



37000: **Marketing** **Strategy**

New Products and Product Line Decisions

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Outline

- New Products
 - How do you come up with them?
 - How do you forecast demand for them?
- Product Line Decisions
 - When do you want to extend your product line and why?

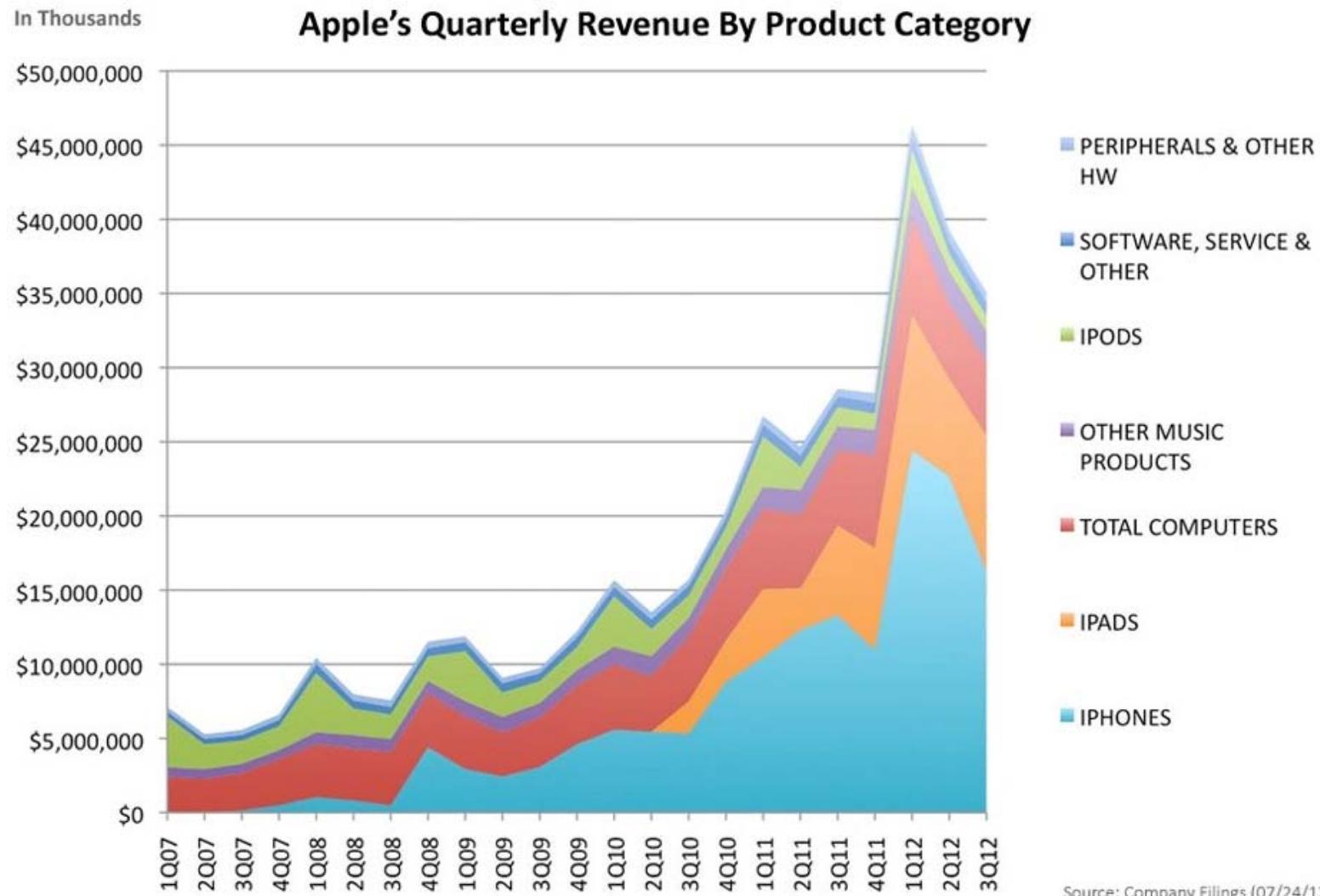


37000: **Marketing** **Strategy**

New Products and the Product Lifecycle

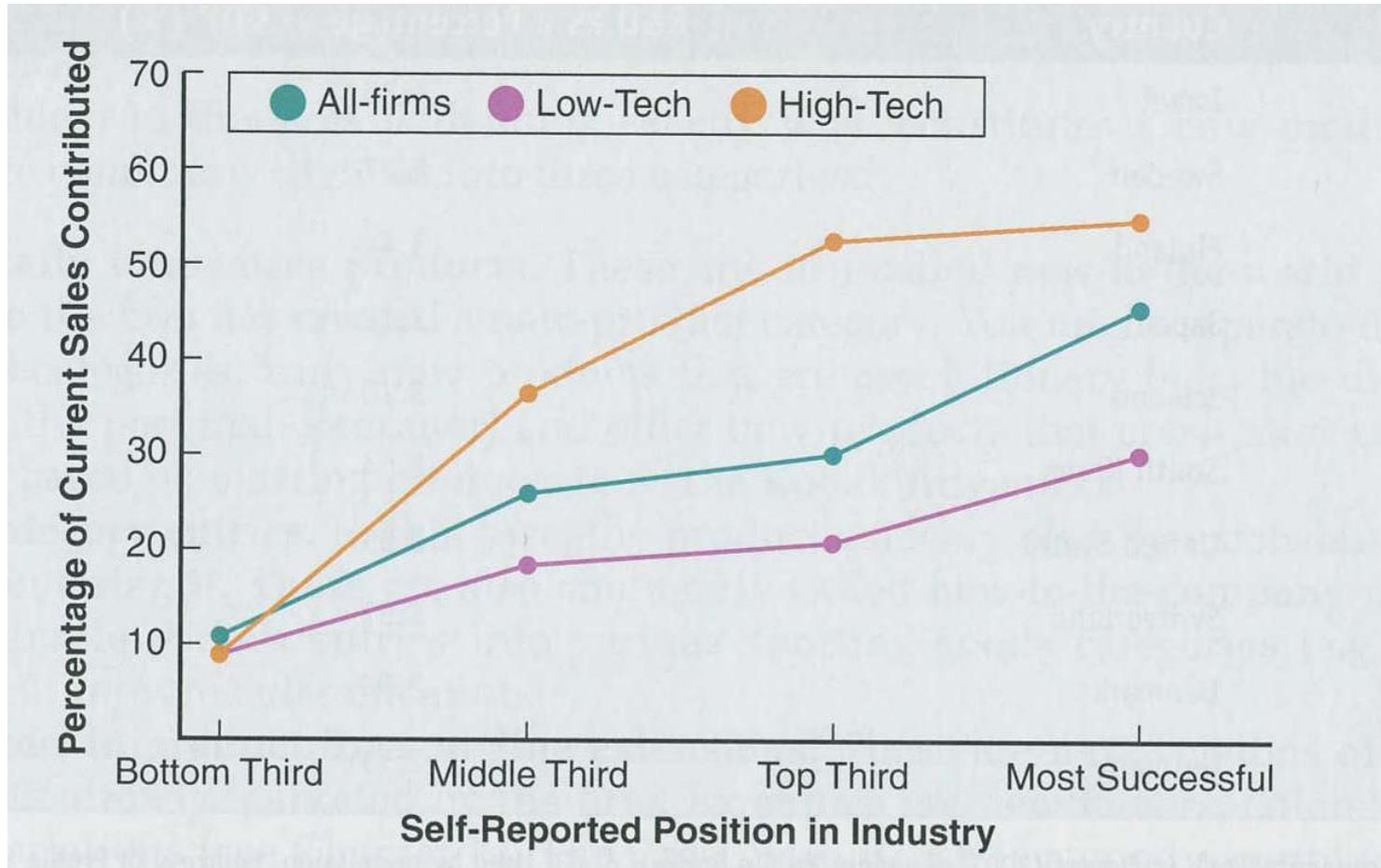
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The Value of New Products



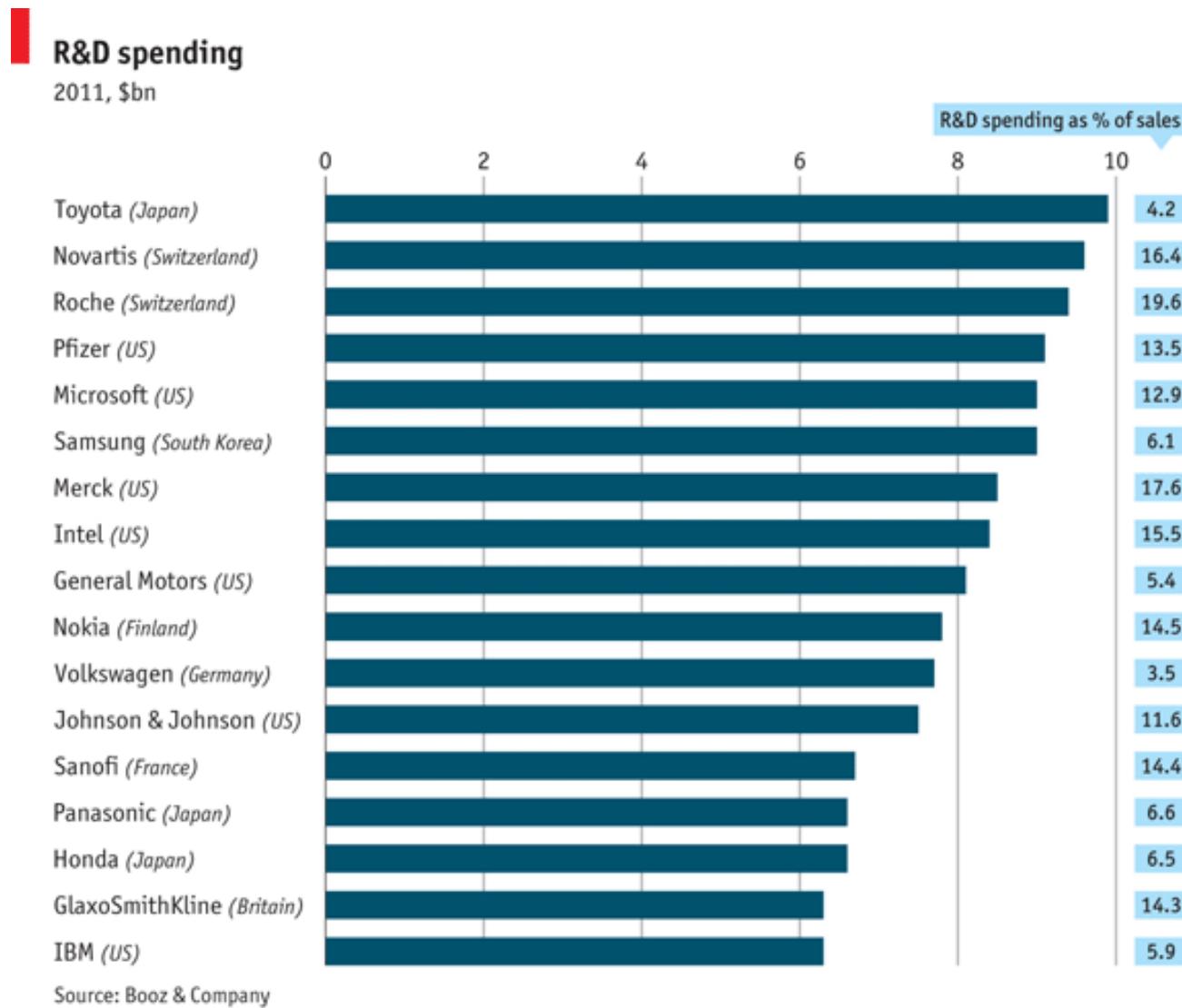
Source: Company Filings (07/24/12)

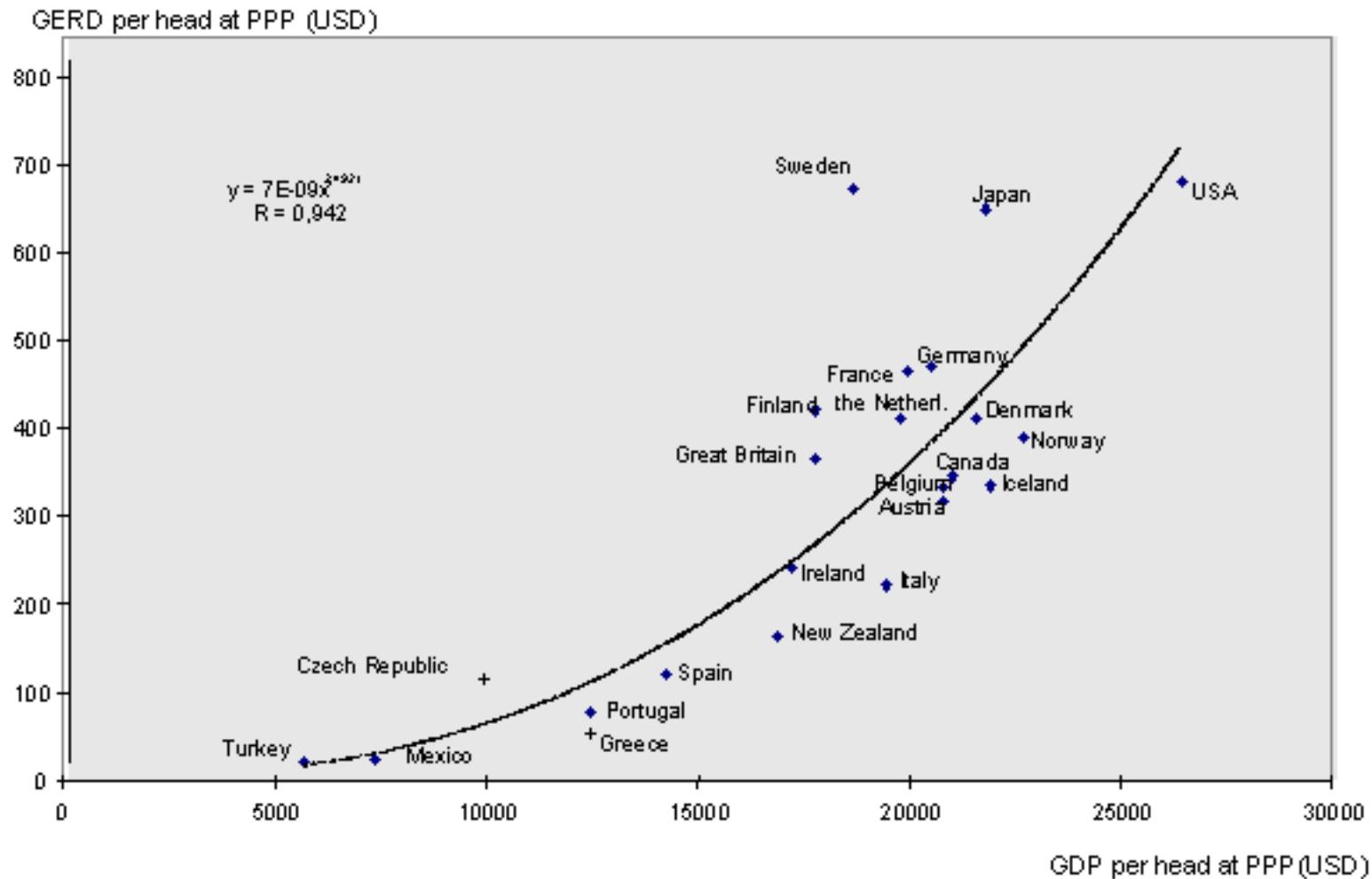
The Value of New Products



Sales Share of New-ish Products (<5 years)

The Value of New Products





It is taken as axiomatic that innovative activity has been the single, most important component of long-term economic growth (OECD)

Introduction – New Products

- How do you come up with new products?
 - At its heart, innovation
- How do you forecast demand for them?
 - Building capacity, supply chain, distribution
- Lead to: Product Lifecycle

New Products

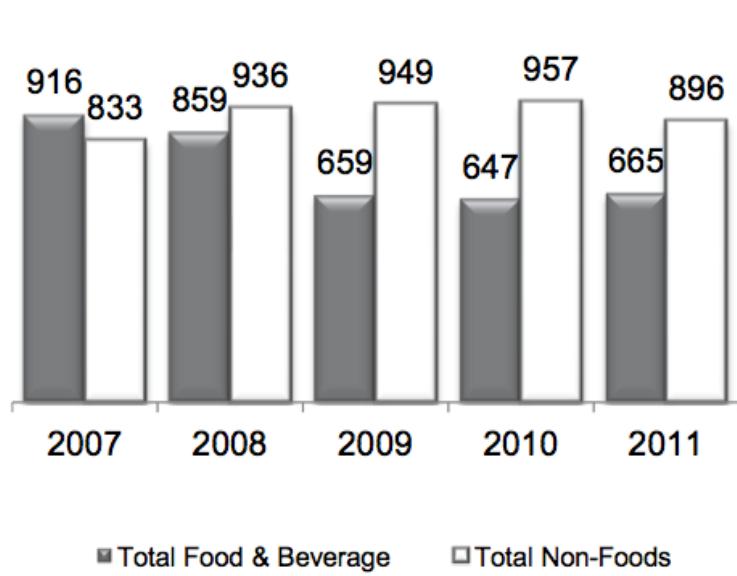
- Types of New Products

New Products

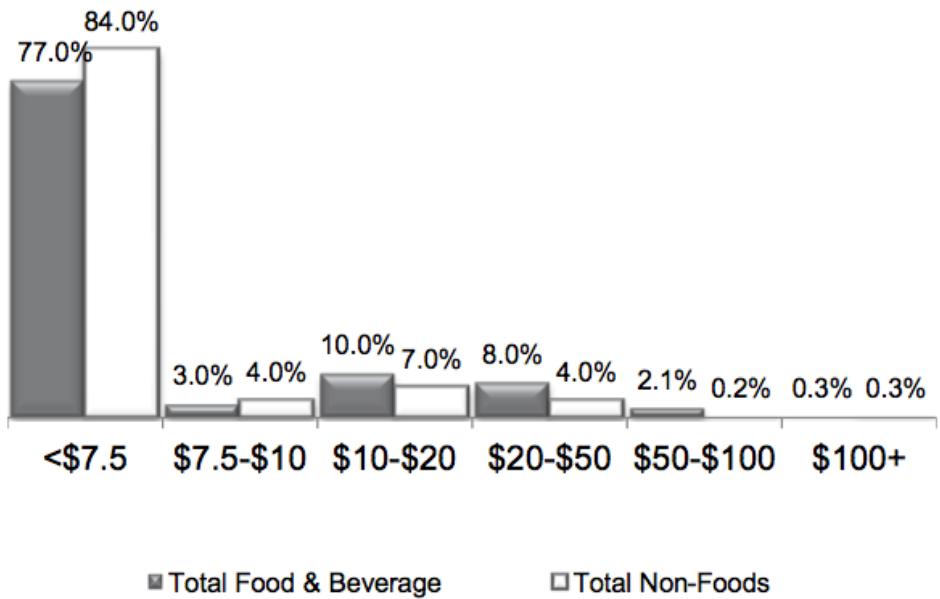
- Types of New Products
- Extensions:
 - Brand extension into new category or slight modifications of existing products
 - “Relatively” safe, easier to forecast demand, lower reward
- More radical variations on products:
 - New but relatable category or drastic innovation in existing category
 - Riskier but can still forecast
 - Potentially huge payoff
- Totally out there.
 - The world of venture capital

Failure of New Brands

Number of CPG New Product Introductions*
Brand Level



2011 Proportion of CPG New Products
by Year-One Sales* (\$ Millions)



Source: SymphonyIRI New Product Profiler™
*Across Food, Drug & Mass Channels (excluding Walmart)

Source: SymphonyIRI New Product Profiler™
*Across Food, Drug & Mass Channels (excluding Walmart)

What Matters Is....

- How do you come up with the idea in the first place?
 - Consumer focus groups, surveys
 - OR: Blue sky, pie in the sky research
- How do you measure demand / forecast the lifecycle?
 - Conjoint, taste tests, Nielsen BASES
 - OR: Comparison to other “similar” products
 - OR: Educated guess
- How much familiarity do your consumers have with the category / product?

2012 New Product Pacesetters: Top 10 Food & Beverage Brands
 Year-One Dollar Sales (\$ Mil)
 Multi-Outlet

1. **Dannon Oikos**
 Yogurt
 \$283.8
 
2. **Starbucks K-Cups**
 Coffee
 \$198.9
 
3. **Bud Light Platinum**
 Beer/Ale/Alcoholic Cider
 \$162.2
 
4. **TruMoo**
 Milk
 \$158.3
 
5. **Breyers Blasts!**
 Ice Cream/Sherbet
 \$147.3
 
6. **MiO**
 Drink Mixes, Energy
 Drinks, Sports Drinks
 \$127.6
 
7. **Sparkling ICE**
 Bottled Water
 \$122.7
 
8. **Nature Valley Protein Bars**
 Snack/Granola Bars
 \$95.7
 
9. **Orville Redenbacher's Pop Up Bowl**
 Popcorn/Popcorn Oil
 \$92.1
 
10. **Daily's Frozen Pouches**
 Premixed Cocktails/Coolers
 \$89.2
 

Extension vs. New Products:

Which is
which?

Another Dimension

- When you think about new product ideas focus on:
 - How much can I trust my customers / know about their preferences?
 - Radical vs. non-radical
- When you think about adoption decisions / forecasting:
 - Is the product durable or non-durable?

A Matrix

	Non-Durable	Durable
Extensions		
Variations		
Radical		

A Matrix

	Non-Durable	Durable
Extensions	New flavor of existing product	Google tablet
Variations	New category in CPG	The introduction of the mini-van
Radical	Internet sites (Google)	Cell phones

Outline

- How do you come up with new products?
 - At its heart, innovation
 - Top down
 - Consumer / research focused
 - Bottom up
- How do you forecast demand for them?

New Product Creation



New Product Creation: Taco Bell

- 1) Mandate / Resources
- 2) Brainstorming session
- 3) Concept Development
 - Concept testing with consumers
- 4) Create product
 - Taste tests
- 5) Iteration
- 6) Production / Engineering challenges
- 7) Test markets
- 8) Full product line roll out
- 9) Future extensions

Sample Concept Test

Automated e-mail Responder (AeR)

The electronic age brings new headaches for the busy executives—junk e-mails. Now a group of acclaimed computer scientists have used the latest technology to develop a software which saves time of busy executives by automatically responding to e-mails.

What is AeR and How does it work?

AeR is an expert system based on pattern recognition technology. After you install this software, it works in three phases: learning, testing, and actual operation. In the learning phase, you respond to e-mails as usual and AeR “learns” from your way of responding. In the testing phase, AeR responds to e-mails and asks you to approve or disapprove the way it responded. AeR then adjusts its response style. Once you are satisfied, AeR is ready for actual operation where it automatically responds to most of your e-mails. If unsure about an e-mail, the software leaves it for you to respond.

How attractive do you find the idea behind this software?

- Very Attractive
- Somewhat attractive
- Slightly attractive
- Not attractive at all

If this software were available for a reasonable price, how likely are you to buy it?

- I will definitely buy
- I will probably buy
- I might or might not buy
- I will probably not buy
- I will definitely not buy

Source: Lehmann, Gupta and Steckel (1997), *Marketing Research*

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New Product Creation



Unholy Abomination Called 'Doritos Loaded' Tested At D.C.-Area 7-Elevens

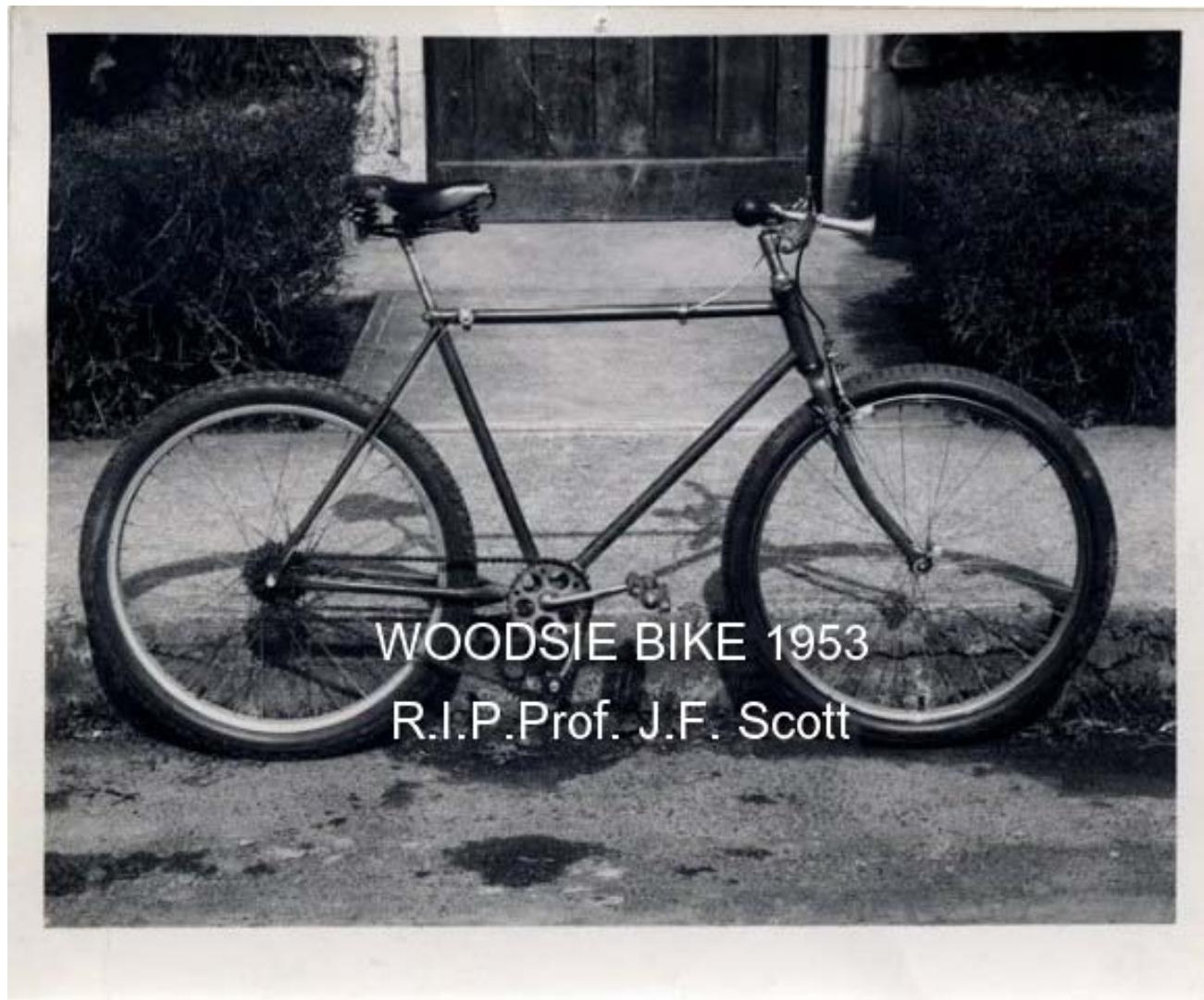
New Product Creation: Tide Pods

- 1) Start with a problem:
 - “Apartment dwellers hated lugging a detergent bottle downstairs”
- 2) Make the prototype (outsource parts)
- 3) Test in “lab”
 - Product itself and purchase environment
 - Different version of the product?
- 4) Distribution / Promotion

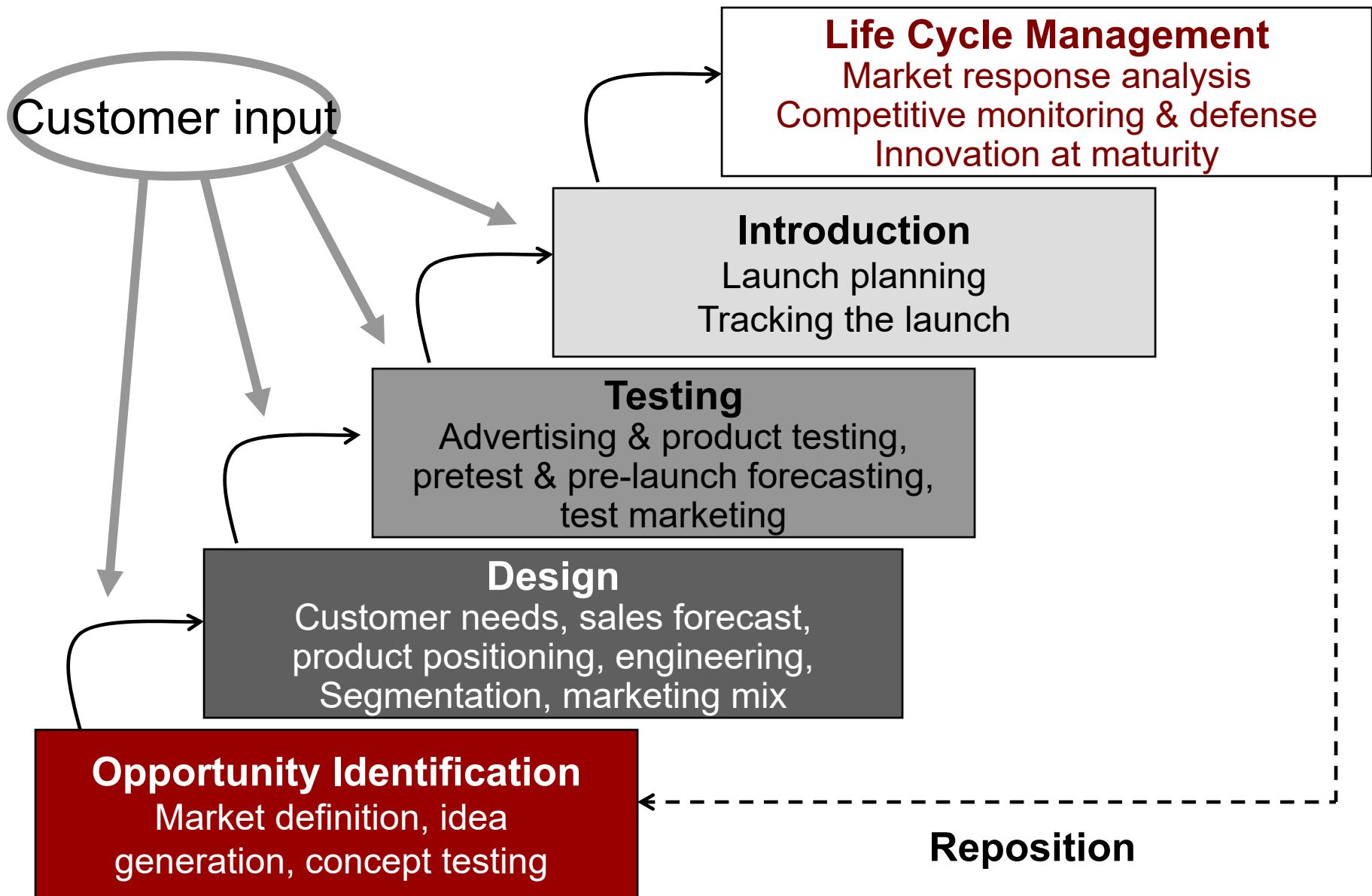
More Radical: Lead User Generation

- Understand what your consumers want at a deeper level
- Observe how cutting edge users are changing and developing their own products
 - What are their unmet needs?
 - What are the characteristics of the products they make?
- Challenge:
 - Need to find these users
 - Need them not to have the wherewithal to do it themselves!

More Radical: Lead User Generation



The New Product Development Process



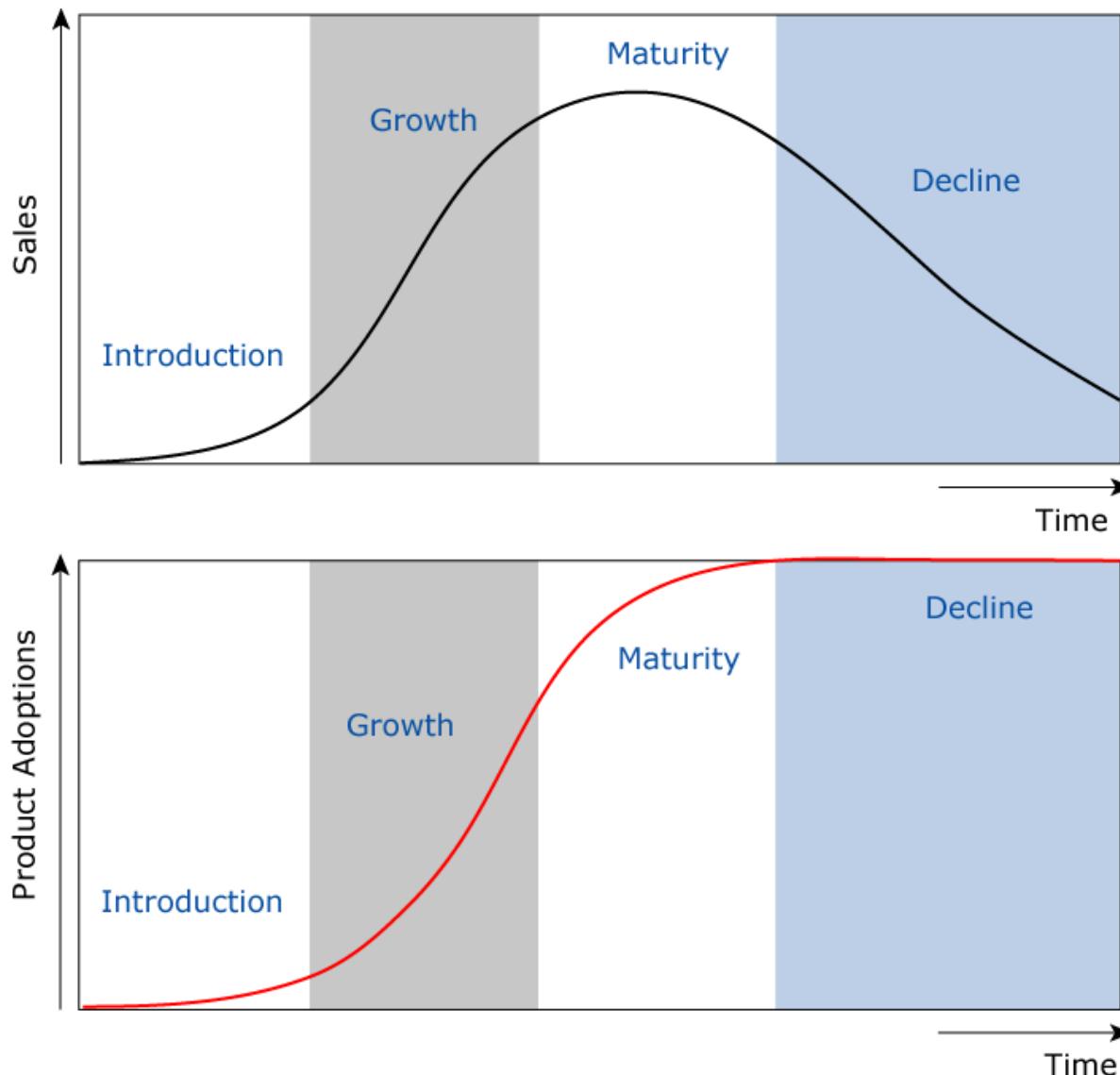
Summary:

- New product development is challenging:
 - Truly radical innovations are genius and come from a deep understanding of consumer preferences (or luck)
- For less radical products:
 - Iteration between product design and customer input
 - Always think in terms of consumer preferences (e.g. conjoint) and the competition space

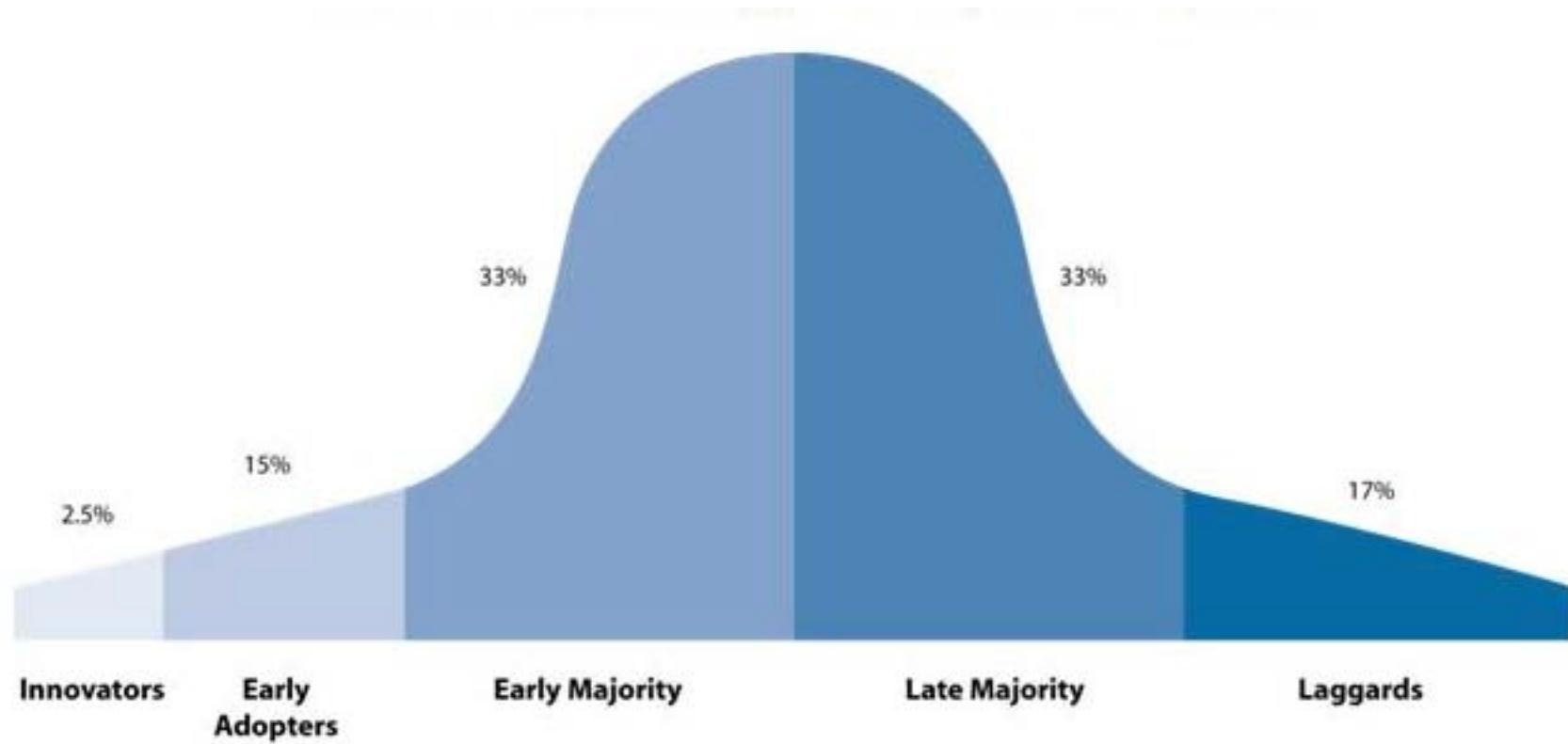
Introduction

- How do you come up with new products?
 - At its heart, innovation
- How do you forecast demand for them?
 - Building capacity, supply chain, distribution

The Product Lifecycle



The Reason: Durables



Different Types of Consumers

The Reason: Durables

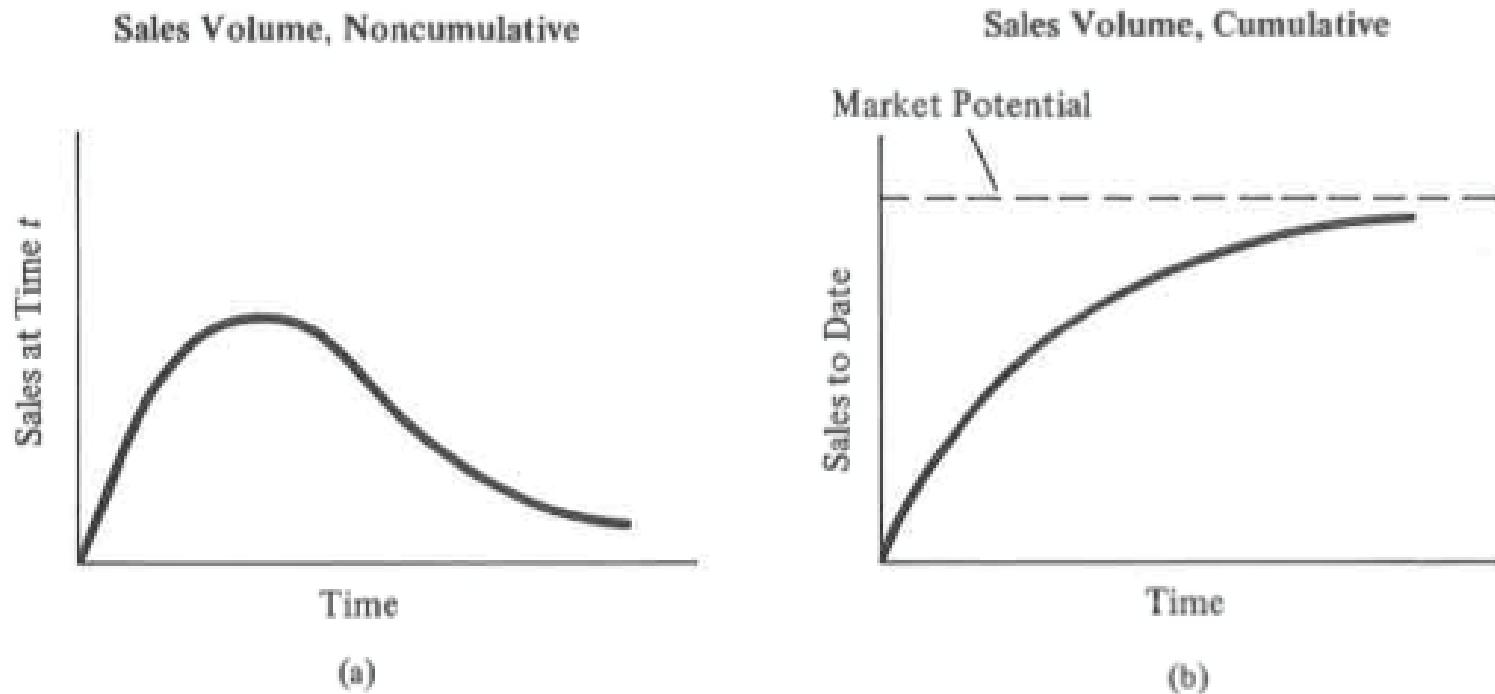


EXHIBIT 10.1 Sales life cycle for a durable new product in a fixed-size market.

The Reason: Non-durables

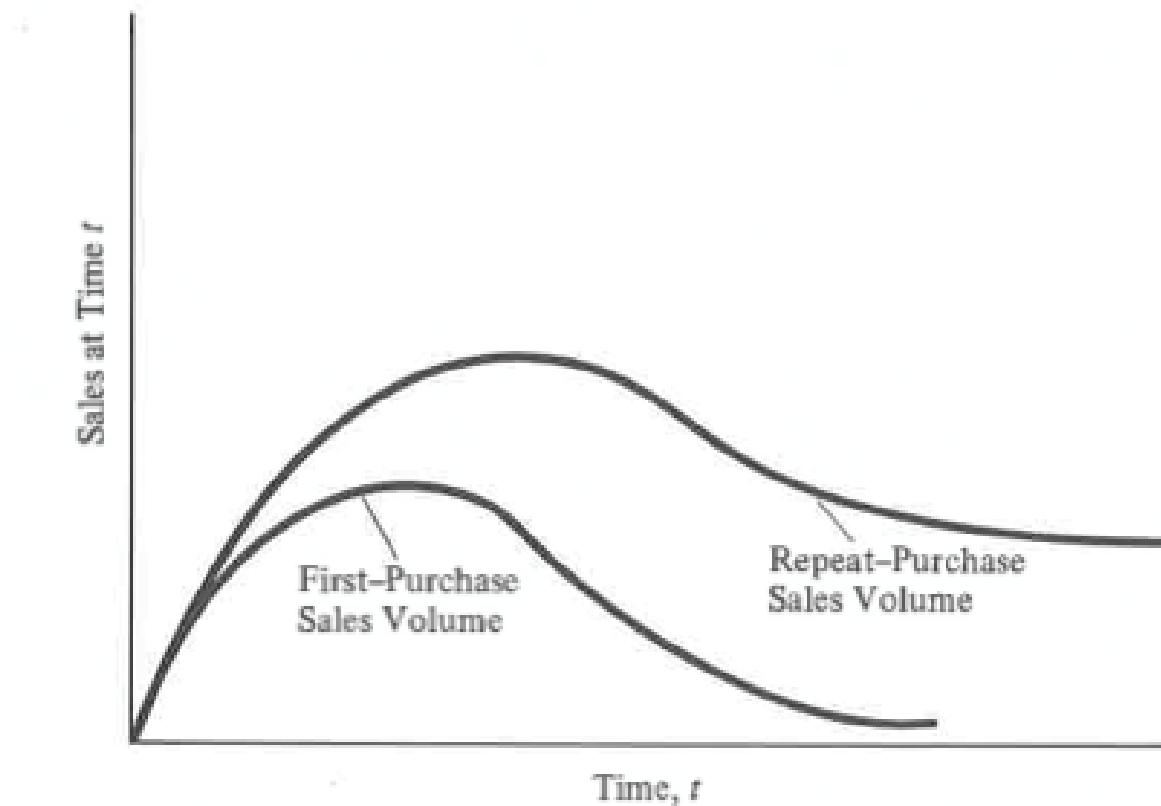


EXHIBIT 10.3 Sales life cycle for a repurchasable new product.

Forecasting adoption: Bass Model

- Sales at any point come from two types of consumers: Innovators and imitators
- The number of people who can innovate is a fraction of those who have not yet bought
- The number of imitators depends upon how those who have already purchased influencing those who have not
- Probability of purchase:

$$P_t = \left[p + q \left(\frac{Y_{t-1}}{M} \right) \right]$$

$$S_t = \left[p + q \left(\frac{Y_{t-1}}{M} \right) \right] (M - Y_{t-1})$$

where

S_t = Sales in period t

Y_{t-1} = Cumulative sales up to period t-1

p = Coefficient of innovation

q = Coefficient of imitation

M = Total market potential

Diffusion of Innovations

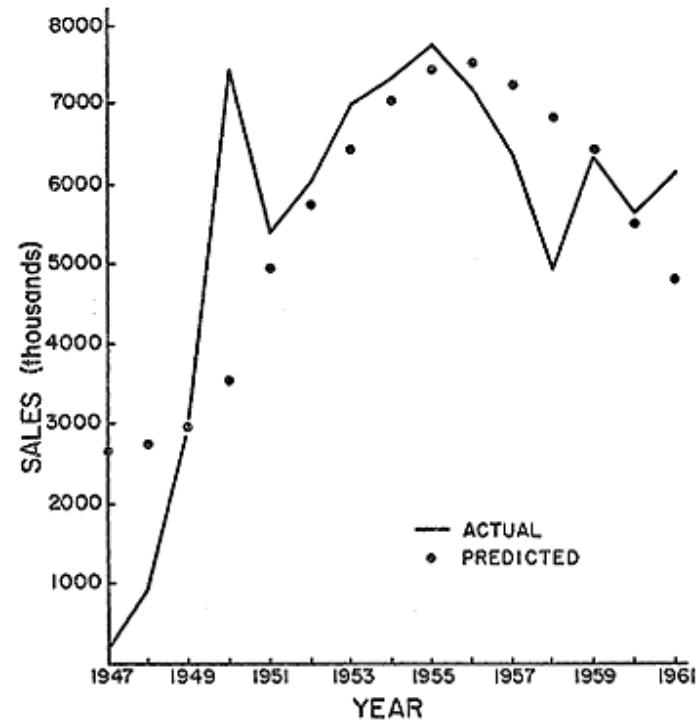
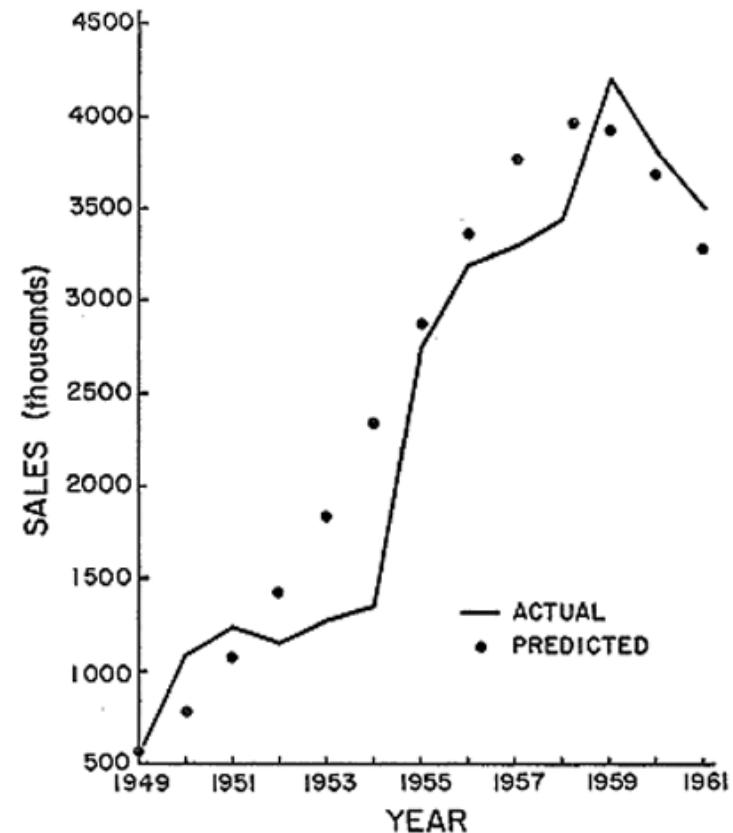
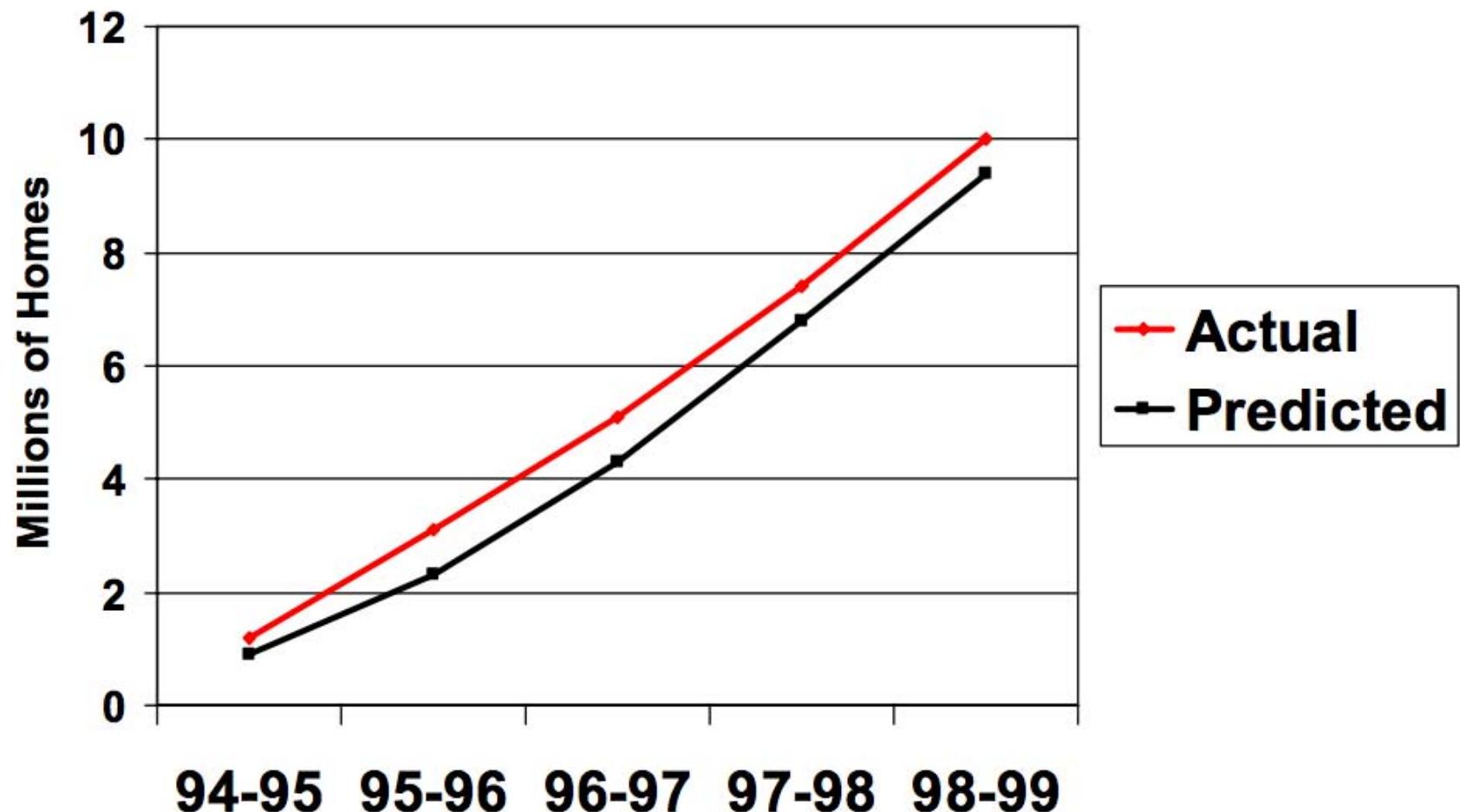


FIG. 6. Actual sales and sales predicted by regression equation (black & white television) FIG. 7. Actual sales and sales predicted by model (power lawnmowers)



More recent: DirecTV

DirecTV Forecast vs. Actual



Where do these numbers come from?

- M, P, Q
- Non-radical:
 - Traditional demand estimates (conjoint, etc)
- Radical
 - From historically similar products
 - Surveys of consumers
- Initial sales data

Another related approach

Nielsen BASES

The Nielsen BASES System is the world leader in simulated test marketing (STM) for new and existing consumer packaged goods brands. BASES models assist clients to estimate likely future sales volume of initiatives, identify the key drivers of the volume, and then improve the volume and profit potential, all prior to market entry.

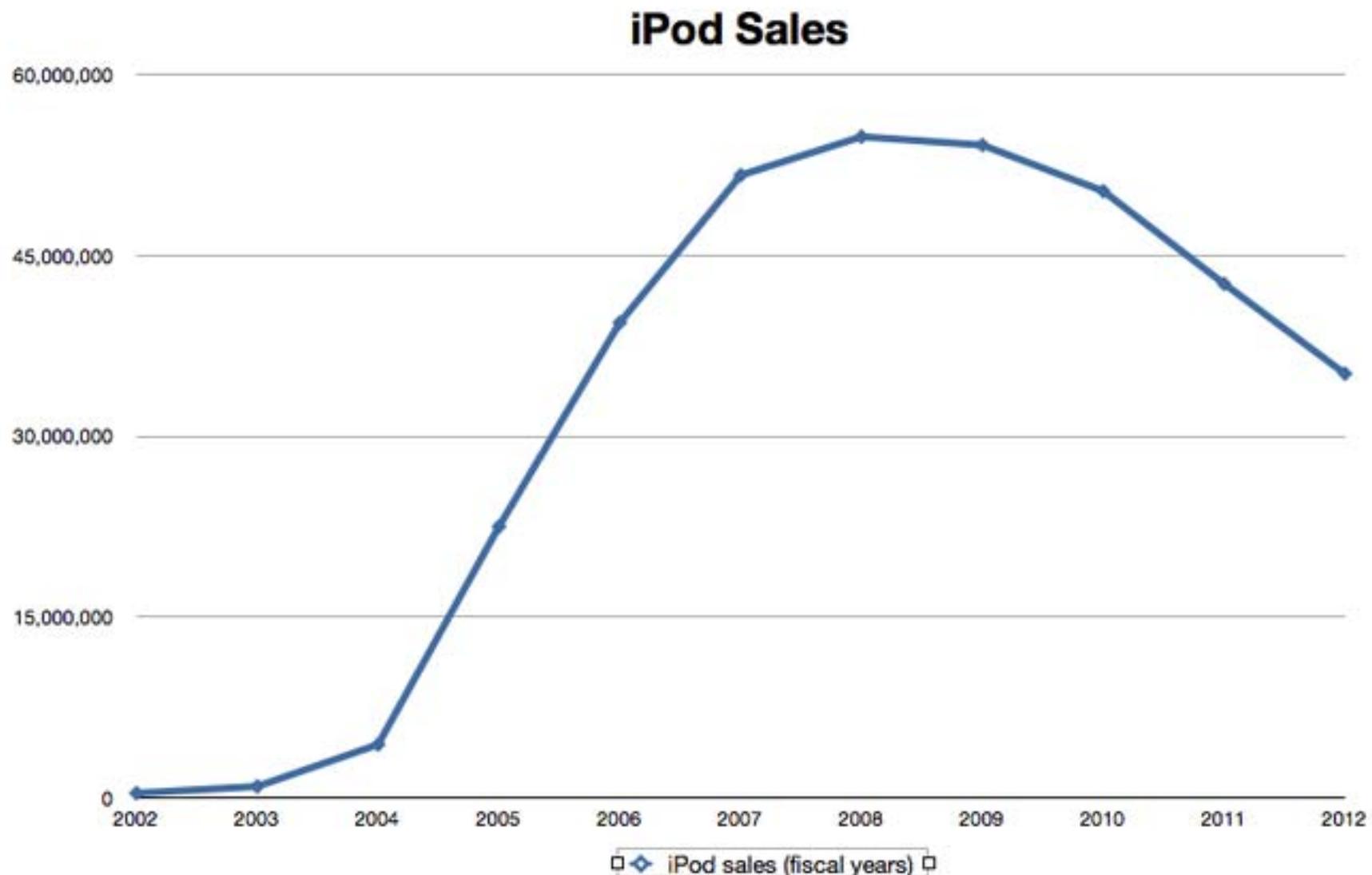
Over 860 validations have been conducted of BASES forecasting accuracy, with the average estimate falling within 9% of actual sales and with 91% falling within 20% of actual sales.

The Nielsen BASES Suite of Products

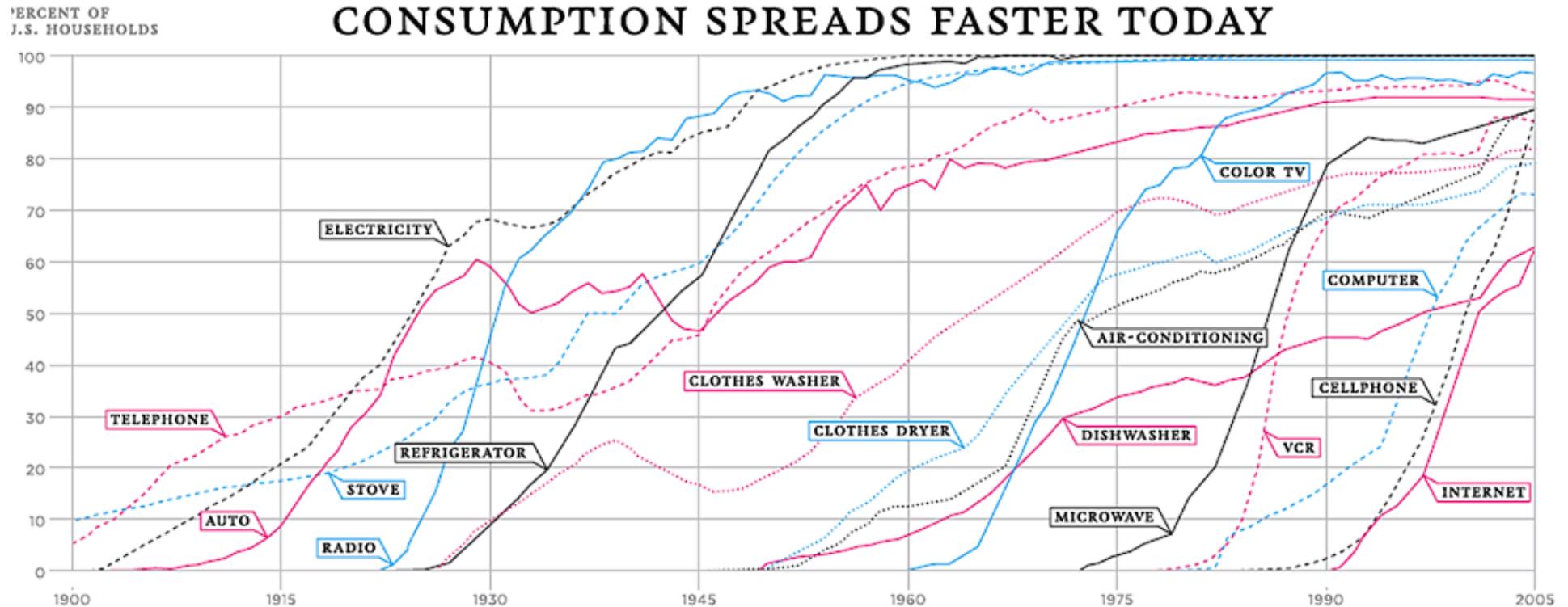
The BASES service covers both the early stage of the NPD process where marketeers wish to judge the best positioning amongst a number of new concepts, through to the testing of the final concept and product mix. The key BASES models are:

- Pre BASES - For screening concepts/positionings
- BASES I - For concept evaluation
- BASES II - For concept/product evaluation
- BASES IV - For tracking new products after launch.

What does the other side of the hump look like?



What does the other side of the hump look like?



Bass Model

- Advantages:
 - Seems to fit the data remarkably well
 - Simple and easy
- Disadvantages:
 - This is all just correlational
 - In reality we can control P,Q,M (are endogenous)
 - Where to get data?

Non-durables

- Same numbers
- Also need % of customers that will continue to purchase
 - Use demand model to forecast this
- If you teach people about the product category, they may substitute to your competitors!
 - Greek Yogurt example
 - Prescription Drugs – Shapiro (2016)
 - Need to take this into account when modeling

Greek Yogurt Touts Appeal of the ‘Real’ Thing

By STUART ELLIOTT

Chobani, the Greek yogurt brand that has enjoyed explosive growth, is opening wide its corporate wallet to rapidly expand a marketing initiative that began last month during the ABC broadcast of the Academy Awards.

The initiative, which carries the theme “Go real,” is expanding into realms that include print and digital advertisements; the brand’s Web site, chobani.com; and social media like Facebook and Twitter.

Chobani will spend about \$30 million in the next eight to 10 weeks on the initiative, said Hamdi Ulukaya, the founder of Chobani who is the company’s president and chief executive. One goal of the initiative is to promote Chobani as a “simple, pure food,” he added, and demonstrate that it is possible for a food maker to “leave food alone” and “keep it simple, keep it real.”

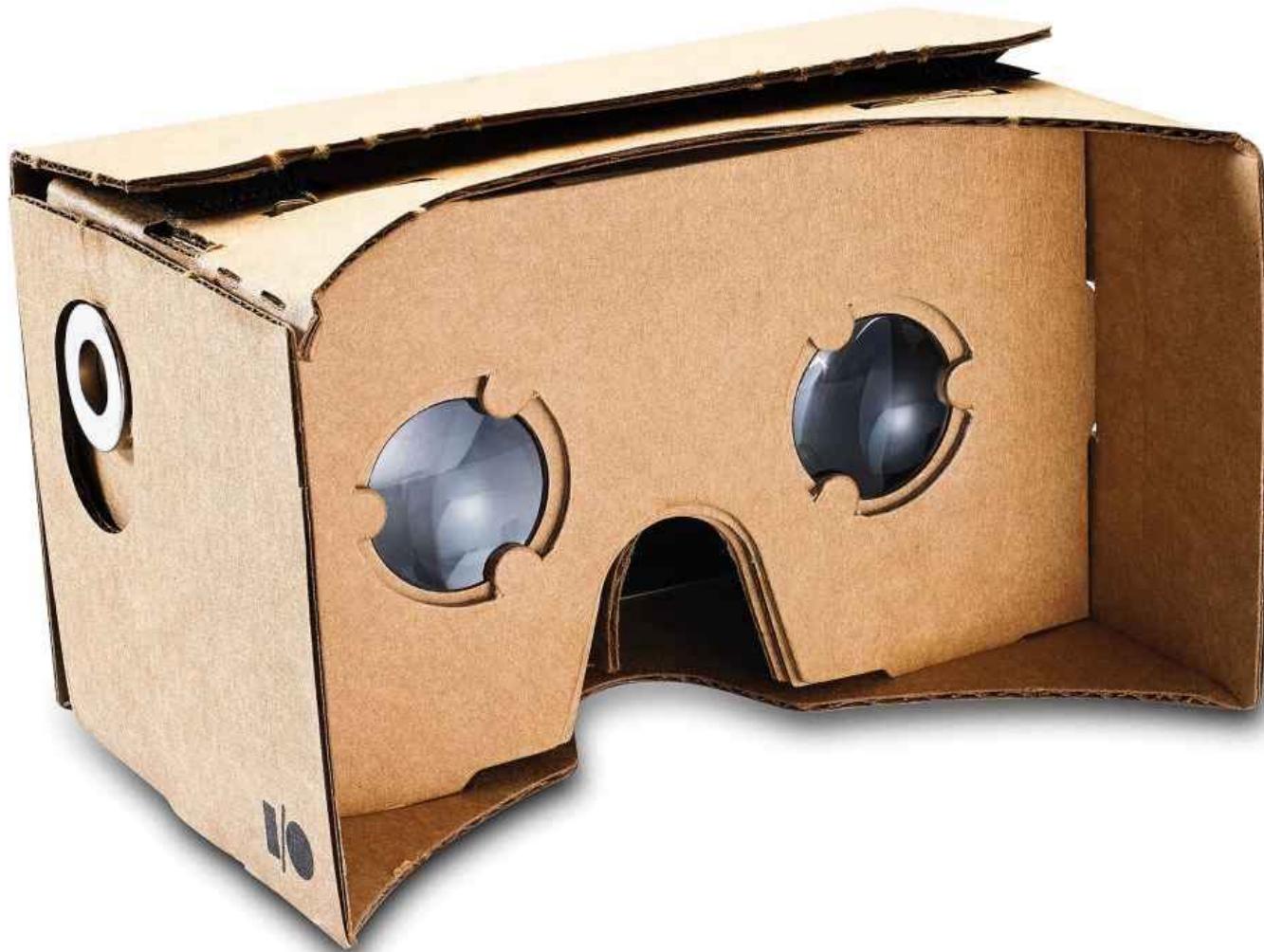


Chobani will spend \$30 million on an advertising initiative to promote its “Go real” theme.

Other Problems?



Other Problems?

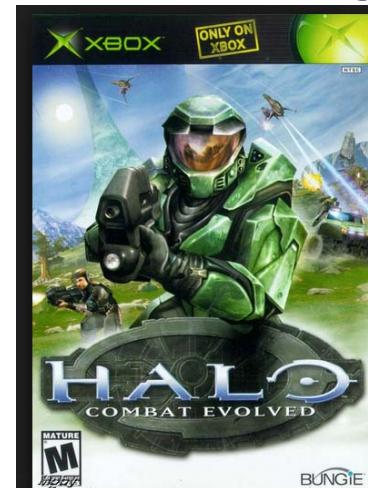


New Products - Summary

- New product development:



- Consumer adoption decisions / forecasting





37000: Marketing Strategy

Product Line Decisions

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Product Line Decisions Outline

- Today:
 - Moving from a single product to two products and the tradeoffs
 - Behavioral components
 - Deciding when product line extensions make sense vs. totally new products vs. not entering a market
 - Behavioral Components

Do you Want to Have a Product Line?

- Question 1:
 - Do you want to introduce a product that is “unrelated” to your first-best target market product?
- Question 2:
 - Do you want to introduce a (second) product that is “similar” to your current product?
- Question 3
 - What about complementary products?
- Which is which?

Unrelated Product

- Why do we see some companies with large, seemingly unrelated product lines
- And others with focused, short product lines.



© 2012 convergencealimentaire.info

Unrelated Products

- Synergies in:
 - Distribution
 - Manufacturing
 - Innovation
 - Branding
- Does it fit with our corporate culture?
- Is there marketing here?
 - Economies of scope
 - Operations
 - Inside the firm dynamics (OB)

Partial Substitutes

- More interesting from a marketing perspective:
 - When should you introduce a product that is similar to your existing product line?

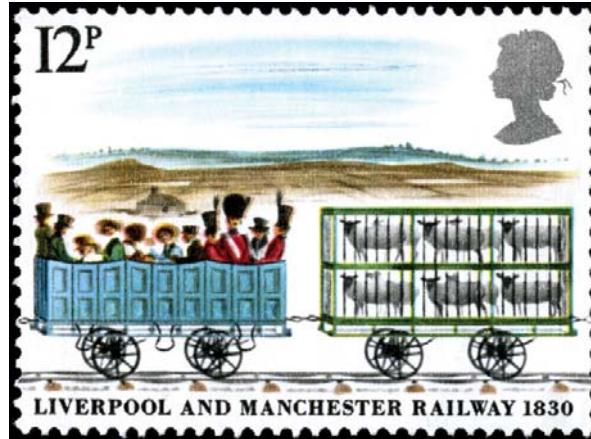
Related products: Motivation



“Only too often does the sight of third-class passengers traveling in open or poorly sprung carriages, and always badly seated, raise an outcry against the barbarity of the railway companies.

It wouldn't cost much, people say, to put down a few yards of leather and a few pounds of horsehair.”⁵²

Motivation



“What the company must do is to prevent the passengers who can pay the second-class fare from traveling third class;

It hits the poor, not because it wants to hurt them, but to frighten the rich.

Having refused the poor what is necessary, they give the rich what is superfluous.”

Self-Selection

- How does consumer self-selection affect decisions about whether to create a second product or not.
- Fundamental framework:
 - Constrained Optimization

The Tradeoff

- Attract:
 - Consumer that wouldn't have purchased now purchase
 - Those that aren't in the category at all
 - Stealing business from your competitors
- Lose:
 - People that are purchasing your current product (which might be higher margin)
 - Choosing product quality appropriately can mitigate this loss

Motivation

3 May 2013

HUFFPOST BUSINESS
UNITED KINGDOM 

Third Class Rail Tickets: Standing Room Only Or Premium Economy Fares Could Be Introduced

“Getting a seat can be a struggle for some passengers as overcrowding on the railways continues to be a big problem – nationally less than three in four passengers (69 per cent) tell us that they are satisfied with the availability of seats or space to stand.”

Nissan & Infinity from last time

- Should you introduce the Nissan?
- Depends on:
 - Marginal Costs
 - Distribution of consumer preferences
 - How many low type guys are out there.
- Choose:
 - Qualities / Prices of the products
 - Can derive the number of people that substitute
- You might want to lower the quality of your worse product so that you don't cannibalize your high margin product

Example: Should Apple Introduce a Cheap iPhone?

Apple to sell 75 million low-cost iPhones next year, says analyst

The much-rumored low-cost iPhone would cannibalize sales from the more expensive model but help Apple grab a healthy chunk of the low-end smartphone market.



by Lance Whitney | April 16, 2013 5:39 AM PDT

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(Credit: CNET)

Example: Should Apple Introduce a Cheap iPhone?

In an investors note released today, Munster said he expects Apple to sell a \$300 non-subsidized iPhone starting in September. Such a device is likely to trigger a 30 percent cannibalization rate, which means that for every three low-cost iPhones sold, one full-price iPhone is cannibalized.

As such, Apple's share of the high-end smartphone market may dip to 37 percent next year from 43 percent last year. But its share of the low-end (under \$400) market will rise to 11 percent in 2014 from nothing in 2012.

The iPhone 5c

Despite Record Sales Quarter, Apple's iPhone 5c Likely Wasn't Key To Growth

Posted Jan 27, 2014 by [Darrell Etherington \(@drizzled\)](#)

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This suspicion that the iPhone 5c is not selling quite as well as Apple might have expected

it could indicate that Apple needs to really deliver on the idea of a cheaper iPhone – the iPhone 5c was anticipated to be that, but in the end it was the same price as older devices bumped down the line in previous quarters.

The \$17 Chianti vs. the \$72 Brunello



More General Example:

The screenshot shows a web page from NYTimes.com. At the top, there's a decorative header featuring colorful, stylized illustrations of what look like traditional Mexican ceramics or pottery. Below this, a large white rectangular box contains the main content. Inside the box, the text reads:

Thank you for visiting NYTimes.com
We hope you've enjoyed your **20** free articles this month.

As you may already know, we are now charging for unlimited access to our content. You can come back next month for another 20 free articles or choose unlimited access with a Digital Subscription and continue to enjoy the world's best journalism, anytime, anywhere and on any device. Subscribing is quick and easy.

TO KEEP READING, SIGN UP TODAY.

[GET UNLIMITED ACCESS ▶](#)

Below this, there are two lines of smaller text:

Already a Home Delivery Subscriber? Get your free, unlimited access [here](#).
Already a Digital Subscriber? [Log in here](#).

On the right side of the main content box, there's a small image of a laptop displaying the NYTimes.com homepage. To the left of the main content box, there's some partially visible text from other articles:

CONTAMINATED
By NICHOLAS BAK
Published: March 2

When Dr. Ge
department o
Philadelphia,
the variety of

Related

From a previous posting in Colorado,
he knew that colorful Mexican

At the bottom of the main content box, there are links for "PRINT" and "REPRINTS". Above the main content box, there's a navigation bar with the text "What's Popular Now" followed by a small Facebook icon. To the right of the main content box, there are several small images and links, including "Egyptian Cobra", "William Cronon", a portrait of a man, "Disorders", and "or Leg Pain".

Competition

- What if there is a competitor in the new market?
 - Positive: More consumers purchase my product
 - Negative: You have to lower price to attract any customers
 - This increases the cannibalization problem
 - Unless what?

Preventing Cannibalization



Quantitative Marketing and Economics

September 2016, Volume 14, Issue 3, pp 201–231

Estimating the cost of strategic entry delay in pharmaceuticals: The case of Ambien CR

Authors

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Authors and affiliations

Article

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Shapiro, B.T. Quant Mark Econ (2016) 14:
201. doi:10.1007/s11129-016-9170-9

1

Shares

Main Problem for Drug Innovation

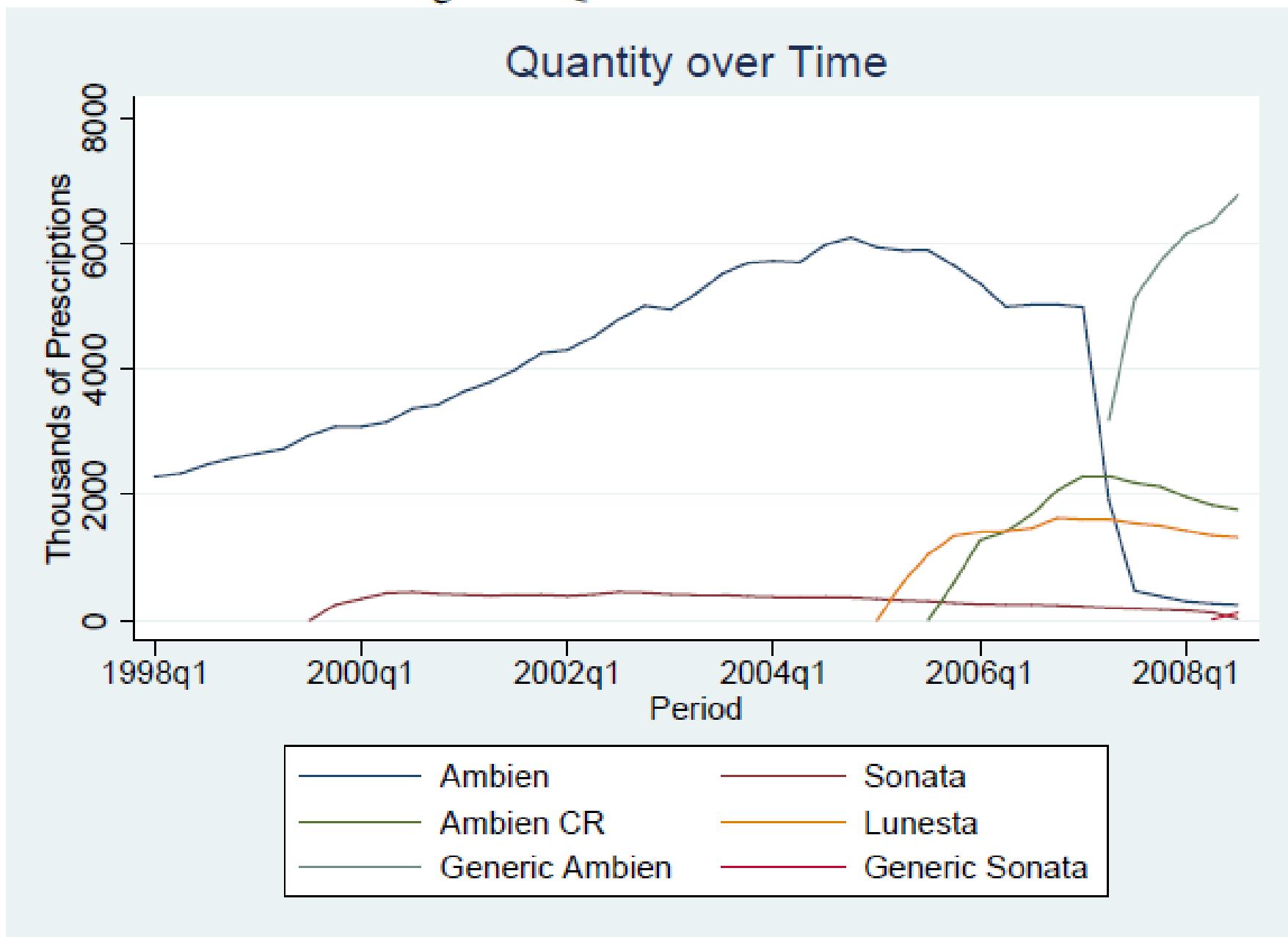
- Patents give effective monopolies for limited amounts of time.
 - When that time runs out, a generic manufacturer will steal all of my share.
- What happens if I introduce a superior product while the original is still under patent?

A Solution.

Over the next few years, a number of blockbuster drugs face patent expiration...it is estimated that by 2012, brands with more than \$30 billion in sales will face new competition from generics. As more brands face patent expiration, many manufacturers will face the dilemma of how to grow revenue and minimize operational cutbacks as reliance on the new drug pipeline is unrealistic. One tactic is to develop an extended release formulation of an existing brand. Whether you call it extended release (ER, XR), long-acting (LA), or extra-long (XL), the modified formulation is intended to simplify dosing, improve compliance and extend the life of the patent. (emphasis added)

Kelly Renfro, Marketing Manager for McKesson Patient Relationship Solutions¹

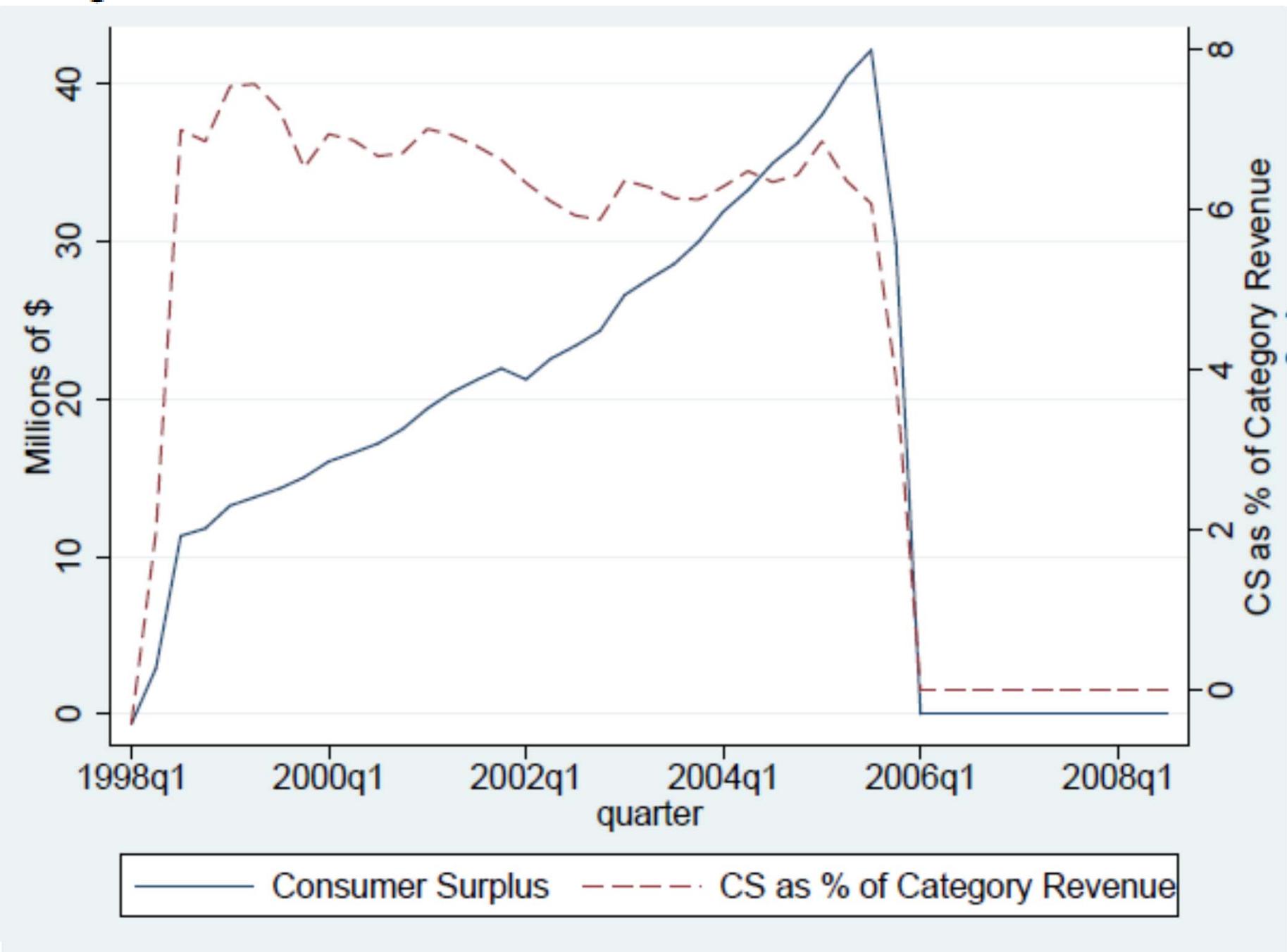
Figure 1: Quantities over Time



However

- It could be that the new product isn't actually any better than the old.
- If adoption of the “superior” product is only driven by advertising, perhaps it is too expensive to make this strategy work.

Figure 5: Welfare Gains in Each Time Period from Ambien CR Presence



Possible Ways to Eliminate This Delay

- Eliminate Patents/Other Exclusivity for Slight Changes to Drugs
 - If new product enters, get generic sooner and no incentive to delay, BUT
 - Run the risk of new product never entering!
- Alternatively, could change the exclusivity reference date
 - Ambien CR gets N years after Ambien patent expiration regardless of entry date
 - Removes incentive to delay.
 - Removes risk of never entering

Conclusion

- It might be worth strategically withholding a product you've already developed from the market if you think it will cannibalize your existing product sales.
- This might be bad for consumers, though.

Behavioral Components

- Other reasons not to extend your product line?
 - Choice overload
- Other reasons to extend your product line?
 - Context effects (from week 3)
- As usual, be careful in figuring out when and where these things apply.

Choice Overload



I KNOW! I'LL QUIT MY JOB AND DEVOTE MY LIFE TO CHOOSING PEANUT BUTTER! IS 'CHUNKY' CHUNKY ENOUGH, OR DO I NEED 'EXTRA CHUNKY'?



I'LL COMPARE INGREDIENTS! I'LL COMPARE BRANDS! I'LL COMPARE SIZES AND PRICES! MAYBE I'LL DRIVE AROUND AND SEE WHAT OTHER STORES HAVE! SO MUCH SELECTION AND SO LITTLE TIME!



I THINK YOU SHOULD DO THE SHOPPING. DID THE MANAGER HAVE TO TALK TO YOU AGAIN?



Too many products: Choice Overload

- “In a California gourmet market, Professor Iyengar and her research assistants set up a booth of samples of Wilkin & Sons jams. Every few hours, they switched from offering a selection of 24 jams to a group of six jams. On average, customers tasted two jams, regardless of the size of the assortment.
- Sixty percent of customers were drawn to the large assortment, while only 40 percent stopped by the small one.
- But 30 percent of the people who had sampled from the small assortment decided to buy jam, while only 3 percent of those confronted with the two dozen jams purchased a jar.

P&G: Real World

- Since so many of the 30,000 items in a typical supermarket offer small differences from each other, shoppers face numbing selection.
 - ``There's this vast array of products," says Shelby Reyes, a 58-year-old Cleveland bookkeeper. ``A lot of times I end up getting what's on sale...or I say the hell with it." Concedes P&G's president, Durk I. Jager: ``It's mind-boggling how difficult we've made it for them over the years."
- One of the biggest cuts came in its U.S. hair-care business. Minor brands such as Prell and Ivory shampoo were cut way back. Even the mighty Head & Shoulders line was pared in half, to 15 variations.
- The moves met some resistance from P&G's brand honchos, who thought, "Oh my God, we're going to lose sales because we're going to have fewer items,"
- But simplification quickly paid off: Sales per item in hair care more than doubled

Grocery Store Example



Trader Joes, Where Less Is More

■ DENISE LEE YOHN, BRAND AS BUSINESS BITES | % MAY 31, 2011, 8:22 AM | 1,565 |



- Trader Joe's takes product to a new level with a carefully managed product line of approximately 4,000 SKUs [vs. the more traditional and overwhelming 50,000 SKUs]

Other reasons: Compromise Effects

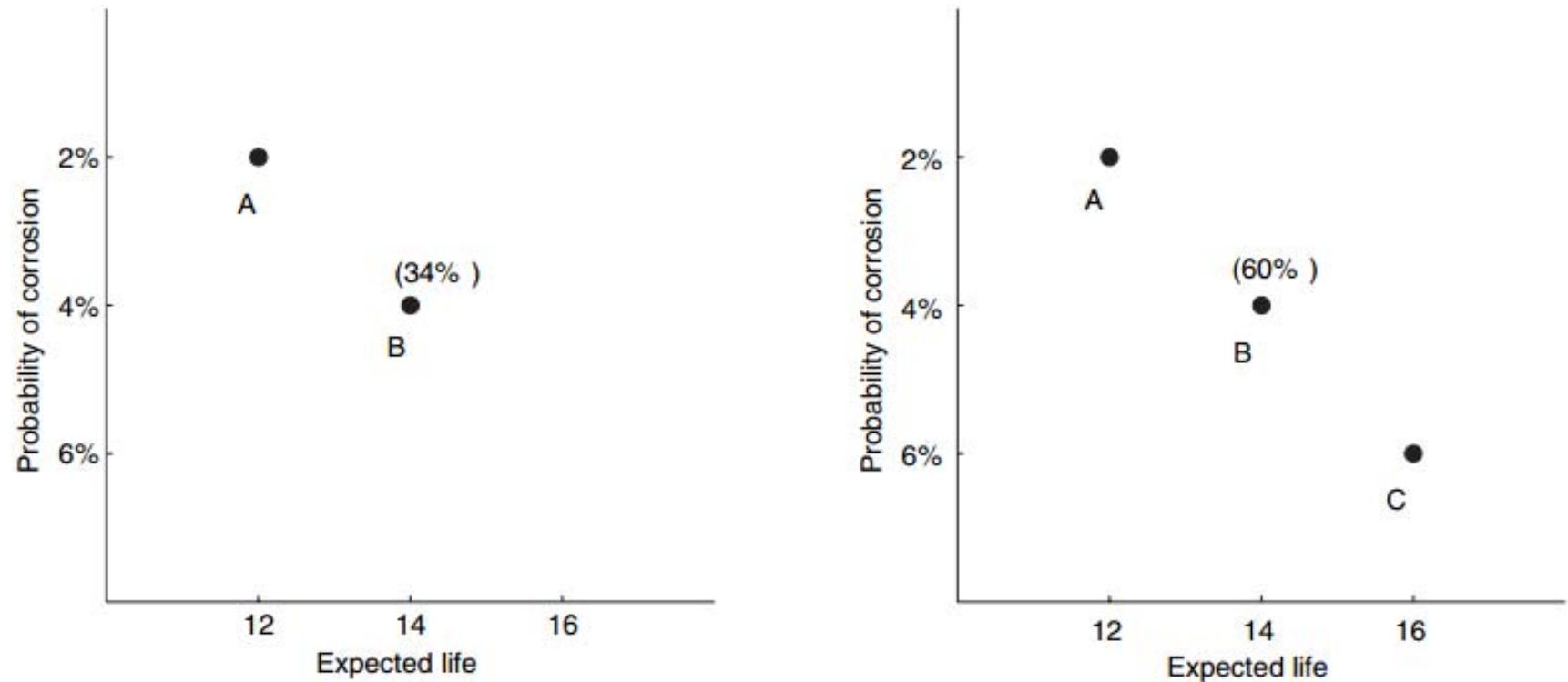


FIGURE 1. COMPROMISE EFFECT WITH CALCULATOR BATTERIES

Related Products

- Summary
 - Product lines are used to segment consumers
 - Quality is an added dimension
 - Over and above price
- Tradeoff:
 - Cannibalize your existing product
 - Bring new consumers into the market (either not currently purchasing or from competitors)
- Behavioral Effects
 - Choice overload

Brand Extensions

- When introducing a new product, what's the question?
 - Use existing brand
 - Create completely new brand / sub-brand
- 80% to 90% of new products are brand extensions (Keller 2003)

Brand Extensions

- Advantages:
 - Leverage existing brand knowledge / associations
 - Attach a badge of quality to a new, risky, product
 - Reduce risk to consumers
 - Could backfire
 - Spend less on advertising
 - More likely to be accepted by distribution partners
 - Revitalize the brand
 - Spillover effects onto older products

Brand Extensions

- Disadvantages:
 - Can hurt parent brand quality
 - Can dilute the message of the parent brand
 - Extending across category.
 - How to think about associative networks
 - Here, thinking about complements might be helpful.

When to Extend Brand

- There is a perception of fit between the parent brand and the extension product
- Two dimensions:
 - Product category
 - More general associations:
 - What are the associations that consumers have with the parent brand?
 - Ivory: “soap” “mildness” “quality”
 - Dishwashing liquid, laundry detergent, and shampoo and conditioner

When to Extend Brand

- The initial brand is of high quality:
 - Even though consumers may still believe a relatively distant brand extension does not really fit with the brand, they may be more willing to give a high-quality brand the benefit of the doubt.

When not to extend the brand?

- When it is prototypical of a certain category
 - Bayer aspirin (nonaspirin painkillers)
 - Chiquita bananas (frozen juice bar)
 - Country time (apple cider)
- Concrete associations are more difficult to extend than abstract ones
 - If tied to the specific product characteristics then harder to extend

When not to extend the brand?

- When it is in a different product category
 - And it fails
- Vertical product line extensions downward
 - 1) If extension succeeds and the product is of lower quality
 - Consumers judge the quality of a brand by the lowest quality product in the line
 - 2) If extension fails
 - Reflects badly on the brand overall

Brand Extensions

- With downward “stretches” introducing a sub-brand
 - 1) Doesn’t dilute brand equity
 - When and under what circumstances?
 - 2) Makes cannibalization less likely
 - This is a way of distorting quality downward
- Balanced against the increased sales that might come from using the brand name

Summary

- Branding
 - Activates a set of associative networks
 - These filter back into our consumer utility framework
 - Branding strategy depends on which characteristics you want to activate
 - Determines elasticities / substitution patterns
- Extensions
 - Benefits: Get to leverage existing brand equity
 - Downside: Can dilute existing brand

Summary – New Products and Product Lines

- New Products
 - How do you come up with them?
 - How do you forecast demand?
- Product Line Decisions
 - Sell to new segments vs. Cannibalization
 - It's all just a constrained optimization problem
 - Behavioral components

Next Week

- Case Memo: NYTimes.com Paywall
- Quant Assignment 5: TruEarth go/no-go decision
- Guest Speaker: Branding
 - Paul Hillen, SVP Cargill