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

Kit Needham
Director, Project Olympus
Asst Dean for Entrepreneurial Initiatives
Ask your Customer!
Top 5 Reasons Startups Fail

1. No Market Need: 42%
2. Ran Out of Cash: 29%
3. Not the Right Team: 23%
4. Get Outcompeted: 19%
5. Pricing / Cost Issues: 18%

https://www.cbinsights.com/research/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
Customer Relationship Phases

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.
What is Customer Discovery

Phase I

- **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
Methodology is Hypothesis Driven

- Who is the customer?
- What is the product?
- Why will they buy it?

- What items must be true such that the business thesis hold (must be testable)
- Test during customer discovery
- Modify business thesis based on customer input
Start with your Business Thesis

- Who is the customer?
- What is the product?
- Why will they buy it?

- What items must be true such that the business thesis hold (must be testable)
- Test during customer discovery
- Modify business thesis based on customer input
What is a Business Thesis

- Who is the customer?
- What is your product/solution?
- Why will they buy it?
Who is/are Your Customer(s)?

- Ecosystem of people you need to understand, satisfy and appeal to in order to buy your product
- Also called **Stakeholders**
Who is/are Your Customer(s)?

- Ecosystem of people you need to understand, satisfy and appeal to in order to buy your product
- Also called Stakeholders
- Most important are generally the users and buyers
Creating a Business Thesis

• **Who is the customer?**
  - This is a person with a role and/or title (e.g. not a hospital, university....)
  - “This specific customer will buy? lease? license?....

- **What is your solution?**
  - What specifically are your proposing to offer?
  - ....my product/service that does (this specific thing(s))....”

- **Why would they buy it?**
  - What does the customer value? What problem does the customer want to solve? This is often called **The Value Proposition**
  - “......that will reduce the cost by X? Increase sales by Y? Reduce the error rate by Z? Allow the customer to access in one-step....”
Value Propositions – Alert!

Customers/stakeholders are not buying your technology...

Customers/Stakeholders are buying a solution to their problem!
Value Propositions

Questions to Ask Yourself

• What do we do for our customer/stakeholder that they value?
• What really matters to our customer/stakeholder?
• What problem are you solving for our customer/stakeholder?
• What job is our customer/stakeholder trying to get done?
What Makes a Great Value Proposition?

**Performance:** do something better than it’s been done before

**Increase Profits:** charge more or increase margins

**Cost Reduction:** lower your customer’s costs

**Customization:** more closely align a service or product to an individual customer need

**“Getting the Job Done”:** making a customer’s non-core task or problem go away

**Newness:** solving a problem people don’t yet know they have
What Makes a Great Value Proposition?

**Price**: offering an existing service or product for a lower cost

**Risk Reduction**: reducing or eliminating operating risks

**Accessibility**: eliminating barriers to access

**Convenience & Usability**: making something currently difficult to get easier to obtain or use

**Brand & Status**: a signaling tool for your customers

**Design**: aesthetic pleasure
Exercise #1
Create Your Business Thesis

- **Who is the customer?**
  - This is a person with a role and/or title (e.g. not a hospital, university....)
  - “This specific customer will buy? lease? license?........

- **What is your solution?**
  - What specifically are your proposing to offer?
  - ....my product/service that does this specific thing(s)....”

- **Why would they buy it?**
  - What does the customer value? What problem does the customer want to solve? This is often called **The Value Proposition**
  - “.....that will reduce the cost by X? Increase sales by Y? Reduce the error rate by Z? Allow the customer to access in one-step....”
Hypotheses Test the Business Thesis

- Who is the customer?
- What is the product?
- Why will they buy it?

- What items must be true such that the business thesis hold (must be testable)
- Test during customer discovery
- Modify business thesis based on customer input
Business Hypotheses

• Your Business Thesis has some assumptions
• These assumptions must be true for your business to succeed.

How do you know if they are true?

1. Develop Business hypotheses
2. Develop questions to test these hypotheses
What Makes a Good Hypothesis

1. Clear and concise
2. Specific
3. Testable/measurable
Sample Hypotheses

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

• The problem my stakeholder wants to solve is .....?
• My target stakeholder will be....?
• Why can’t my stakeholder solve this today?
• The measurable outcome my stakeholder wants is...?
• I will make money/revenue by doing....?
• I will beat my competitors because......?
• My biggest financial/technical/engineering ....risk is...?
• My stakeholder has money and would be willing to buy....
How to Prepare to Test Your Hypotheses
Prepping

• Identify possible customer segments and specific stakeholders
• Create a Business Thesis for each customer/stakeholder in that segment (start with highest priority)
• Develop hypotheses you need to test (what has to be true for your business to be successful)
• Develop 5-7 key priority questions for each stakeholder to test the hypotheses.
Identify possible segments

• Are there multiple industries that could use your product/service?
• Would your product or service be solving the same or different problems in each segment?
• Is your product/service a ‘two-sided” business e.g. you need two different segments to participate for this business to succeed? (Examples – Air B&B, Open Table, Etsy, Hertz.....)

You will need to prioritize which segment to pursue first based upon market size, how bad the problem is, competition, etc.
Who Is Your Customer/Stakeholder?

Ecosystem of people you need to understand, satisfy and appeal to in order to buy your product.
How to do this

• Write down key hypotheses/assumptions
• Brainstorm possible questions to prove/disprove hypotheses/assumptions
• Identify what stakeholders you need to interview
• 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...?” “what are the steps you need to take to....?” “how much do you pay for.....”
  • Include questions that are qualitative
    • “What do you like most about .....; Least about....” ”Can you give an example of.....”
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
Sample Hypotheses

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

• The problem my stakeholder wants to solve is .....?
• My target stakeholder will be....? 
• Why can’t my stakeholder solve this today?
• The measurable outcome my stakeholder wants is...?
• I will make money/revenue by doing....?
• I will beat my competitors because......?
• My biggest financial/technical/engineering ....risk is...?
• My stakeholder has money and would be willing to buy....
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 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?
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

• 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 apps...?; how often..? Why?
Exercise #2
Testing Your Hypothesis

• For your chosen segment, pick one customer/stakeholder.
• Create a hypothesis to test. (What must be true for the stakeholder for your business to succeed).
• Identify 1-2 questions to test that hypothesis
Exercise #2 Template

- Customer Segment

- Business Thesis to test
  - Who
  - Your solution
  - Why would they buy it (value proposition)

- Stakeholders

- 1-2 Questions (more if you have time)
Who 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?
Where to Find them

Start with people you know directly
Olympus Domain Experts
Ask local organizations (LS examples)
  • Jewish Health Foundation
  • Innovation Works/ AL Health
  • LifeX Office Hours Experts
  • UPMC Enterprise Solutions
LinkedIn (look for alums)
National Organizations
Speakers or authors
Search “Healthcare Industry Maps”
FASHION

The Fastech Ecosystem

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The chemical industry value chain

The chemical industry enables our modern living standards through the conversion of basic energy into consumer products. The underlying factors that lead to success for companies in the chemical value chain are low-cost feedstocks, high levels of operational efficiency, continuous innovation of products and processes, and robust growth in the end markets the industry serves.

- **Basic Chemicals**
  - Olefins (ethylene, propylene, butylene)
  - Aromatics (benzene, toluene, xylenes)
  - Chlor-Alkali (chlorine, caustic soda)
  - Methanol
  - Others (e.g., ammonia, phosphorous)

- **Chemical intermediates**
  - Commodities
  - Differentiated commodities
  - Technical specialties

- **Formulated products & product materials**
  - Plastics & Engineering Resins
  - Extruded films, pipes, profiles, coatings, sheets, foams
  - Blow-molded parts
  - Injection molded parts
  - Composites
  - Synthetic Fibers
  - Rubber Products
  - Paints & Coatings
  - Adhesives & Sealants
  - Lubricants
  - Water Treatment Products
  - Cleaning Products
  - Industrial Chemicals
  - Flame Retardants
  - Many others...

- **Customers of the chemical industry**
  - Automotive/transportation
  - Consumer products
  - Packaging
  - Building & construction
  - Recreation/sport
  - Industrial
  - Medical
  - Pharmaceuticals
  - Personal care
  - Textiles
  - Electrical/electronics
  - Aircraft/aerospace
  - Business equipment

Source: IHS
# Renewable Fuels Association

## Producer Members
- Absolute Energy, LLC
- Ace Ethanol LLC
- Adkins Energy LLC
- Aemetis, Inc.
- Al-Corn Clean Fuel, LLC
- Badger State Ethanol, LLC
- Big River Resources West Burlington, LLC
- Butamax Advanced Biofuels, LLC

## Associate Members
- Advanced Fuel Dynamics
- AgMotion, Inc.
- Applied Material Solutions Inc.
- Barchart
- BASF Enzymes LLC
- BetaTec Hop Products, Inc
- Bion
- Buckman
NAATBatt International

Advanced Battery Business Directory
Search for products and services from the leading companies in the North American advanced battery industry

INSTRUCTIONS
Use this page to search for advanced battery-related products and services in which you have an interest from among NAATBatt member companies. You may search by any or all of the following methods:

1. In Part 1, check any or all of the Product Category boxes that are relevant to your search.
2. In Part 2, enter in what you are looking for. You may leave Part 2 blank.
3. Hit the "Submit Search" button at the bottom of the page.

Check any or all of the following boxes that may be relevant to your search:

- Materials and Composites
  - Zinc
  - Lithium Brines
  - Spodumene
  - Lithium Carbonate
  - Lithium Hydroxide
  - Graphite-Natural
  - Graphite-Synthetic
  - Silicon Anodes

- Advanced Battery Concepts
- American Battery Solutions
- American Manganese Inc.
- Aután
- BIC
- Bitrode Corporation
- American Battery Solutions
- Amphenol Advanced Sensors
- Eclipse Energy
- DuPont
- Durr Megtec
- Electric Applications Incorporated
- Everledger
- Forge Nano Inc.
- Global Battery Solutions LLC
- Indiana Economic Development Corporation
- JAKERTECH
- King County - Metro Transit
- Li-Cycle Corp.
- Lithion Recycling
### Payment Ecosystem Diagram

Payment ecosystem demystified. Where...
medium.com

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**THE PAYMENTS ECOSYSTEM: Everything you ...**
businessinsider.in
Smart Traffic Ecosystem Diagram
About

Founded in 2007, The Antibody Society is an international, non-profit association representing individuals and organizations involved in antibody-related research and development.

Our Adaptive Immune Receptor Repertoire Community is a research-driven group that is organizing and coordinating

CAREER CENTER
How to do Interviews to test your hypotheses
Best Way to Validate your Hypotheses

“Get out of the Building!”

Steve Blank

- Face to face interviews – Best
- Zoom/Skype
- Shadowing
- Telephone/Facetime

Online surveys
The technique

15 Minutes

5-7 questions
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?
Best Resources

“Talking to Humans”
“Testing with Humans”
by
Giff Constable

Premium Version of LinkedIn
Hints for Questions

• The questions are **not a checklist**. They are a prompt to possibly explore another aspect.

• Be open to iterate and **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)
B to B Case Study
RistCall
RistCall Business Thesis

Who is the customer: Hospital Administrators will.....

What is my solution: ....lease the Ristcall Smart Watches (that let patients call for aid from anywhere and nurses receive immediate notification) and response time tracking platform ......

Why will they buy it: ......in order to reduce the number of injuries patients incur when not responded to quickly (within a certain time frame?)
RistCall Hypotheses

- Slow response leads to serious and expensive injuries
- Nurses are not responding faster because of lack of awareness that the patient needs help
- Hospital Administrators want (would pay for) a new product or service to reduce injuries
- Hospital Administrators want (would pay for) data on # of requests and response time
How RistCall Tested the Hypotheses

Identified potential target segment(s)
- Hospitals
- Nursing Homes

Identified potential stakeholders in target segments (these are people with titles/jobs)
- Users: Nurses and Patients
- Influencers: Patient’s families,
- Recommenders: Nurses, Patients, Nurse Administrator
- Decision Maker/Economic buyer ?; Insurance Companies?
- Saboteur (Potential): IT Manager

Used Industry Survey Data to learn the size of the problem
How RistCall Tested the Hypotheses

- On site “shadowing/ observing”
- Interviewing in-person using hypothesis-validating questions.
- Asking who else to interview

Different set of hypothesis and questions for different stakeholders
- Patients
- Nurses
- Nurse Schedulers
- Patients’ family/caregivers
- Insurance companies
- Doctors
- Buyers/Decision Makers
- Hospital CFO/ Accountants
- IT Manager
Sample Hypotheses Testing Questions

Hypothesis: Slow response leads to serious and expensive injuries

Stakeholder: Nurse Administrator (Staffing scheduler)
- How do you learn that a patient needs help? (current solution)
- What do you like most? What do you like least? (competitive assessment)
- How often in the past week was the Response Platform unmanned because the nurse was helping a patient? (Follow up from the answer to the first question; measurable)
- Can you give me an example of a recent issue because no one quickly responded? (Qualitative)
- Who else should I talk to? (may be other stakeholders you need to talk to that you don’t know about)
Sample Hypotheses Testing Questions

Hypothesis: Nurses are not responding faster because of lack of awareness that the patient needs help

Stakeholder: Nurses
- How do you learn when a patient needs attention? (current solution)
- On a scale of 1-10, how is that system working for you?
- Why did you give it that number? (what they like most/least about the current solution, also gives you the features they value or are missing)
- What happens when a patient injures him/herself? (Maybe ask about a recent example)
Sample Hypotheses Testing Questions

Hospital Insurance/Cost Manager: Slow response leads to serious and expensive injuries

Stakeholder: CFO/Account Management
- What happens when patients injure themselves while in hospital?
- Who pays for these injuries?
- In the past month, can you give me an idea of how many times this occurs? Why?
- What have you tried to reduce the injuries or improve response time?
- What were the results?
RistCall Shadowing, Interview and Research Learnings from Customer Discovery

- It’s a $1.2B annual problem for hospitals (secondary research)
- Injuries occur when patients are not responded to within 2.5 minutes.
- Insurance companies don’t reimburse hospitals for on-site injuries.
- Medicare is beginning to reimburse hospitals in general based upon Patient Satisfaction ratings.
- Hospitals were actively seeking ways to improve their ratings.
- Patient Satisfaction Manager was a huge influencer/recommender.
- Nursing homes have the need but not the financial incentive.
- IT personnel don’t care – RistCall only accessed existing Internet.
- The buyer/decision maker was the CFO.

Hospitals were willing to pay $5k to test RistCall!
RistCall’s Revised Business Thesis

Who: CFO/Hospital Administrators will.....

Solution: ....lease RistCall’s smart watches and platform.....

Why will they buy it: ......in order to reduce the number and cost of injuries that patients incur when not responded to quickly 2.5 minutes and increase patient satisfaction ratings.
How Many?
Recommended

100+

Stakeholders
Making it Work

- **Keep notes** – you’ll forget.
- **Stop and** **assess periodically**
- **Modify Business thesis** based upon feedback
- **Adjust** questions and who to interview 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!
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 now know I am solving the right problem. Am I solving it the right way?

Phase 3  Customer Acquisition
What do I know about the strategies and methods for getting customers to buy my product or service at a price where I 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!
Project Olympus

Startup Incubator for CMU
One page application
Dedicated EIR
Personalized Work plan

‘In business’ since 2007
1200+ startup ideas
$760M+ follow on funding
18 exits
Resources

Join Project Olympus

• www.cmu.edu/Olympus
• Entrepreneurship Resources

- NSF I-Corps HUB
- Olympus Incubator Program
  - Customer Discovery Kickstart
  - About Olympus Incubator Program
  - Project Olympus Entrepreneurs-in-Residence
- Entrepreneurship Resources
- Domain Experts
- Startups at Project Olympus
- Project Olympus Successes
- Olympus Show & Tell
- Spark Grants
Programs

Customer Discovery Kickstart
Attend Information Sessions
- Friday Sept 16th at 2-2:30 pm
- Monday Sept 19th at 4-4:30 pm

NSF ICorps Regional and National Programs
Appendix

1. Competitive Analysis (80)
2. Ask Yourself ...(after Customer Discovery and Competitive Analysis) (87)
3. FlagTag: Business to Consumer (B to C) Case Study (96)
4. Hyliion: Business to Business B to B) Case Study (111)
5. Beatbots: Pivot from B to B to B to C Case Study (119)
6. What Investors are looking for (125)
Competitive Analysis
Any way the customer is solving the problem now is competition.
DIRECT vs INDIRECT

DIRECT – similar products and services

INDIRECT – solving same problem for same target market with a different product or service
Who are Uber’s competitors?

Direct?

Indirect?
<table>
<thead>
<tr>
<th>Feature 1</th>
<th>Feature 2</th>
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<td>Competitor 3</td>
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<td>Competitor 4</td>
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</tbody>
</table>
# Examples of Features

- Price
- Benefits
- Quality
- Durability
- Image/style
- Service
- Warranties
- Location
- Convenience
- Sales/Distribution
- Ease of Use
- # of features
- Type of features
- Wow factor
- Size/Weight
- Availability
- Security
- Safety
- Endorsements
- Certifications
**Example of Detailed Analysis**

### Competitive Communication Audit Sample: B2B Integration Market

<table>
<thead>
<tr>
<th>Company</th>
<th>Tagline</th>
<th>Main Positioning</th>
<th>Website Title</th>
<th>Website Meta Description</th>
<th>Twitter profile</th>
<th>Google Adwords</th>
<th>LinkedIn</th>
<th>Top SEO Key Words</th>
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<tbody>
<tr>
<td><strong>Liaison</strong></td>
<td><strong>Flexible Cloud Integration and Data Management Leader</strong></td>
<td>Liaison Technologies is a global integration and data management company. We provide innovative solutions to integrate, transform, harmonize, manage and secure critical business data on premise or in the cloud.</td>
<td>Liaison Technologies - Data Integration - Transformation - Integration - Management - Security.</td>
<td>Moving, managing and transforming data with cloud integration managed services &amp; data management solutions. Secure data integration and management on premise and in the cloud.</td>
<td>Liaison Technologies provides cloud-based enterprise application and B2B/EDI integration managed services, strategic consulting, cloud-based master data management, security and data transformation solutions. Reducing business costs and driving operational efficiencies on premise or in the cloud.</td>
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<td><a href="#">EDI integration</a>, <a href="#">EDI</a>, <a href="#">EDI integration</a>, <a href="#">Data Transformation</a>, <a href="#">EDI Editor</a>, <a href="#">EDI Viewers</a>, <a href="#">B2B integration</a>, <a href="#">B2B edi</a>, <a href="#">Full edi</a>.</td>
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<tr>
<td><strong>Axway</strong></td>
<td><strong>Business in Motion</strong></td>
<td>Axway, a market leader in providing the best of the data. A global software and services company with more than 10,000 public and private-sector customers in 150 countries.</td>
<td>Axway: Governing the flow of data [Axway - Global]</td>
<td>Axway is a cloud integration, API, and identity management software provider. Custom software and services empower customers to govern the flow of data.</td>
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<tr>
<td><strong>E2open</strong></td>
<td><strong>The Leader in Collaborative Planning &amp; Execution</strong></td>
<td>E2open is the leading provider of cloud-based, on-demand software solutions enabling enterprises to plan, manufacture, sell, and distribute products more efficiently through collaborative planning and execution across global trading networks.</td>
<td>E2open - Welcome to the E2open Business Network</td>
<td>E2open is the leader in collaborative execution, delivering cloud-based, on-demand software solutions for collaborative planning and execution across global trading networks.</td>
<td>E2open is the leading provider of cloud-based, on-demand software solutions enabling enterprises to plan, manufacture, sell, and distribute products more efficiently through collaborative planning and execution across global trading networks.</td>
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<td><strong>Pervasive</strong></td>
<td><strong>Take Action on Big Data</strong></td>
<td>Pervasive transforms big data into business value for any organization—enabling enterprises to process, manufacture, sell, and distribute products more efficiently through side-by-side execution across global trading networks.</td>
<td>Pervasive</td>
<td>Pervasive combines big data and business intelligence to make better decisions and achieve its goals.</td>
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Ask yourself......
...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**
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
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?”
“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.)
“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 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
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?
Interviewed

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

Pivoted to a retail product for mass market for $50 and licensed it a toy company that would manufacture, package and get BeatBots on the shelves of major retailers.
What investors are looking for
Why **noWait** 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
Q&A

kit@cs.cmu.edu