Funding Innovative Research

Small Business Innovation Research (SBIR)
Small Business Technology Transfer (STTR)
SBIR – Innovation & Commercialization
A start-up is not a small business

A start-up is an enterprise in search of a scalable and repeatable business model

-Steve Blank
(dumb reasons) why startups fail?

All you’ve gotta do is ask
IF I WERE OUR TEENAGE GIRL TARGET, I WOULD LOVE OUR NEW PRODUCT.

HAVE YOU ACTUALLY TALKED TO ANYONE TO MAKE SURE?

WHAT? AND LEAVE THIS ROOM?
Interview Potential Customers.
Who plays a **KEY ROLE** in the adoption of your product?
Decision Maker: Individual Doctor
Decision Maker: Committee
End User or Influencer

Decision Maker: Individual Doctor
beneficiary: Patient
Customer Sub-segments
Exercise 1: Customer Roles

- End user
- Decision maker
- Influencer
- Economic buyer
- Saboteur

- Operations engineer
- Urban city management
- West Coast
Customer Pains – what things are they trying to decrease or eliminate

Customer Gains – what things are they trying to increase or add
A Day in the Life of a Customer

<table>
<thead>
<tr>
<th>Understanding customer’s work</th>
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<tbody>
<tr>
<td>1. What are their jobs (e.g. duties, responsibilities)?</td>
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<tr>
<td>2. What products do they use?</td>
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<tr>
<td>3. How much time do they spend using them?</td>
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<tr>
<td>4. How would life change after they use your product?</td>
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<table>
<thead>
<tr>
<th>Jobs Title</th>
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<tbody>
<tr>
<td>tellers at a bank</td>
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| Customer Type:                                                                             |
| End-User                                                                                    |
| Decision Maker                                                                             |
| Influencer                                                                                  |
| Economic Buyer                                                                             |
| Saboteur                                                                                    |

<table>
<thead>
<tr>
<th>Pains / Gains</th>
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<tr>
<td>1. What are their biggest challenges with the current solution?</td>
</tr>
<tr>
<td>-what’s difficult?</td>
</tr>
<tr>
<td>-what annoys them?</td>
</tr>
<tr>
<td>2. What things are they trying to improve?</td>
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Banking Software Example

What are the trends in the banking industry?

Who are the industry analysts?

Are there bank software trade shows?

Is there a banking-industry software consortium?
Hypothesis

Test

Analyze

Pivot/Adjust

Repeat
IS THERE A PATTERN?
Characteristics of Good Hypothesis

- It can be invalidated. The inverse can be tested!

- It is clear, focused, and short.

- It does not test your technology/product

- It helps you learn something about your market or business you did not know
Hypothesis Framework

A [Specific Person] makes [Decision] because of a [Behavior/Belief].
A [Battery Manufactures] prioritize performance characteristics over [cost].
A [Lead Acid Battery Engineers] prioritize charge acceptance over [other performance criteria].
A [Lead Acid Battery Manufacturing Engineers] require a 50% increase in charge acceptance before considering [adopting new technology].
Good or Bad? Example Hypothesis

• Chip makers want improved performance.

• Manufacturing managers at top tier tire plants are strong influencers, but don’t make a purchasing decision.

• Line engineers at mobile carriers like to see data transfer defect detection increase by 35%.

• CFOs at large academic hospitals will need a 150% margin on Medicare procedures to pay costs.
Exercise 2: Craft Strong Hypothesis

A [Specific Person] makes [Decision] because of a [Behavior/Belief].

Write 1-3 hypothesis statements based on your high level goals

Each Team has 4 minutes

Be prepared to share & review with the class!
Testing Your Hypothesis

- Test one thing at a time
- Ask open-ended questions
- Focus on past and current experiences
- Understand why they acted in a certain manner or believed a specific thing
Questions for Validating/Invalidating Your Hypothesis

Example

General Hypothesis - [Quality plant managers] make [day-to-day operational decisions] based on [real time data]

Interview Questions:
- How do you make quality decisions for the plant?
  - Follow-up questions: How often does this occur?
- What type of information do you use to make decisions today
- Tell me about the last time you had to make a decision in the plant based on data?
Questions for Validating/Invalidating Your Hypothesis

**Example**

Measurable Hypothesis - [Quality plant managers] make [75% of their day-to-day operational decisions] based on [real time data]

**Interview Questions:**

- How do you make quality decisions for the plant?
  - Follow-up questions: How often does this occur?

- What type of information do you use to make decisions today

- Tell me about the last time you had to make a decision in the plant based on data?
- Ask about Process
- Ask about actions
- Ask why
- Ask what and how
- Ask about how often the problem occurs

- Ask for opinions
- Ask customer to speculate
- Start with “Would you…”
- Lead customer to give you answer you want
Good Question/ Bad Question

How are you solving X now?  GOOD
What is your biggest challenge with X?  GOOD
Would you adopt a product which did Y?  BAD
What would your dream product do?  OK
Do you think my solution is a good idea?  BAD
Is there anything else that I should have asked?  GOOD
Who else should I talk to?  GOOD
Exercise 3: Draft Interview Questions

1. Draft questions that help validate/invalidate your hypothesis.
2. Draft follow up questions.
3. Don’t draft leading questions.

Each Team has 3 minutes

*Be prepared to share & review with the class!*
Identify the customers
Interview them
Design a Value Proposition

Decision maker
Influencer
Buyers
End user
Saboteur

Quantifiable
Relevant
Specific
Testable
Customer Discovery Goals

1. Identify the biggest issues they have that your solution can address

2. How big (urgent) is the problem?

3. How often do they experience the problem?

4. How “good” does your solution have to be for them to consider changing?
What is Your Value Proposition?

1. What do you do?  Product or Service

2. How do you do it?  Features

3. Why is it important?  Value Proposition
0 Degree Sleeping Bag

PRICE: $359.95
Customer Segments

Person who likes the outdoors

Weekend Hiker

Snow Camper

Back Packer

Car Camper
<table>
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<th>WHAT</th>
<th>HOW</th>
<th>WHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 Degree Sleeping Bag</td>
<td>Key Features</td>
<td></td>
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</table>

- **5" baffle spacing and side wall baffles / helps to keep down from shifting keeping you warmer**
- **PFC-Free 800FP Dridown and 15d nylon fabrics / ultralight weight**
- **Patented Self Sealing foot vent / fast and easy ventilation**
- **Draft-dodger collar / helps prevent drafts**
- **Anti-snag zipper tracks / makes getting in and out easy**

**SURVIVAL**
In-class Exercise – What, how, why?

Identify the following:

• What is that you do?
• How do you do it?
• Why is it important? ← Value Proposition

Each team will have 3 minutes

Be prepared to share & review with the class!
What causes a customer to switch to a new solution?

Happy with current solution

Current Solution = OK
New Solution = Nice to HAVE

Current Solution = BAD
New Solution = Must Have
How big is the market if 100% of relevant customers purchased my product or service?
SAM: How big is my segment?

How many people want and can pay for my product or service?
TM: What is my target?

How large is my target market (in $)?

How many customers can I expect?
Know Your Competition
How will you make money?