

E/ME 105

Lecture 4  
Marketing  
and Research  
January 20, 2015

## HW for Next Tuesday

1. 3-5 Original Marketing hypotheses
2. Show any post-research modifications if necessary
3. Sample script for primary research (<20 questions)
4. Start actual research!
  1. Show the contacts you made and actual or scheduled interviews.
  2. Show results of early Interviews and summary of what you learned

What is Marketing?

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- What does this have to do with engineering?
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***Ready! Fire! Aim!***

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**Add an "S" for service**

# Importance of Marketing

**Perhaps the single most important failure mode in the product development process**

- **Bad research (confirm prejudices)**
  - **In Rehabilitation- not really understanding the customer**
  - **Poor communication**
  - **Poor understanding**
  - **Complexity of physical nature of the problem**
  - **Complexity of psychological reaction to the problem**
  - **Ephemeral nature**
  - **Not in an equilibrium state**
- (right  $\longrightarrow$  wrong)**
- **Poor Process e.g., sloppy transfer of market knowledge to design**

# Some attributes

**Strong Customer involvement**

**Customer cares**

**Customer has “pain”**

# Can define market segment

Age

Sex

Social status

Education

Income

Occupation

Location

What's important (values)

Social

- Cultural

- Religious

- Etc.

- **Market Size**

- **How many people have the problem that you are addressing?**



# “Competitive” advantage

**How is competition addressing the pain?**

***Remember doing nothing is a candidate solution***

# Techniques

- **Google**
- **Interviewing**
- **Polling**
- **Filming**
- **Working together to a common purpose  
(Customer collaborates on design)**
- **Other?**

# Consider in turn

## P1 Product

- Needs identification- What is the pain?
- How product would actually be used
- Context discovery- especially culture, what it will be used for, what it will enable
- Modification of existing product for new market
- Modification of existing product to improve for the same market
- Brainstorming of concept
- Coolness

# Consider in turn

## **P2 Pricing**

- **Who is paying for it?**
- **What can the customer afford?**
- **What value does the product bring?**
- **What financing arrangements are possible**
- **What is the price of a competitive product**
- **What price is necessary to return a profit?**
- **Why keep the price as low as possible?**
- **How does the cost affect the price (don't confuse!)?**
- **Is it "immoral" to earn a "fat" profit?**

## P2 Pricing (cont)

- **General rule of thumb is as cheap as you can make it.**
- **But what if you have to leave out an important feature?**
- **What if it is junk?**
- **What if it is dangerous?**
- **What if it is still too expensive?**
  - **Limit to how cheap you can make stuff?**

# P2 Pricing (cont)

## What are some ways of making the product really, really, really cheap

- Government subsidy
- Repurpose an existing cheap model
- Local materials
- Efficient factory process (inventory cycle)
- Partnerships with local businesses
- Outsourcing of production/manufacturing process
- What specifically affects the manufacturing cost (below-the-line)?
  - Promotions/Advertising
  - Distribution Channels
  - Government Sanctions
  - Administrative Costs
  - Commissions for Salespeople
  - Customer Service
  - Operational Costs

# Consider in turn

## **P3 Promotion**

**How do you make the customer aware of the existence of the product?**

**Doctors**

**Rehabilitation Specialists**

**Website**

**Insurance Companies**

**Word of mouth**

**Brochures/pictures**

**Demo at market**

**Someone uses it for free- acts as salesperson**

**Radio/TV**

**Education**

**Door to Door**

# P3 Promotion (cont.)

**How can you generate excitement about the product?**

**Pizzazz**

**Personal experiences- testimonials**

**Promotion lower price**

**Celebrity endorsements football players, community leaders, church leaders**

**What are the costs of Promotion**

- Need to budget!
- Can be cash hog



# Consider in turn

## **P4 Placement (Distribution)**

**How do you get the product to the customer?**

**Consider where it will be manufactured**

**Consider who will sell it? (effect on price!)**

**Consider how you get it to the person who will sell it**

# Service

**Consider how it will be maintained**

**Consider how it will be Repaired**

**Consider how people will be trained in proper use**

**Provision for Spare parts**

**Consider warrantee**

# Marketing Research

## Primary Research

*Original* research- data collected from the target market

Work with Rancho here

Use actual customers

Observe

# Marketing Research

- ***Meta* research- data collected from literature**

- trade association data

- industry publications and databases

- government databases

- Journals

- Texts

- “Economist” and other publications

Go quickly from general to particular

# Target Markets

- **Who are the people who will use your product?**
  - **Geographic**
    - US Regional and Foreign
  - **Demographic**
    - Age, sex, ethnicity, income, occupation, education
  - **Psychographic**
    - Life-style, activities, interests, opinions
- **How will they use product (use patterns)?**
- **What benefits will they derive?**
- **Do for**
  - **Primary market-** the first market addressed
  - **Secondary market-** the next market(s)

# Segmentation- continued

- **Psychographic variables**
  - **life-style**
  - **Activities**
  - **Interests**
  - **Opinions**
  - **Product use patterns and product benefits**

# Market segmentation

- **Market “strategy”**

- *There are 1.7B Chinese. Even if we got only 1% of the market. . .*

**What’ s wrong with this?**

# Barriers and Risk Analysis

What are some of the reasons why your customer won't adopt your product?

What can you do to mitigate this risk?

Importation

Local source

Alternative design

Test market

Learn from others

Build inventory



# Write your Mission Statement. . Then Begin Research Write script

## Script

- Begin with Market hypotheses (3-6)
  - Examples?
- Design questions to test these hypotheses
- Keep short- you are using up people's time!! 30 minutes tops. 10 minutes better
- Can your customers use internet?

<http://www.surveymonkey.com/>

<http://www.zoomerang.com>

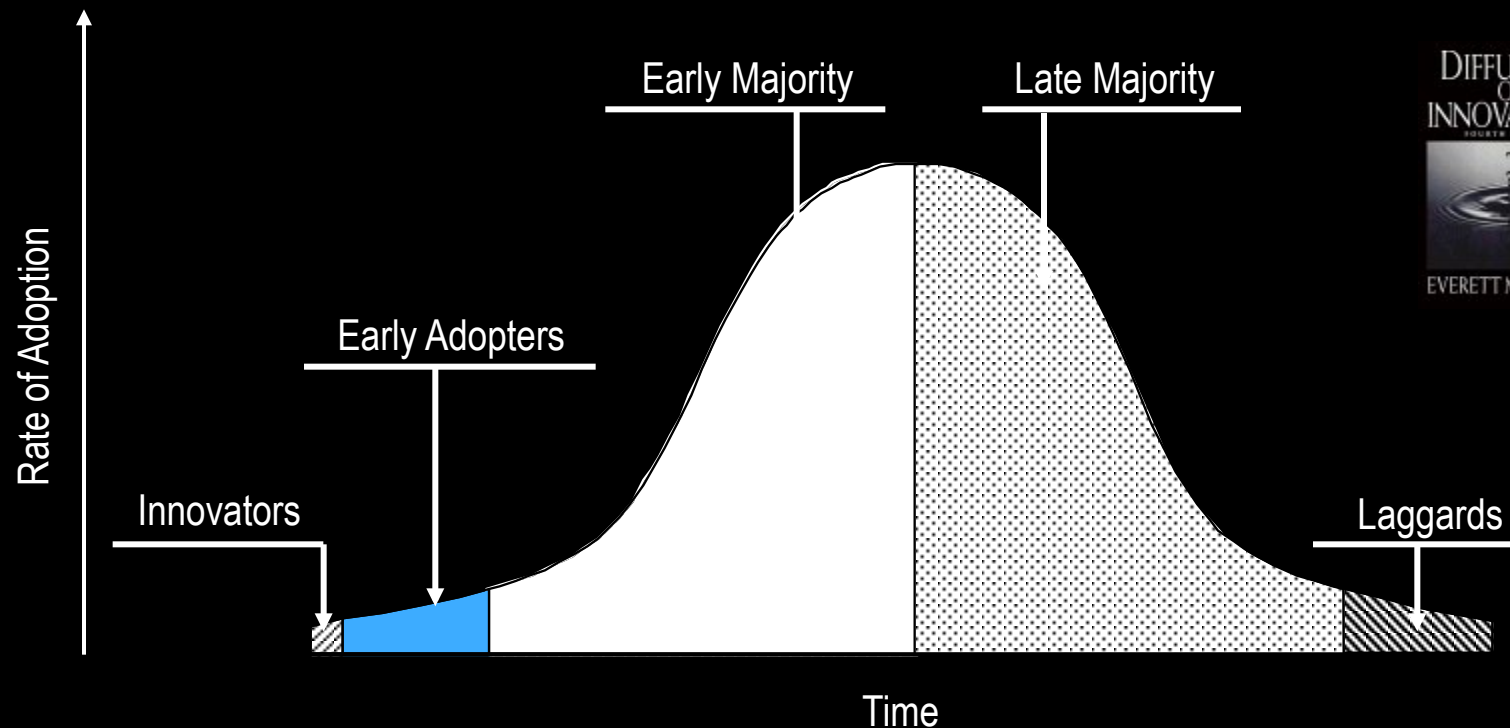
## Generate Hypotheses & Identify Underlying Assumptions

<b>EVALUATION QUESTIONS:</b>	<b>For Which Customers Do I Solve Important Problems?</b>	<b>Does The Value vs. Competitive Alternatives Justify Change?</b>	<b>How Many Customers &amp; What Will They Pay?</b>	<b>Requirements to Attract, Sell &amp; Support These Customers?</b>
<p><b>State your assumptions regarding what your product is, what it does, and the implications for related technologies</b></p>	<p><b>Quantify the problem you solve vs. alternatives in each target segment</b></p>	<p><b>Quantify total cost of adoption/ switching vs. current methods or alternatives for each target segment</b></p> <p><b>Is it worth it to a customer?</b></p> <p><b>Consider the cultural issues that are barriers to change!</b></p>	<p><b>Why will solving this problem be important to more customers over time?</b></p> <p><b>What will customers be willing to pay &amp; what are the implications for your business model?</b></p>	<p><b>What will it take to generate word-of-mouth and “brand” awareness?</b></p> <p><b>What kind of distribution model does the business model require?</b></p> <p><b>What support will customers need to evaluate and use the product?</b></p>

# 10 minute Team Exercise

- Write down your initial market hypotheses

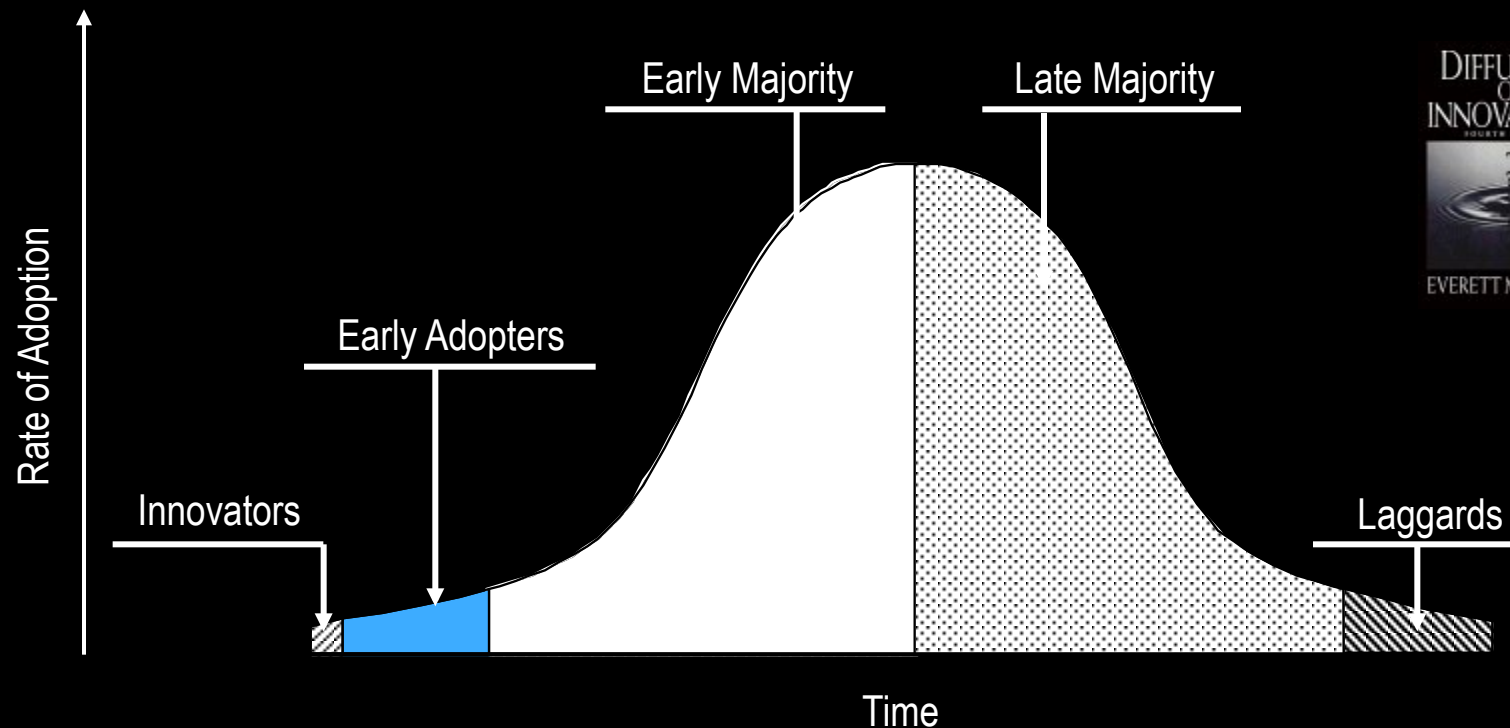
# The Technology Adoption Model as the Basis for Segment Focus



*A measure of the rate of adoption of a cluster of new technologies by a community over time*

**Where are you on this curve?**

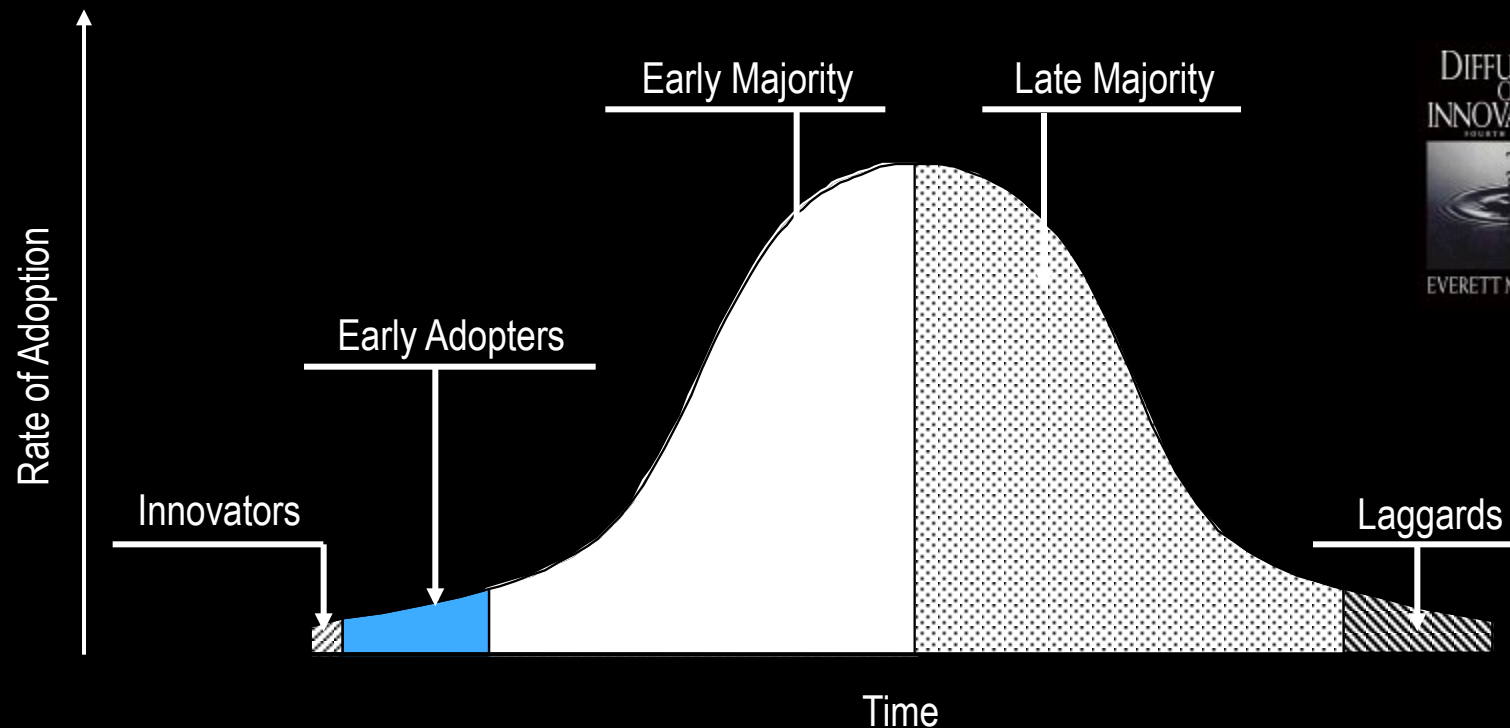
# The *New Idea* Adoption Model in the Rehabilitation world as the Basis for Segment Focus



*A measure of the rate of adoption of a cluster of new ideas by a community over time*

**Where is your target segment on this curve?**

# The *New Idea* Adoption Model in the Rehabilitation world as the Basis for Segment Focus



**Consider age, sex, leadership position in community, respect, income, political savvy, entrepreneurial spirit, etc.**

## Recruit Interview Targets

**How do I get them to talk to me?**

**Rancho!**

**Use your personal, student and other contacts!**

**Remember 6 degrees of separation! Do you know someone who knows someone?**

**Email addresses and numbers often on the web**

**Tap your network for contacts, kiss frogs**

**With companies you are a credible student group building products and services for for the Disabled-- meeting is a chance to influence your investments**

**With Universities use the Caltech name! Be shameless!**

# For the real customer

- Develop relationships through multiple contacts
- Socialize
- Help them with what they are doing
- Use influencers (heads, other volunteers)
- Others



# Interview

- **How do I approach them?**
  - **Use your 30-second pitch for in-person calls**
  - **E-mail, follow-up phone calls work well if appropriate**
  - **Send them a note on what you know to date**
  - **Provide agenda and general topics in advance -- gives the target a chance to think**

# Open Ended Interview Questions

- **Flow from general to increasingly specific, but always open ended**
- **Question “DOs”**
  - Why? How do you measure that? How do you define that term? What’s working, what isn’t? Can you draw a diagram of that so I can see where it fits in your overall problem? How did you determine the value of that? How would you make tradeoffs among those things? How will you remove barriers to your success? What would the ideal situation look like?**
- **Question “DON’ Ts”**
  - Don’t you think if...? Would you like it if...? Black or white, yes or no...? We think, what do you think? If we do this, will you do that? What do you want? What will you pay for it? What should we do?**

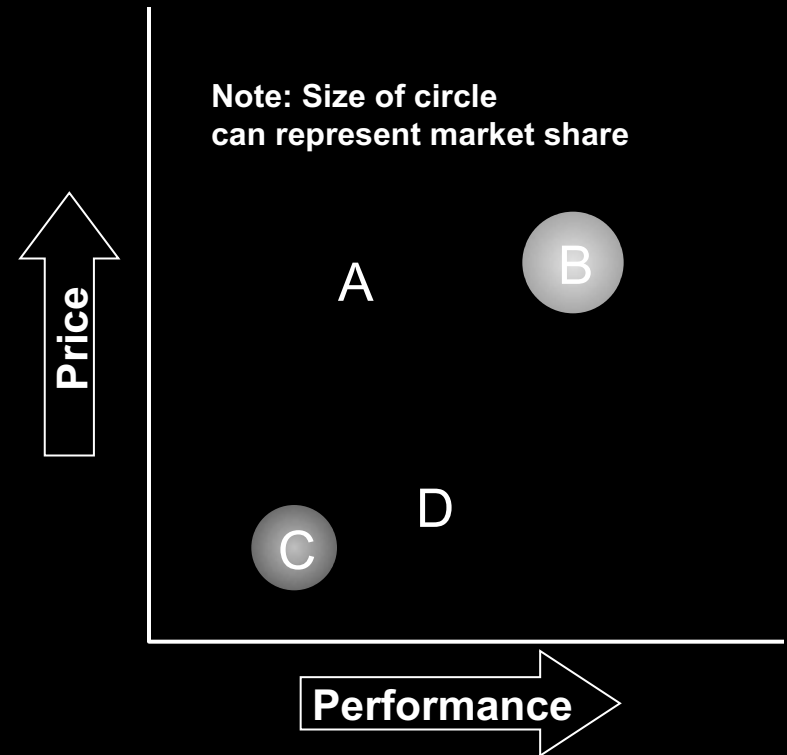
# Competition

**The competitive landscape**

**Provide an overview of product competitors, their strengths and weaknesses**

**Position each competitor's product against new product**

***No competition is also competition i.e., "doing nothing" is an alternative***



# “Competition”

- Why have previous attempts at Rehabilitation products failed in the marketplace. (Define “failed”)
- How are you going to do better?
- Why should you succeed?
- Write as hypothesis and test in your market study

# Stakeholders

- **Who has to touch the product and the process for it to be successful?**
- **Consider everyone involve**
- **Everyone who can help**
- **Everyone who can get in the way**
  
- ***Important part of understanding market***  
***-people you ignore at your peril***