

# How do I know if my idea is a good one?

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10

## Top ~~7~~ 10 Reasons Startups Fail

Based on an Analysis of 101 Startup Post-Mortems



<http://www.cbinsights.com/blog/startup-failure-reasons-top/>

**Ask  
your  
Customer!**

# **Wrong Way**

“Death by Demo”

“Here’s my idea. What do you think?”

“How would you solve the problem?”

# **Right Way**

This is called

## **Customer Discovery**

# What is Customer Discovery

- **What** is the **pain/problem**
- **Who** is having the pain/problem
- **How bad** is the pain
- **How** are the “who” currently dealing with it
- **How** is that solution working for them

# Why this is Important

Your idea is.....

a

**Hypothesis**

at this stage

# Best Way to Validate your Hypothesis

**“Get out of the Building!”**

*Steve Blank*

- **Face to face interviews – Best**
- Skype
- Telephone
- Shadowing

On line ~~surveys~~



# How to do this

- Identify key hypotheses/assumptions
- Brainstorm possible questions to prove/disprove hypotheses/assumptions
- Prioritize **5-7 questions** and at least 5-10 backup questions (see Customer Interview Guide)
  - Use questions that are **measurable**
    - E.g. “on a scale of 1-10...”; “how many times in the past three months...”
  - Include questions that are **qualitative**
    - “What do you like most about .....; Least about....”

# Sample Hypotheses

What assumptions do we have that if proven wrong would cause us to fail.

- The problem my customer wants to solve is .....?
- My target customer will be....?
- Why can't my customer solve this today?
- The measurable outcome my customer wants is...?
- I will make money/revenue by doing....?
- I will beat my competitors because.....?
- My biggest financial/technical/engineering ....risk is...?

# Sample Questions

- What are the top 3 challenges related to \_\_\_\_\_? How often do they occur?
- How much time do you spend on those challenges?
- Can you tell me a story about the last time that challenge happened and what you did?
- What, if anything, have you done to solve these challenges?
- What don't you like about the solutions you tried? OR On a scale of 1-10, how would you rates each solution? Why did you give it that number?
- Who has to approve purchases? Do you need any approval to try them?
- Who else should I talk to?

# How to interview

- Plan who you want to interview
  - Demographics that describes your **stakeholders**
    - **Buyers/Decision-makers**
    - **Users**
    - **Influencers (including possible saboteurs)**
  - Where will you find them

# The technique

**15 Minutes**

**5-7 questions**

# Customer Interview Guide

**Segment:**

**Title/Job:**

**Key Hypotheses to test** (what assumptions do we have that if proven wrong would cause us to fail)

**Key Questions to ask** (to prove/disprove the hypotheses)

1 – 5 questions per hypotheses

**Rule: You are not allowed  
to talk about your idea!**

# Get Started

“I am doing some research on XXX. Do you have **15 minutes** to answer a few questions” or I have 5-7 questions...”

- **‘Student Card’** works well
  - May need to say “this is **not a sales call**”
- Start with a few Friends/Friendlies to practice
- Then go after people you don’t know
  - For B-B, C-level is not always the best
- Consider asking
  - **Who else should I talk to?**
  - **What else should I have asked?**



# Hints for Questions

- **Asking job title/position and how long someone has been in the job/position or status** helps you to judge the level of experience (and doesn't count in the '5-7 question quota).
- You will need **a different set of questions** for the different stakeholders.

# Hints for Questions

- Try to **avoid “Have you ever.....?”** Better - “How often in the (pick a relevant time period) have you....?”
- **Careful of “Would you ever....?”** type questions. Instead, try to **frame your question on past behavior** which is a much more reliable predictor of how the customer will actually act.
  - “When was the last time...?”
  - “How many apps have you paid for...?”
  - In the 3 past weeks, which app...s?; how often..? Why?

# Hints for Questions

- The questions are **not a checklist**. They are a prompt to possibly explore another aspect.
- Be open to iterate or **follow up and explore more deeply** on what the interviewee is saying.

# Where the magic happens #1

## **Always ask**

“How are you solving it now (or tried to solve the problem in the past)”

“On a scale of 1-10, how would you rate that solution?”

“Why did you give it that number”.

Write down

- everything they say,
- In the order they are saying it
- In their words.

# Here's Why

- They are giving you the **feature list** – what they view as really important.
- They are giving you the **feature priority**
- They are giving you **marketing language**
- They are giving you deeper **knowledge of the competition**

# Where the magic happens #2

Listen for the **unexpected**.

- If they said something you weren't expecting but seems relevant, ask "tell me more".
- If there seems to be substance
  - Include it in future interviews
  - Go back and ask past interviewees

# Here's Why

This is where **pivots** happen!  
(before you've wasted time and money)

**How Many?**



**Recommended**

**100+**

**Stakeholders**

# Making it Work

- **Keep notes** – you'll forget.
- Stop and **assess periodically**
- **Adjust** questions and plan as needed

# Benefits

- Avoids **unnecessary ‘pivots’** (lost time and money)
- Potential customers are ‘giving’ you the **compelling sales pitch**
- Helps **prioritize** what is most important
- Learn more about the **competition**

# More Benefits

- Get **first hand knowledge** of your target audience
- Can measure degree of **enthusiasm and interest** through observation
- Starts to build the **relationship**
- Helps identify potential **reference customers/pilot participants**
- **Investors (and judges)** will want to know.....

# **Words to Live By**

**Fall in love with the problem....**

**....not your solution!**

# **Words to Live By**

**DON'T SELL WHAT YOU MAKE**

**MAKE WHAT YOU CAN SELL**

**- Steve Blank**

# Best Resource

**“Talking to Humans”**

**“Testing with Humans”**

**Giff Constable**

**Ask yourself the  
business questions.....**



...Is it a **REALLY Big  
Problem?**

# ...Is it a **Really Big** Problem?

- **How many** people or companies have this problem? (Is it a big target market?)
- **How much time or money is spent (or lost)** each year because of this problem? (The more it costs them, the more they are motivated to pay for your solution)
- How well **is their current solution working** for them? (They will happily switch to your solution because their current one isn't working very well.)

# Ask Yourself.....

- Is your solution **10X better** than the alternatives or **3X cheaper**?
- Is it a “**Need-to-Have**” vs “Nice-to-Have?”
- Will it be a big opportunity that **will attract investors**?

**Ask Yourself.....**

**“..... will it scale?”**

# Ask Yourself....

- Do your product/service **margins increase with volume?**
  - COGs
  - Installation/Customization
  - Service/maintenance
  - Staff ratio to sales

# Examples of Businesses/Products that Scale Well

- **Software** (MS Word, Excel, Quickbooks)
- **Apps** (Pandora, Twitter, BudgetSimple)
- **Mass Market** items (My Keepon, FitBit)
- **Hardware** that is standardized or uses standard parts (Air conditioners, remote controls)

# Ask Yourself....

..... How will I **sell** this?

- **How** will this be done?
- **Who** will do this?

Start thinking about this on **DAY 1**



# Customer Segments

## **Phase 1 Customer Discovery**

Is this a big problem that a lot of people have where the current solution isn't working e.g. am I solving the right problem?

## **Phase 2 Customer Validation**

I am solving the right problem. Am I solving it the right way?

## **Phase 3 Customer Acquisition**

Strategy and methods for getting customers to buy your product or service at a price where you can be profitable.

# Customer Validation

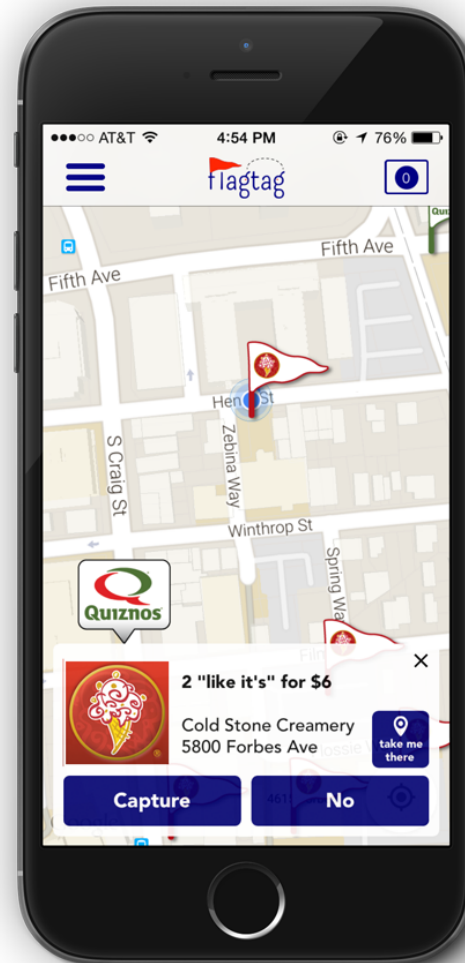
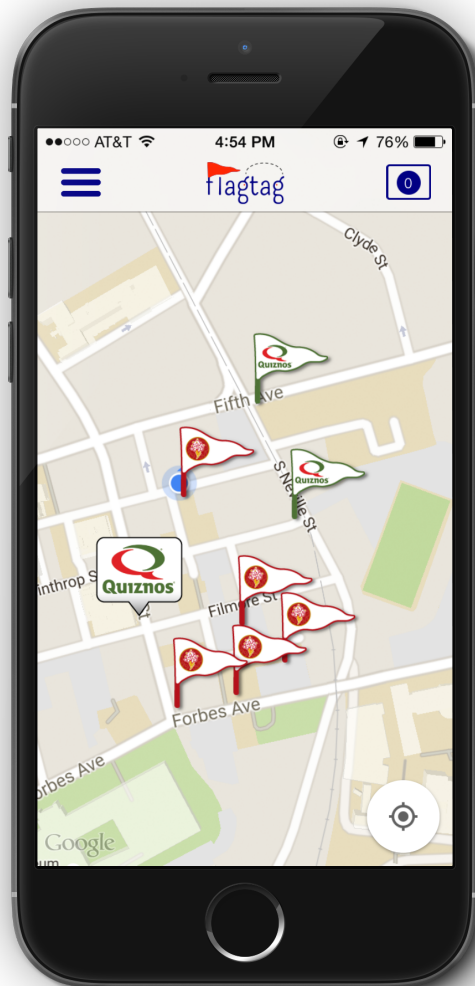
- Go back to those you interviewed who were the most interested or helpful
- Ask for their feedback on your proposed solution

**At least one will ask if they can try it!**

# Business to Consumer (B to C) Case Study



Users earn real-life prizes in a gamified, augmented reality, Easter egg hunt

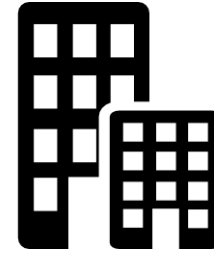


# How we add value



Consumers  
(targeting students)

- Find discounts
- Discover new businesses
- Have fun while saving via gamified incentives



Businesses

- Leverage an efficient marketing scheme
- Bring new faces through the door
- Receive analytics with respect to user habits and coupon efficiency



# Customer Discovery Survey Results

## **Key Demographics for Student Stakeholders**

CMU: 100 Interviewed – 56 male, 44 Female

Pitt: 50 Interviewed – 25 Male, 25 Female

Chatham: 50 Interviewed – 3 Male, 47 Female

(Later interviewed 100+ more at Carlow,  
Duquesne and Point Park Universities)



# Sample questions

*“On a scale of 1-10, how likely are you to deviate from your go-to restaurant for a better deal at a competing restaurant?”*

*“On a scale of 1-10, how difficult would you say it is for you to organize a bunch of your friends in a group activity or outing?”*

*“How many apps on your phone have you paid for?”*

*“When was the last time you played CTF?”  
(why not more often?)*

*“Would you play CTF if it were an IM here?”*





# Key Findings

*“On a scale of 1-10, how likely are you to deviate from your go-to restaurant for a better deal at a competing restaurant?”*

- Takeaway: College students are more likely to seek a deal than commit to a restaurant.
- Product Design: Make sure a key component to the game is interaction with businesses.
- Marketing Message: “Capture the flag, but also capture great deals”



# Key Findings

*“On a scale of 1-10, how difficult would you say it is for you to organize a bunch of your friends in a group activity or outing?”*

Takeaway: Organizing groups of friends is a pain point for college students

Product Design: The game setup in the app needs to be intuitive so it is a helper, not a pain.

Marketing message: “You make the friends; we’ll make sure they are organized.”



# Key Findings

*“How many apps on your phone have you paid for?  
What are they? (if answered yes).”*

Results:

No females at CMU, Pitt or Chatham paid for any apps.

22% of males at CMU and Pitt had any paid apps on their phones – all were for games

Takeaway: Fees from app is not part of the revenue model.  
(nor were they planning on it –just wanted to check.)



# Key Findings

*“When was the last time you played CTF?” (why not more often?)*

Takeaway: Students had not played recently and the reason was because of lack of time.

Product Design: Spread game over longer time period where you don't have to commit a block of time.

Marketing Message: “Play on your own schedule.”



# Key Findings

*“Would you play CTF if it were an IM here?”*

Responses: CMU: 80% - yes, 10% - maybe  
Pitt: 48% - yes; 24% - maybe  
Chatham: 2% - yes, 98% - no

Conclusions:

- Key was Time, Friends, .... And Incentives
- Chatham was not an active group

# Customer Discovery

What they did right:

- Interviewed a large number of students from a variety of campuses
- Results helped to significantly restructure initial game design
- Derived key marketing messages from the interviews that were successful in getting students to download the app

# Customer Discovery

Where they missed the mark

- Misinterpreted the concern for time to mean ‘design a shorter game time’ rather than less time for games at all.
- Asked an ‘aspirational’ question i.e. “*Would you play.....?*” Responders meant well but simply didn’t act as they said they would.



# What They Learned

After going through AlphaLab and launching the app:

- Students:
  - Very willing to download the app and open it
  - Mostly interested in capturing the flag for the discounts but not at all in the game aspect.
  - A little slow to redeem the coupons (flagtag is paid for each redemption)
- Businesses
  - Very well received
  - Most effective of all the coupon options they had tried by 3X





# End Result

## Fall 2016

- Verified the business model
- Revised the app
  - Simply capture coupons – no game aspect
  - Provided an incentive to redeem the coupons more quickly

Relaunched Spring 2017

Folded Summer 2017

# Business to Business (B to B) Case Study



# Proposed Product

- **Add-on hybrid system** for tractor trailers
  - Uses **regenerative braking to capture power** when the vehicle is slowing down that can be reused to accelerate.
- **Value proposition to the customer:**  
**Reduces fuel consumption** by over 30% with an **ROI of less than 1 year.**



# Sample Questions

- **How much** on average do you spend on fuel? % of annual budget?
- Have you done **analysis on fuel usage** that you can share?
- What are you **currently doing now** to reduce your fuel costs?
- On a **scale of 1-10, how well** are those techniques working?
- **Why** did you give each that number?



HYLIION

# Interviewed

- Fleet **managers**
- Fleet truck **drivers**
- Independent truck **drivers**
- Trailer **manufacturers**
- **Mechanics** that service the fleet
- Companies with **proprietary fleets**
- Industry **association staff**



# HYLIION Where did they find them

- Industry conventions
- Truck stops
- Fleet owners' headquarters
- Trailer sales offices
- Telephone

# Findings

- **6 million** trailers in the USA
- Each trailer averages 6.5 mpg = **\$85,000 fuel costs per year per trailer**
- **52 Billion gallons** of fuel consumed yearly
- **31% = \$46 B in potential fuel savings**
- **\$25k per unit x 6M trailers = \$150B potential market**



HYLIION

# Findings

- Largest value/ROI for **long-haul fleets**
- 15% of fuel is used to **run the cab at night** for heat/AC and electronics
  - Shaking cab results in **poor sleep** – which can lead to accidents
  - (This was the ‘outlier’) that helped sell management
- **Less wear and tear** on the diesel engine
- **Reduced emissions**





HYLIION

# Conclusion

**Big Problem**

**Big Market**

**Great Product**

**Great Business**

Pivot from B to B  
to  
B to C

**Case Study**

# BeatBots



# BeatBots

## Initial Hypothesis

- Therapy tool for therapists who work with **severely autistic** children
- Price: \$25k (includes hardware and software)
- Target audience: **Clinics that specialize** in therapy for severely autistic children

# BeatBots

Product worked extremely well as a therapy tool  
to engage highly autistic children

However.....

Size of Target Market: **100 clinics worldwide**

**Great Product**  
**Lousy Business**

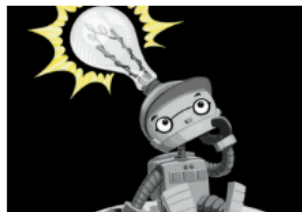
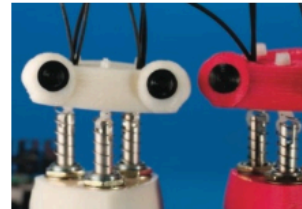
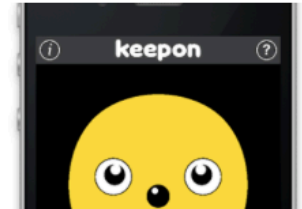
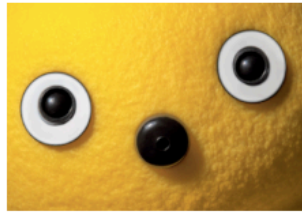
# The start of the pivot

<https://www.youtube.com/watch?v=nPdP1jBfxzo>

# BeatBots

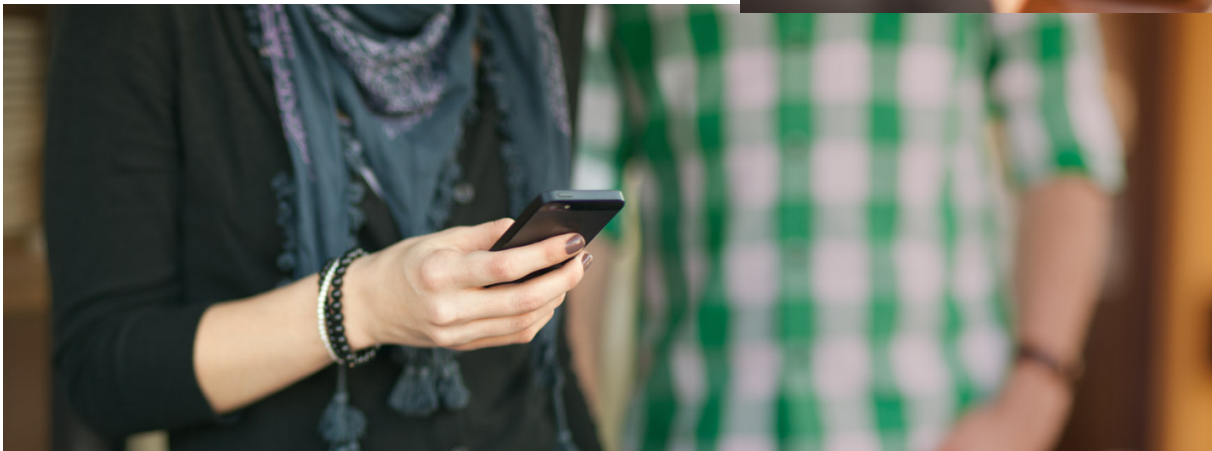


**Pivoted** to a retail product for mass market for \$50.  
Licensed it a toy company that would manufacture, package and get BeatBots on the shelves of major retailers.





What investors are looking for



# Why wait<sup>®</sup> was a good investment

“ We want to **invest in large markets**, ...if you have a fantastic team with fantastic products but ..... it's in a small market, there's a smaller type of outcome that can happen e.g they're swimming in a smaller pond. If you have a big and expanding market, it's great to have a great team and product, but if you don't, you still have a chance. “

“.....We focus on **investing in trends shaping the landscape** over the next 10 years. **Casual dining is a multi-hundred-billion business in the U.S. alone**. Everybody's got to eat.”

“.....What they're doing **solves an acute point**, waiting to get in line, waiting to get a check. They have a very elegant solution.”

*Nick Solaro of Drive Capital, a Columbus, Ohio-based \$250M VC fund on their \$10M investment in NoWait in May 2014 (Source: Pgh Business Times)*

**Sold** to Yelp for **\$40M**

# Carnegie Mellon University

## Swartz Center for Entrepreneurship

### Programs

- **Project Olympus Incubator Program** (students, faculty, alumni, staff)
- **Innovation Scholars** (undergraduates)
- **James R. Swartz Entrepreneurial Fellows** (graduate students)
- **Innovation Fellows** (senior PhD students and postdocs)
- **NSF I-Corps Site** (research commercialization)
- **Venture Bridge Accelerator program** in S.V (all)

### Workshops & talks

- **CONNECTS** (all students)
- **Inside-Out: Research Commercialization** (faculty, PhDs and postdocs)
- **Swartz Entrepreneurial Leadership Series** (all)

### Events & competitions

- **Bootcamp** (September every fall)
- **LaunchCMU** (showcase for investors and entrepreneurial alumni)
- **Project Olympus Show & Tell** (showcase for community)
- **Global Entrepreneurship Week** (November before Thanksgiving)
- **McGinnis Venture Competition** (March every spring)

### How to connect with us:



[cmu.edu/olympus](https://cmu.edu/olympus)  
[cmu.edu/entrepreneurship/](https://cmu.edu/entrepreneurship/)



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**Q&A**

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