

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

Kit Needham

**Carnegie
Mellon
University**

Swartz
Center for
Entrepreneurship

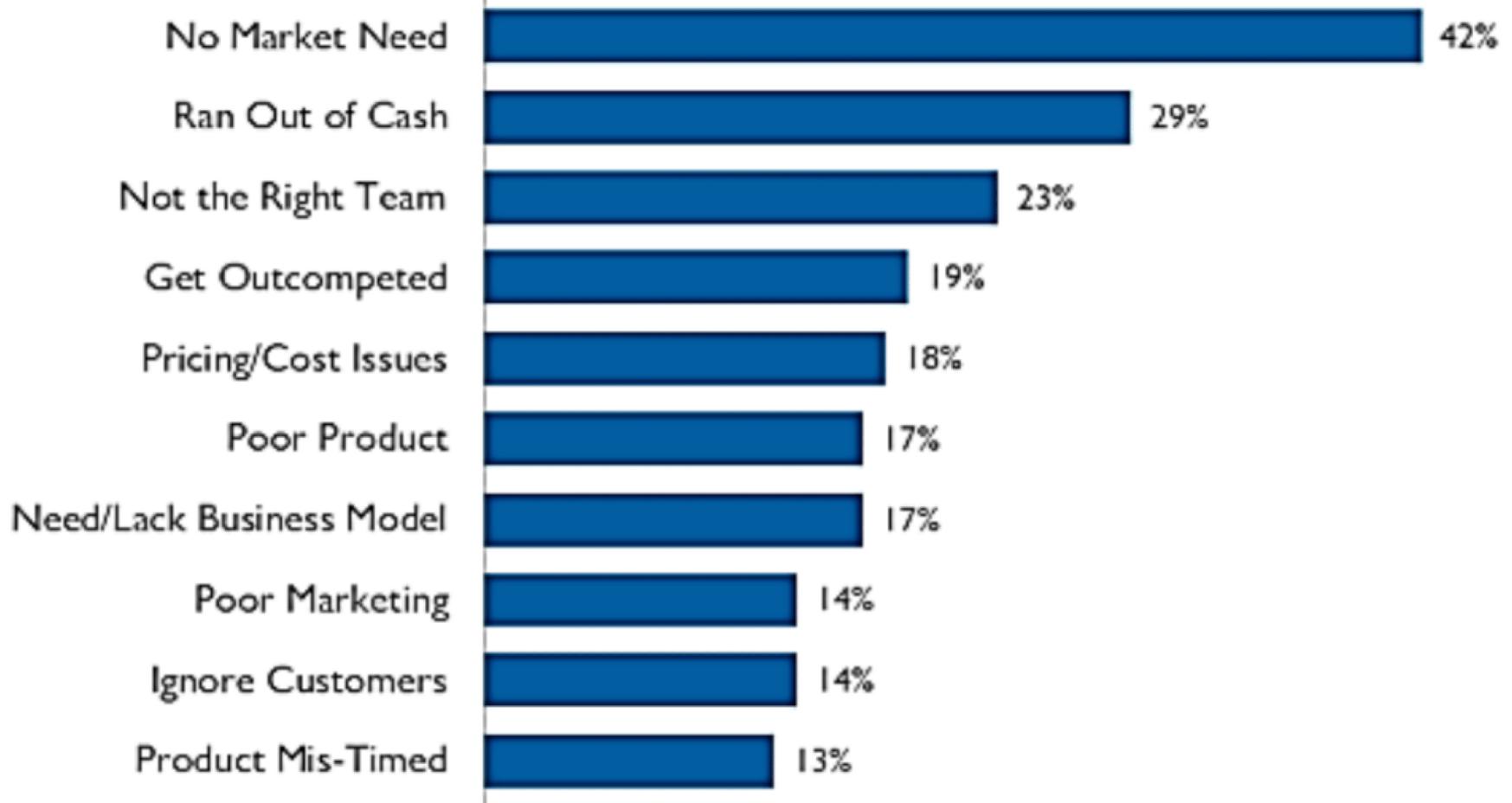


**Ask
your
Customer!**

10

Top 10 Reasons Startups Fail

Based on an Analysis of 101 Startup Post-Mortems



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

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 or
- **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
- Shadowing
- Telephone

~~On line surveys~~

The technique

15 Minutes

5-7 questions

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

How to do this

- Identify key hypotheses.
- Brainstorm possible questions to prove/disprove hypotheses.
- Prioritize **5 questions** and 5 or more 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....”
 - Scale question “Why did you give it that number”
- **Follow up on new thoughts (outliers)**

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/engineeringrisk is...?

Sample Questions

- What is a typical day like on your job?
- What are the top 3 challenges? 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 rate 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?

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

How to do this

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

Get Started

“I am doing some research for XXX. Do you have **15 minutes** to answer a few questions”

- May need to say “this is **not a sales call**”
- **‘Student Card’** works well
- Start with 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

- Try to **avoid** “**Have you ever.....?**”
Use ”How often in the past (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.

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 question' quota).
- You will need **a different set of questions** for the different stakeholders.

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)
- Get **first hand knowledge** of your target audience
- Can measure degree of **enthusiasm and interest** through observation
- Potential customers are 'giving' you the **compelling sales pitch**
- Helps **prioritize** what is most important
- **Investors** will want to know.....

Words to Live By

DON'T SELL WHAT YOU MAKE

MAKE WHAT YOU CAN SELL

- Steve Blank

Ask yourself.....

...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.)

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.

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?

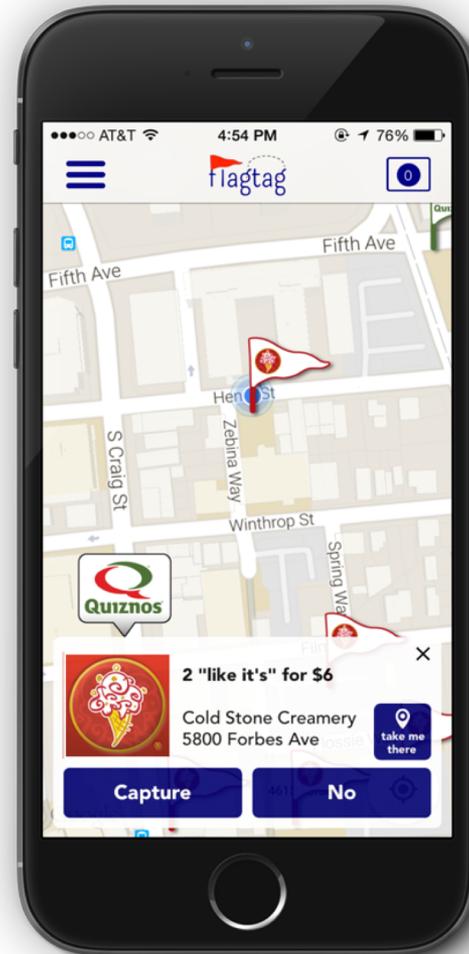
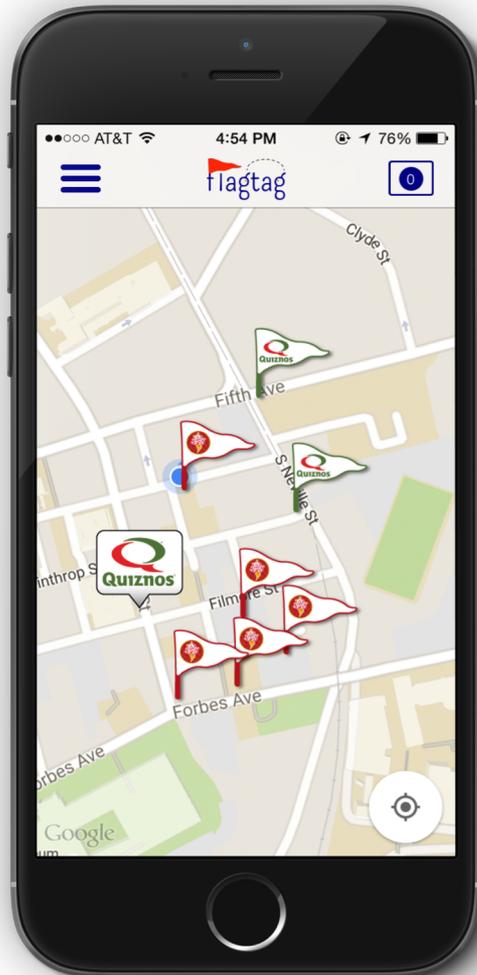
Start thinking about this on **DAY 1**

Business to Consumer
(B to C)
Case Study

The logo features the word "flagtag" in a blue, rounded, lowercase font. The letter 'f' is stylized with a red flag attached to its top. The letters 'g' and 'g' have red dots in their upper loops. A dashed black semi-circle arches over the letters 'g', 't', and 'a'.

flagtag

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



Flagtag 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 a bonus 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

B to B Example



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

BeatBots



BeatBots

- 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

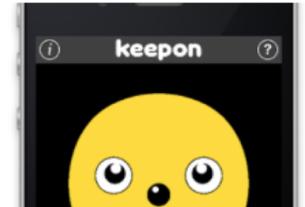
- Therapy tool for therapists who work with severely autistic children
- Price: \$25k (includes hardware and software)
- Target audience: Clinics that specialize in therapy for severely autistic children

Size of target audience: **100 clinics**

Great Product; Lousy Business

BeatBots







Why 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)

Q&A

kit@cs.cmu.edu