; great for shopping trips & visits to friends, costs half as much to operate as similar gasoline-driven cars. Goes up to 80 miles per hour and does not need to be recharged for 90 miles. Priced, fully equipped, at \$14,000.

From IDEA to CONCEPT

CONCEPT for a NEW CEREAL

Introducing new Nuggets, the high nutrition cereal that combines three grains - oat, barley and wheat - with the vitamins , minerals and fiber you need to start your day. Simply top with cream or milk, and enjoy. Nuggets can also be served warm, simply by heating in your microwave. New Nuggets, the healthy cereal that gives you the total and balanced nutrition you need.

BETTER CONCEPT for a NEW CEREAL

Introducing new Nuggets, the delicious and nutty-tasting high nutrition cereal that combines the natural sweetness of crunchy oat, barley and wheat - with all the vitamins , minerals and fiber you need to start your day. Simply top with cream or milk, and enjoy. Nuggets can also be served steaming hot, simply by heating in your microwave. With Nuggets, you can have both high nutrition and great taste. New Nuggets. the healthy cereal that really tastes great.

Concept Development and Testing

- Written
- Simulations
- Virtual Reality
- Computer aided Design & Manufacturing (CAD/CAM)
- Rapid Prototyping / Mock-ups
- 3-D Animations / Graphics
- Conjoint/Trade Off Analysis
- Perceptual Maps



Conjoint/Trade Off Analysis

- Put the determinant attributes together in combinations or sets.
- Respondents rank these sets in order of preference.
- Conjoint analysis finds the optimal levels of each attribute.
- Measures relative values of attributes jointly rather than separately
- Mirrors trade-offs that individuals make in the market place
- Attributes can be categorized in 3 elements:
 - ☐ Features
 - ☐ Functions
 - ☐ Benefits

Example: A shampoo may contain pro-v proteins (feature) that coat the hair during shampooing (function), which leads to more shine on the hair (benefit).

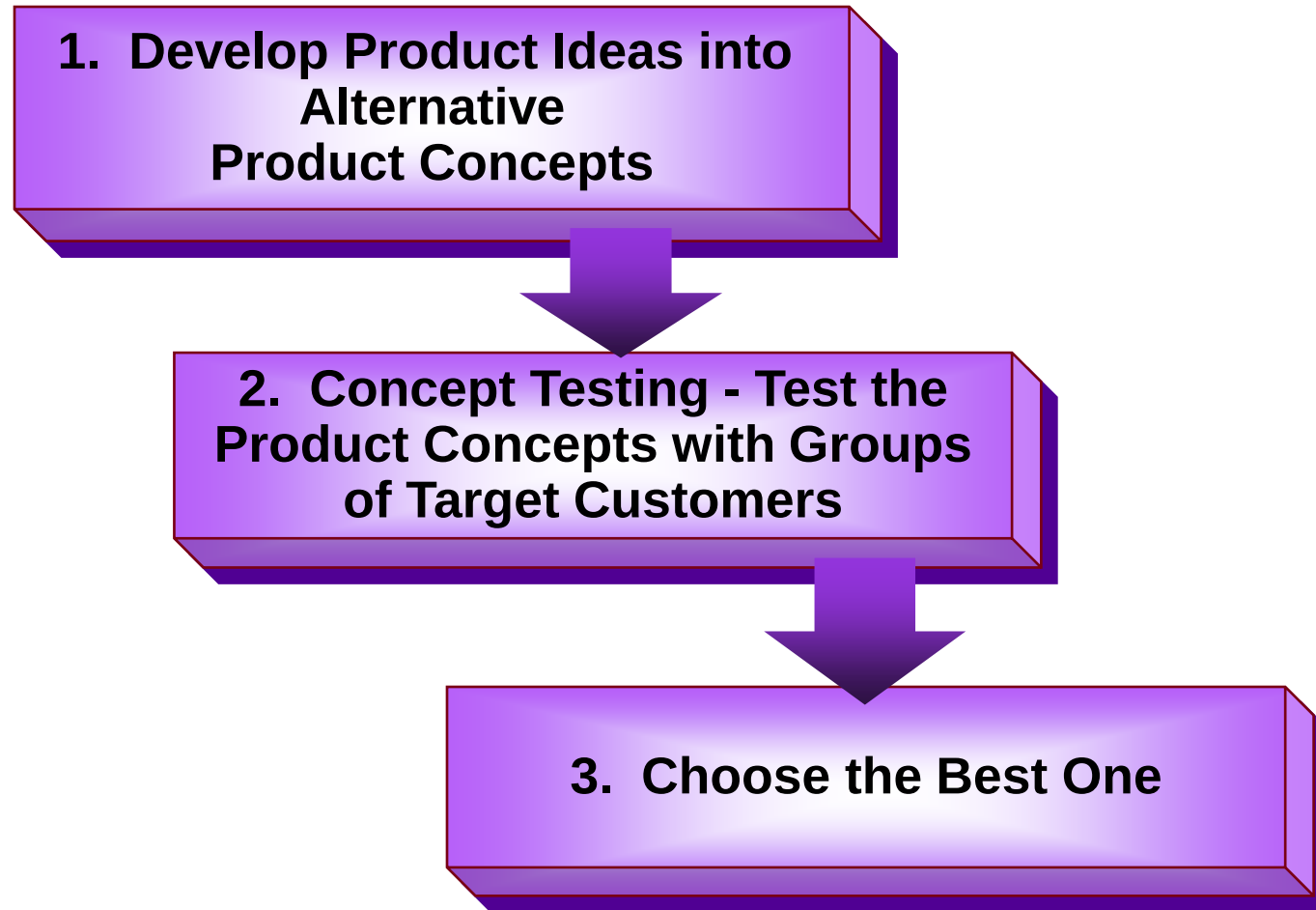
Conjoint Analysis Input: Salsa Example

Thickness	Spiciness	Color	Actual Ranking*	Ranking as Estimated by Model
Regular	Mild	Red	4	4
Regular	Mild	Green	3	3
Regular	Medium-Hot	Red	10	10
Regular	Medium-Hot	Green	6	8
Regular	Extra-Hot	Red	15	16
Regular	Extra-Hot	Green	16	15
Thick	Mild	Red	2	2
Thick	Mild	Green	1	1
Thick	Medium-Hot	Red	8	6
Thick	Medium-Hot	Green	5	5
Thick	Extra-Hot	Red	13	13
Thick	Extra-Hot	Green	11	11
Extra-Thick	Mild	Red	7	7
Extra-Thick	Mild	Green	9	9
Extra-Thick	Medium-Hot	Red	14	14
Extra-Thick	Medium-Hot	Green	12	12
Extra-Thick	Extra-Hot	Red	17	18
Extra-Thick	Extra-Hot	Green	18	17

* 1 = most preferred, 18 = least preferred.

New Product Development Process

Step 3. Concept Development & Testing



Concept development

- Concept 1
- Concept 2
- Concept 3
 - Who
 - Why
 - when
- Category concept
- Product concept
- Brand concept

Concept Testing

- Are the benefits clear?
- Does it solve a problem/need?
- Does other products solve this need and satisfy the customers?
- Is the price reasonable?
- Would u definitely/definitely not/ probably /probably not buy this product?
- Who would use this product and when and how often the product be used?



- **What is a Product Development Process?**
- **The 6 Steps of The New Product Development Process [NPD]**
- **Ideation and Ideation techniques**
- **Idea screening**
- **Concept development & testing**

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Lecture 8

Thank You



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