Concept/Project Evaluation:
ATAR; NEWPROD

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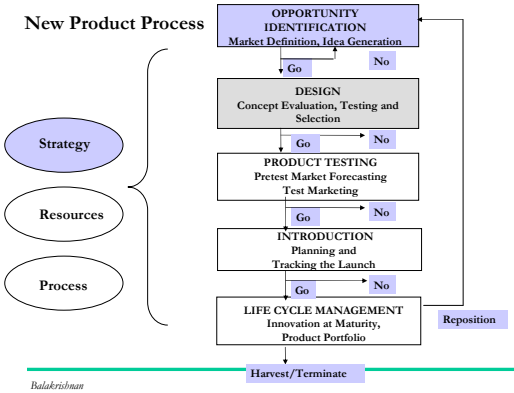
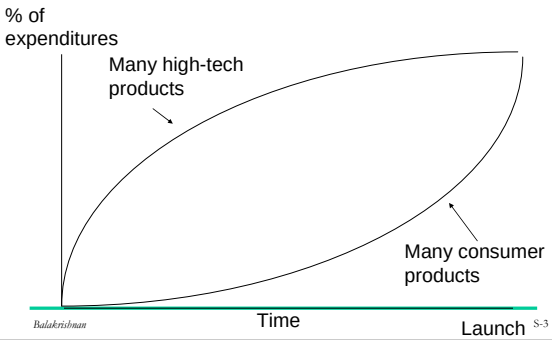
New Product Process



Cumulative Expenditures Curve



Planning the Evaluation System: Four Concepts

- Rolling Evaluation (tentative nature of NPD process)
- Potholes
- People
- Surrogates

Rolling Evaluation (or, "Everything is Tentative")

- Project is assessed continuously (rather than a single Go/No Go decision)
- Financial analysis also needs to be built up continuously
- Not enough data early on for complex financial analyses
- Run risk of killing off too many good ideas early
- Marketing begins early in the process
- Key: NPD participants avoid "good/bad" mindsets, avoid premature closure

"Killer Phrases:"
Roadblocks to Creativity

- It simply won't work.
- Are you sure of that?
- You can't be serious.
- It's against our policy.
- Let's shelve it for the time being.
- That won't work in our market.
- *Let's think about that some more.*
- I agree, but…
- We've done it the other way for some time.
- Where are you going to get the money for that?
- We just can't do that.
- Who thought of that?
- It's probably too big for us.
- I believe we tried that once before.

Historic Roadblocks to Creativity

- "I think there is a world market for maybe five computers." ***Thomas Watson, Chair, IBM, 1943.***
- "So we went to Atari and said, …'We'll give it to you. We just want to do it. Pay our salary, we'll come work for you.' And they said no. So then we went to HP, and they said 'We don't need you, you haven't got through college yet.'" ***Steve Jobs, co-founder, Apple Computers.***
- "Who the hell wants to hear actors talk?" ***H.M. Warner, Warner Bros., 1927.***
- "We don't like their sound, and guitar music is on the way out." ***Dick Rowe, Decca Records executive, rejecting the Beatles' demo tape, 1962.***
- "This 'telephone' has too many shortcomings to be seriously considered as a means of communication [and] is inherently of no value to us." ***Western Union, 1876.***
- "Everything that can be invented has been invented." ***C. H. Duell, Commissioner, U.S. Office of Patents, 1899.***

Required Inputs to the Creation Process

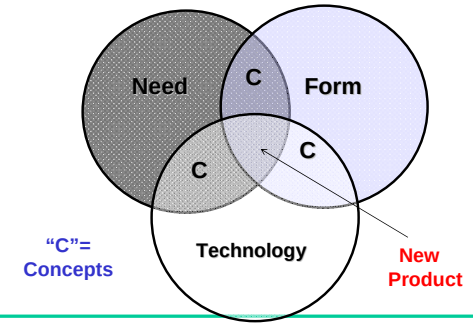
- *Form* (the physical thing created, or, for a service, the set of steps by which the service will be created)
- *Technology* (the source by which the form is to be attained)
- *Benefit/Need* (benefit to the customer for which the customer sees a need or desire)

Technology **permits us to develop a** ***form*** **that provides the** ***benefit.***

What is a Product Concept?

- A product concept is a verbal or prototype statement of what is going to be changed *and* how the customer stands to gain or lose.
- Rule: You need *at least two* of the three inputs to have a feasible new product concept, and *all three* to have a new product.

Concepts and the New Product



The Designer Decaf Example

- *Benefit:* "Consumers want decaffeinated espresso that tastes identical to regular."
- *Form:* "We should make a darker, thicker, Turkish-coffee-like espresso."
- *Technology:* "There's a new chemical extraction process that isolates and separates chemicals from foods; maybe we can use that for decaffeinating espresso coffee."

Why would each of these taken individually not be a product concept?

What a Concept Is and Is Not

"Learning needs of computer users can be met by using online systems to let them see training videos on the leading software packages."

good concept; need and technology clear

"A new way to solve the in-home training/educational needs of PC users."

need only; actually more like a wish

"Let's develop a new line of instructional videos."

technology only, lacking market need and form

Lead Users

- An important source of new product ideas.
- Customers associated with a significant current trend.
- They have the best understanding of the problems faced, and can gain from solutions to these problems.
- In many cases, have already begun to solve their own problems, or can work with product developers to anticipate the next problem in the future.

Potholes

Know what the really MAJOR/damaging problems are for your firm and focus on them when evaluating concepts.

Example: Campbell Soup focuses on:

- 1. Manufacturing Cost
- 2. Taste

Example: SOFTWARE Firm's pothole:

- Consumers' unwillingness to take time to learn to use the complex new product.

People

- Proposal may be hard to stop once there is buy-in on the concept.
  - "Escalation of Commitment"
- Need tough demanding hurdles, especially late in NPD process.
- Personal risk associated with NPD.
- Need system that protects developers and offers reassurance (if warranted).

Surrogates

- Surrogate questions give clues to the real answer.

Real Question	***Surrogate Question***
Will they prefer it?	Did they keep the prototype product we gave them after the concept test?
Will cost be competitive?	Does it match our manufacturing skills?
Will competition leap in?	What did they do last time?
Will it sell?	Did it do well in field testing?

The A-T-A-R Model: Definitions

- ***Buying Unit:*** Purchase point (person or department/buying center).
- ***Aware:*** Has heard about the new product with some characteristic that differentiates it.
- ***Available:*** If the buyer wants to try the product, the effort to find it will be successful (expressed as a percentage).
- ***Trial:*** Usually means a purchase or consumption of the product.
- ***Repeat:*** The product is bought at least once more, or (for durables) recommended to others.

An A-T-A-R Model of Innovation Diffusion

Profits = Units Sold x Profit Per Unit

Units Sold = Number of buying units
x % aware of product
x % who would try product if they can get it
x % to whom product is available
x % of triers who become repeat purchasers
x Number of units repeaters buy in a year

Profit Per Unit = Revenue per unit - cost per unit

A-T-A-R Model Application

3 million	Number of owners of sports cars
x 40%	Percent awareness after one year
x 20%	Percent of "aware" owners who will try product
x 40%	Percent availability at auto parts stores
x 50%	Percent of triers who will buy for second car
x 1.5	Number of devices the typical trier buys per year
x $12.50	Price per unit minus trade margins and discounts ($25) minus unit cost at the intended volume ($12.50)
=$1,800,000	Profits

Points to Note About A-T-A-R Model

1. Each factor is subject to estimation.
   Estimates improve with each step in the development phase.
2. Inadequate profit forecast can be improved by changing factors.
   If $1,800,000 profit forecast is inadequate, look at each factor and see which can be improved, and at what cost.

Concept/Project Evaluation Purposes of the Full Screen

- To decide whether technical resources should be devoted to the project.
  - Feasibility of technical accomplishment -- can we do it?
  - Feasibility of commercial accomplishment -- do we want to do it?
- To help manage the process.
  - Recycle and rework concepts
  - Rank order good concepts
  - Track appraisals of failed concepts
- To encourage cross-functional communication.

Screening Alternatives

- Judgment/Managerial Opinion
- Concept Test followed by Sales Forecast
  (if only issue is whether consumers will like it)
- Scoring Models

Logic of Scoring Model

We would ideally like to project:
Net Present Value of Earnings Stream: Level One
(which we usually don't know at this point)

Surrogates for above: *Level Two factors*
Chances of technical accomplishment
Chances of commercial accomplishment

Surrogates for commercial accomplishment: *Level Three factors*
Sales forecasts, margins, marketing and administrative expenses

Surrogates for Sales: *Level Four factors*
These make up the scoring model.

A Scoring Model for Full Screen

Note: this model only shows a few sample screening factors.

Factor	*Score (1-5)*	*Weight*	*Weighted Score*
Technical task difficulty			
Research skills required			
Rate of technological change			
Design superiority assurance			
Manufacturing equipment...			
Market volatility			
Probable market share			
Sales force requirements			
Competition to be faced			
Degree of unmet need...			

The Scorers

- Scoring Team:
  - Major Functions (marketing, technical, operations, finance)
  - New Products Managers
  - Staff Specialists (IT, distribution, procurement, PR, HR)
- Problems with Scorers:
  - May be always optimistic/pessimistic
  - May be "moody" (alternately optimistic and pessimistic)
  - May always score neutral
  - May be less reliable or accurate
  - May be easily swayed by the group
  - May be erratic

Sample Profile Sheet

Factor	*1*	*2*	*3*	*4*	*5*
Market size					
Market relatedness					
Market growth					
Market regularity					
Distribution capability					
Competitive status					
Marketing capability					
Manufacturing capability					
Financial capability					
Engineering capability					
Technical uncertainty					
Strategic fit					

Empirical Model

(This example is based on Project NewProd database.)

Eight Significant Factors

- Product superiority
- Overall firm/resource compatibility
- Market need, growth, and size
- Economic advantage of product to end user
- Technological resource compatibility
- Product scope (mass vs. narrow specialty)
- Market competitiveness (-)
- Newness to the firm (-)

Items Constituting the First Factor

Factor One: Product Superiority

1. Product is superior.
2. Product has unique feature.
3. Product is higher quality.
4. Product does unique task.
5. Product cuts user's costs.
6. Product is first of kind.

(There are about six items constituting each of the other factors as well.)

Sample Items on Other Factors

Factor Two: Overall Company Project Fit

Good fit in terms of managerial, marketing, engineering skills; financial, R&D, production resources

Factor Three: Market Need, Growth and Size

High need level by customers for this product class

Large, fast-growing market

Factor Four: Economic Advantage to User

Product reduces customer's costs

Product is priced lower than competitors

Sample Items on Other Factors

Factor Five: Newness to the Firm

New product class, customer need served, technology, production process, salesforce or distribution

Factor Six: Technological Capability

Good fit in terms of R&D and engineering resources

Factor Seven: Market Competitiveness

Intense price competition, many competitors, many new product introductions, changing user needs

Factor Eight: Product Scope

Market-derived new product idea, not a custom product (has mass appeal), mass market exists for product

Sample Application of NewProd Screening Model

Factor	*Mean Evaluation*	*Impact*
Project Superiority	1.19	POSITIVE
Economic Advantage	-0.49	negative
Company-Project Fit	-0.16	marginal (-)
Tech. Compatibility	-0.19	marginal (-)
Newness to Firm	-0.24	marginal (+)
Market Need/Growth/Size	0.88	POSITIVE
Market Competitiveness	-1.82	positive
Product Scope	0.90	marginal (+)

Pros and Cons of Project

- Pros
  - 1. Product Superiority/Quality
  - 6. Market Need/Growth/Size
  - 7. Market Competitiveness
- Cons
  - 2. Economic Advantage to User
- Marginals
  - 8. Product Scope
  - 5. Newness to Firm
  - 4. Technology Compatibility
  - 3. Overall Company-Project Fit

Portfolio Management for New Products

- Risk vs. Reward
  - Pearls
  - Oysters (long-shots)
  - Bread & Butter
  - White Elephants