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

Kit Needham

Director, Project Olympus

Asst Dean for Entrepreneurial Initiatives

Carnegie Mellon University
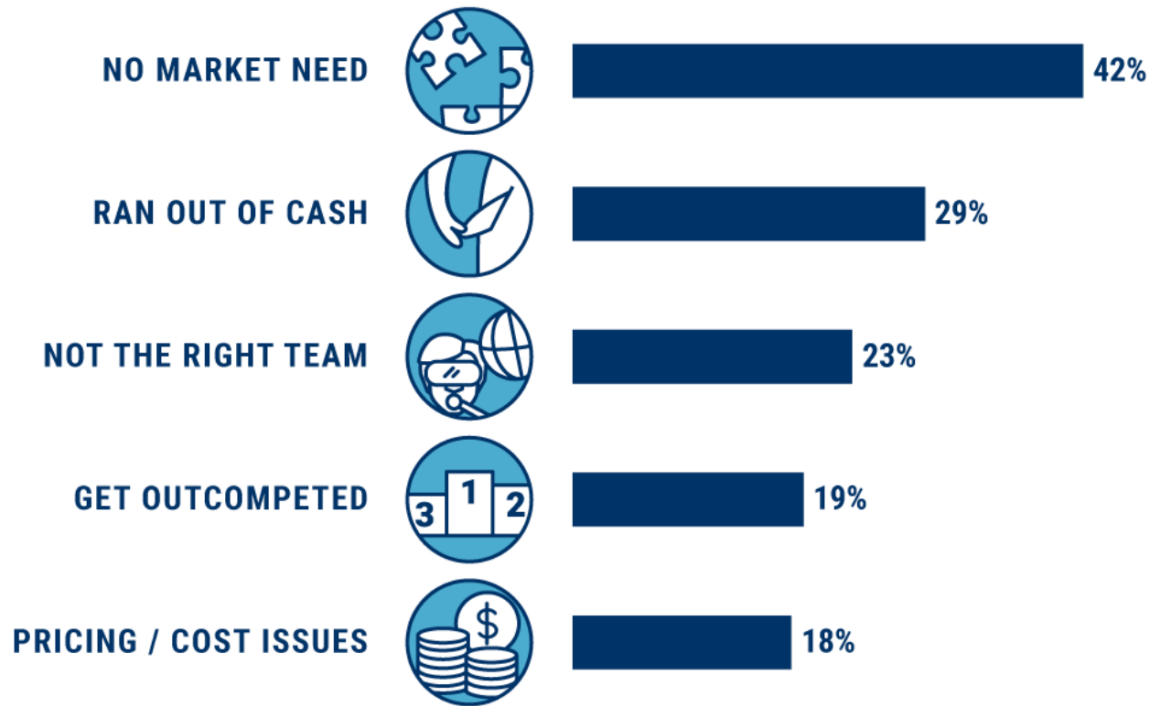
Swartz Center for Entrepreneurship

OLYMPUS

Ask your Customer!

Top 5 Reasons Startups Fail

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

Now that I know I am solving the right problem, I am solving the right problem. Am I solving it the right way?

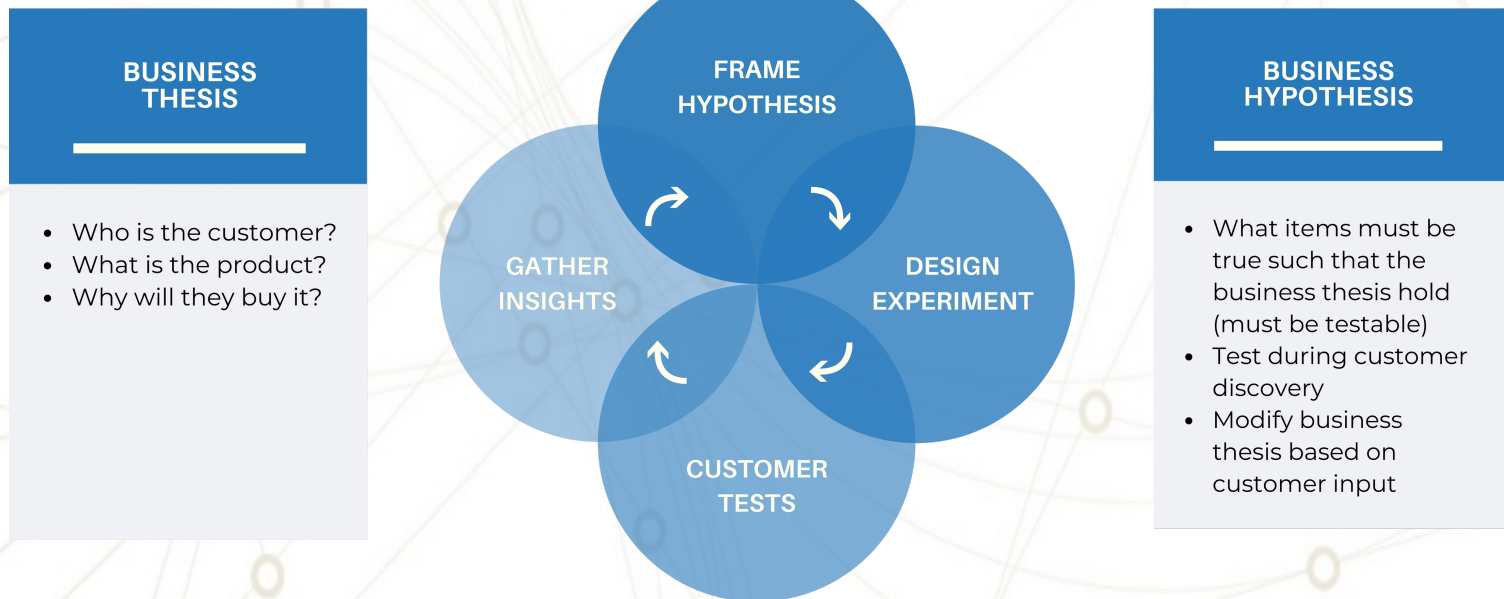**Phase 3   Customer Acquisition**

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

BUSINESS THESIS

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

FRAME HYPOTHESIS

DESIGN EXPERIMENT

CUSTOMER TESTS

GATHER INSIGHTS

BUSINESS HYPOTHESIS

- 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

9

Start with your Business Thesis

BUSINESS THESIS

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

FRAME HYPOTHESIS

DESIGN EXPERIMENT

GATHER INSIGHTS
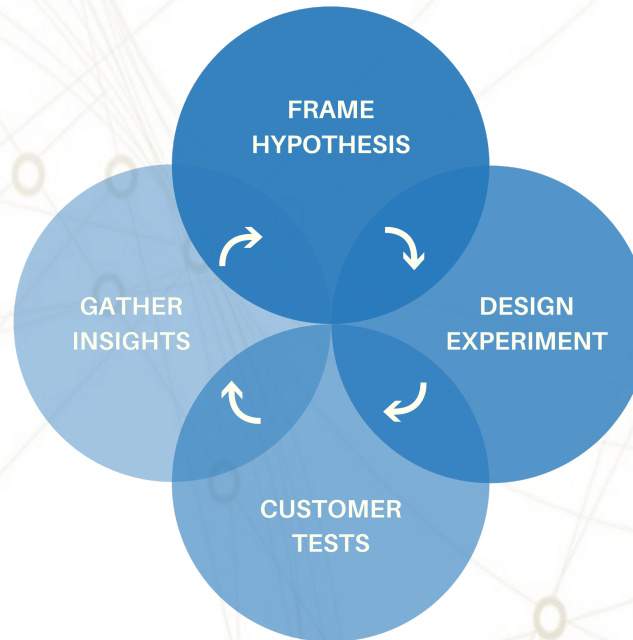
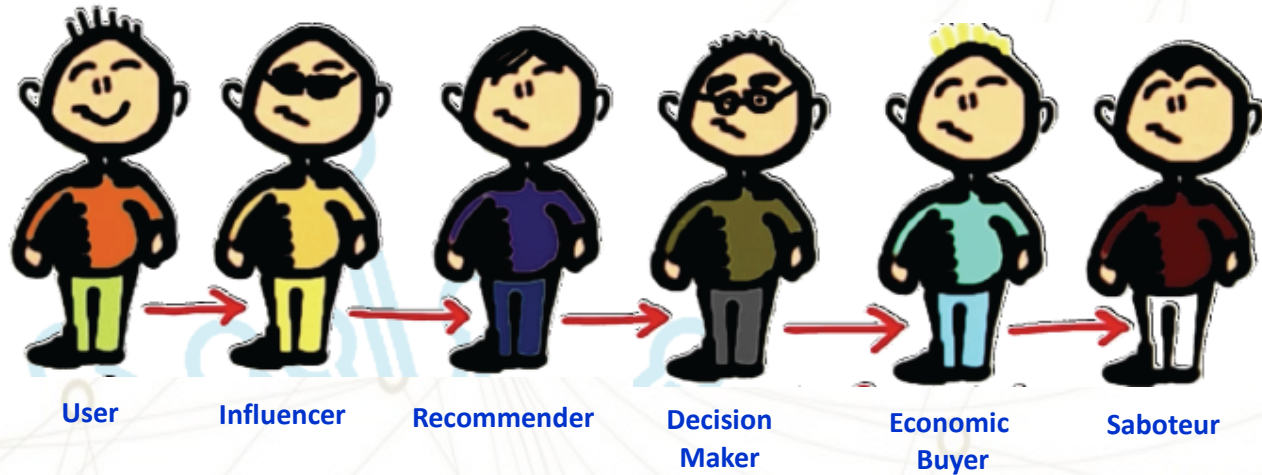**CUSTOMER TESTS**

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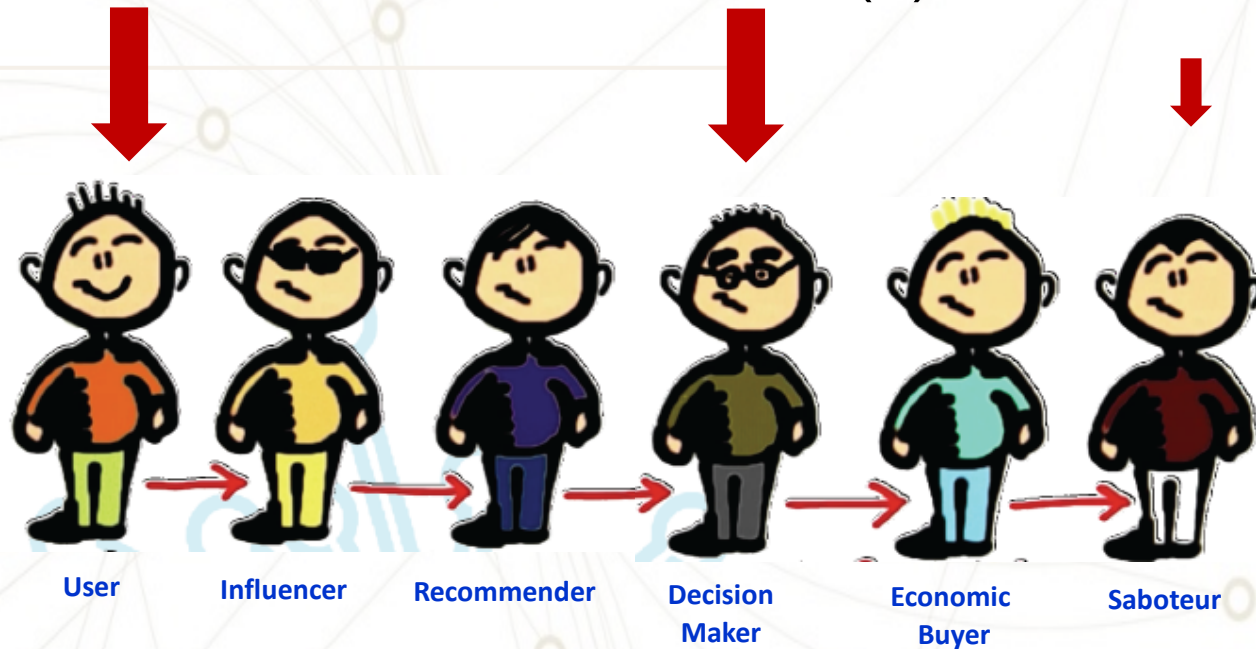
What is a Business Thesis

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

Who is/are Your Customer(s)?

User   Influencer   Recommender   Decision Maker   Economic Buyer   Saboteur

- Ecosystem of people you need to understand, satisfy and appeal to in order to buy your product
- Also called <u>Stakeholders</u>

Who is/are Your Customer(s)?

User Influencer Recommender Decision Maker Economic Buyer Saboteur

- Ecosystem of people you need to understand, satisfy and appeal to in order to buy your product
- Also called <u>Stakeholders</u>
- Most important are generally the users and buyers

Creating a Business Thesis

- **Who is the customer?**
  - This is <u>a person</u> 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 you 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 **<u>The Value Proposition</u>**
  - "…..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 <u>not</u> buying your technology...

Customers/Stakeholders are buying a solution to their problem!

Value Propositions

Questions to Ask Yourself

- 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

Examples of Business Theses

(Who) Administrators at secondary schools will

(What) lease the SchoolSphere platform that co-ordinates teams and reduces redundancy to

(Why)retain teachers who quit due to overloaded with administrative tasks.

(Who) Consumers who read (search for?) news online will

(What) subscribe to Newsage which searches for news based upon a reader's instructions and provide interactive chats on the content

(Why) reduce search time to provide interactive, personalized, summarized news.

(Who) Managers/owners of small to midsized restaurants will

(What) license Nann.ai which provides a quickly-installed customer support voice assistant to answer in-coming calls to book reservations(?)

(Why) quickly set up a system that frees up staff to serve in-person customers (?), obtain more reservations(?) reduce administrative set up time(?)

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….)
    - Any segmentation of the category e.g. size, revenue, type of industry?
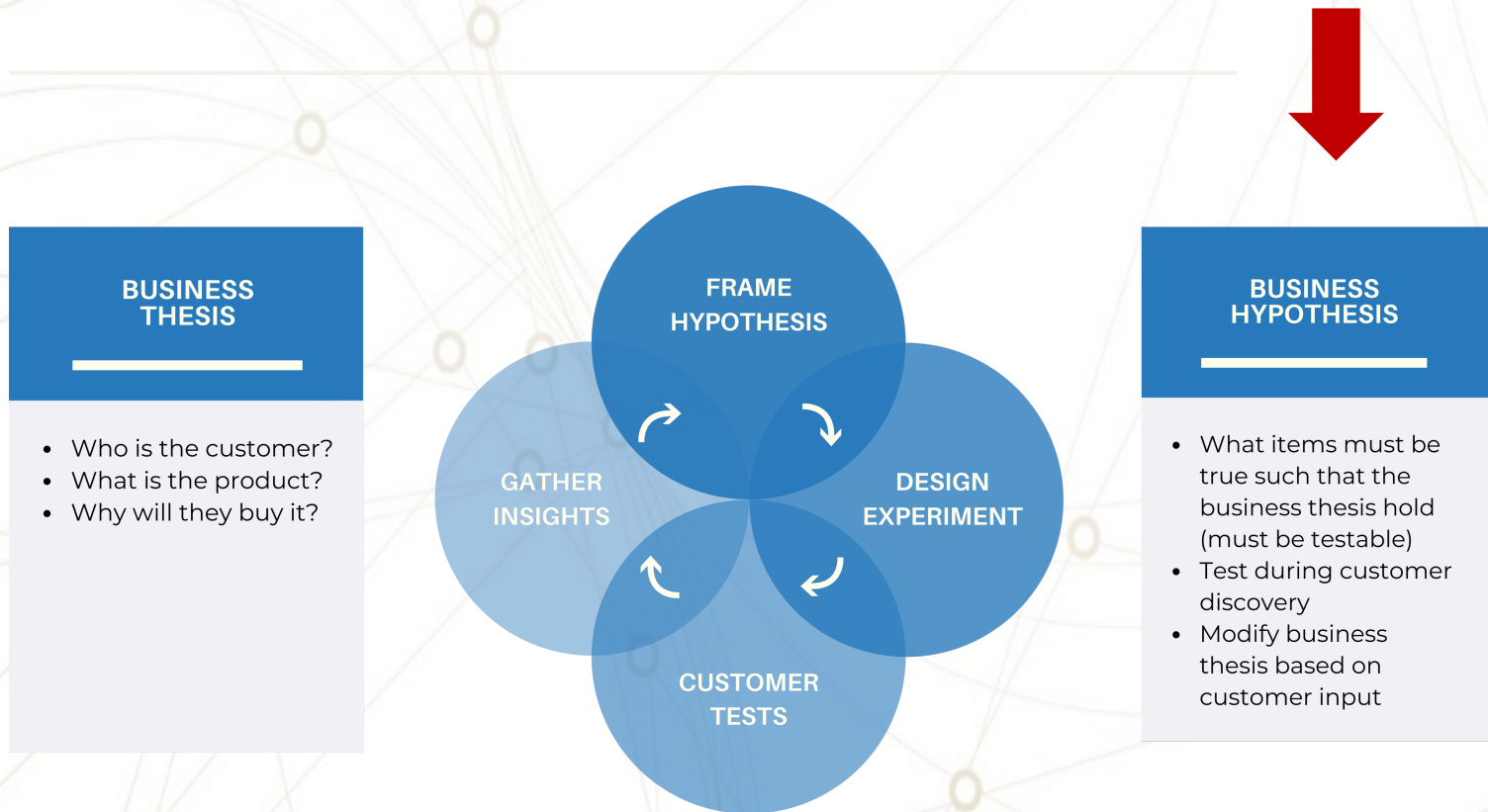   - "This specific customer will buy? lease? license?……..

- **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

BUSINESS THESIS

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

FRAME HYPOTHESIS

DESIGN EXPERIMENT

CUSTOMER TESTS

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BUSINESS HYPOTHESIS

- 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….?
- My stakeholder cannot solve this today because…..?
- The measurable outcome my stakeholder wants is…?
- I will make money/revenue by ….?
- 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.

Examples of Customer Segments

(Who) Administrators at <u>secondary</u> schools

Any other differentiators?

Other potential segments?

(Who) Consumers who <u>read (search for?) news online</u>…

Any other specific differentiators?

Other potential segments?

Managers/owners of small to midsized restaurants…

Any other specific differentiators?

Other potential segments?

Examples of Customer Segments

(Who) Administrators at <u>secondary</u> schools

Any other differentiators? Public vs private; size of school,

Other potential segments? Elementary, community colleges, training programs

(Who) Consumers who read (search for?) news online…

Any specific differentiators? Subscribers to X?, specific type of news e.g. sports, politics, health

Other potential segments? University researchers, news bureaus, magazine/editorial writers

Managers/owners of small to midsized restaurants…

Any other specific differentiators? Use no current solutions, take reservations

Other potential segments? Call centers,

Who Is Your Customer/Stakeholder?
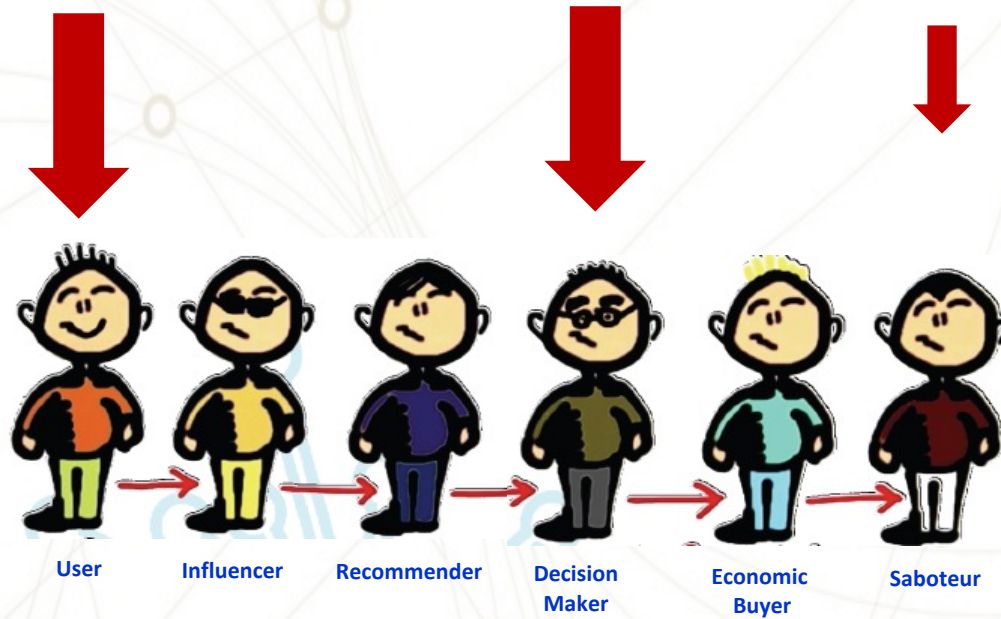
User   Influencer   Recommender   Decision Maker   Economic Buyer   Saboteur

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

Examples of Customer Segments

Buyers/Decision makers at <u>secondary</u> schools – Principal? Board?

Users – teachers, school psychologist?

Influencers/beneficiaries – parents, students

(Who) Consumers who read (search for?) news online…

Buyer/Decision makers – consumers, researchers

Other potential segments? Universities? News media organizations

Managers/owners of small to midsized restaurants…

Buyer/Decision makers – managers, owners, franchise owners

Users – service employees, staff managers, IT

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). This is a good way to begin the discussion/warm-up. "Tell me about your background and current role…"

- 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 predicter 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. Hint: starting with buyers/decision makers is a great choice.

- 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

- Hypothesis to be tested

- 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

AMERICAN ACADEMY OF OTOLARYNGOLOGY- HEAD AND NECK SURGERY

Start with people you know directly

Olympus Domain Experts

Ask local organizations (LS examples)

AMA AMERICAN MEDICAL ASSOCIATION

- 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"

DRONES

Military
Boeing · Honeywell · BAE SYSTEMS · NORTHROP GRUMMAN · Sikorsky · TEXTRON · LOCKHEED MARTIN · GENERAL ATOMICS · L3 communications Communication Systems West · CyPhy · AV
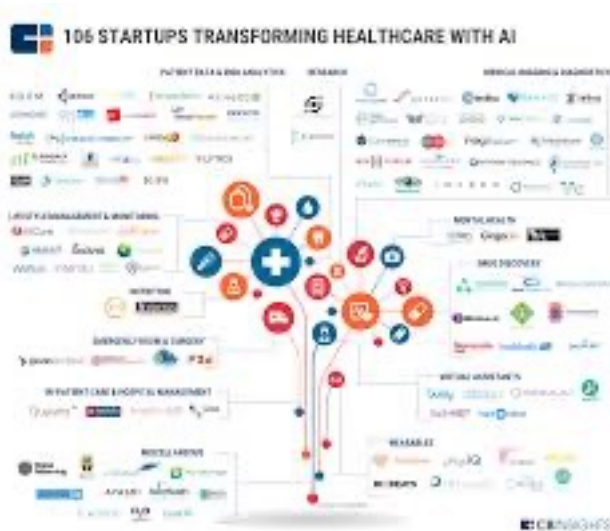
Commercial
Agriculture, Construction, Infrastructure, Oil & Gas, Utilities, Mining, Inspection, Wildlife, Environment, Humanitarian, Public Safety Mapping, GIS, Surveying, Cinematography, Videography, Advertising, Law Enforcement, and Maritime.

SKY-FUTURES · AEROVEL · AEROBO · AgEagle · INOVA drone · senseFly · HAWK AERIAL · skyfront · Altavian · AGRIBOTIX · AVETICS · ASCENDING TECHNOLOGIES · CYBERHAWK · AIRBORNEDRONES · Aeryon Labs inc. · Danger Wolf · PRECISIONHAWK

Consumer
DJI · 3DR · Parrot · HUBSAN · SYMA · IDEAFLY · GHOST · walkera

Category	Companies
Auto-Follow Drones / Computer Vision	PERCEPTO · LILY · HEXO+ · Fotokite · AIRDOG · PRENAV · SKYDIO · ZANO · 3DR
Transportation / Delivery	DHL · amazon Prime Air · MATTERNET · UPS · SF EXPRESS · Flirtey · Alibaba.com · Project Wing · QuiQui · VAYU
Drone Marketplace	SKYCATCH · airstoc · DRONE BASE · Bookadrone · droners.io
Insurance / Tracking / Safety	State Farm · AIG · DRONE INSURANCE · Verifly · Aviation Insurance · botlink · Skyward · UAV Protect · UNMANNED RISK MANAGEMENT
OS / Deploy Systems / Programmable	DroneDeploy · Airware · garuda ROBOTICS · SW AERIAL SYSTEMS · PIXIEPATH
Education / Training / Certifications	DARTDRONES · FLIGHT READY · UNMANNED SAFETY INSTITUTE · udemy · AERIAL DATA SYSTEMS · ROTOR F/X LLC · UNMANNED VEHICLE UNIVERSITY · SA Strat Aero Plc
Drone Data / Analytics / Mapping	DRONEDATA STORE · SLANTRANGE · INDUSTRIAL SKYWORKS · AgPixel · ArcGIS · PIX4D · 2d3 Sensing · solusia air · AirFusion · MapBox · MineSight · DATAMAPPER · mavrx

FASHION

The Fasthech Ecosystem
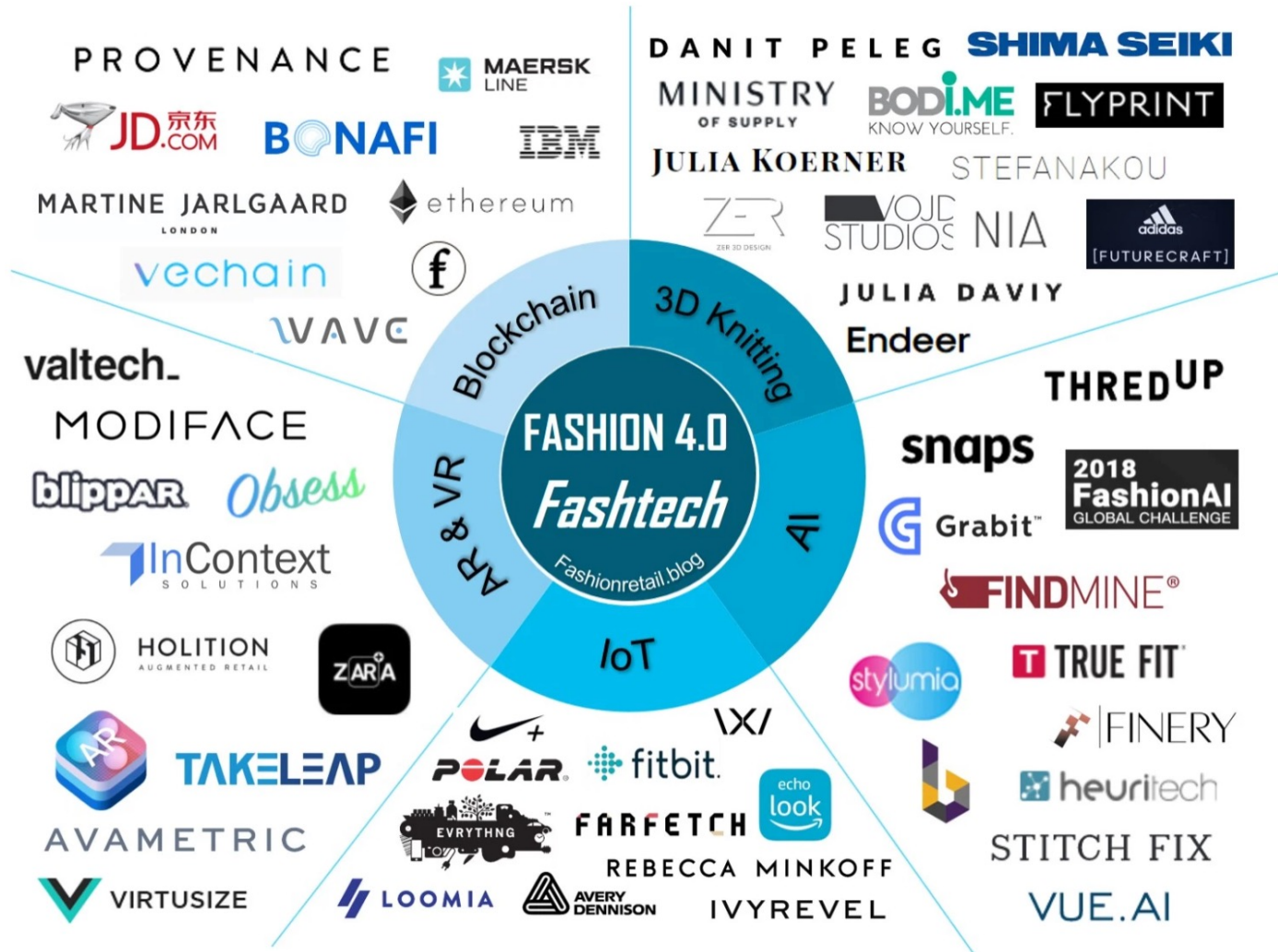
CHEMICALS

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.

Mining, drilling, refining & gas processing

Natural resources

🛢 Oil   💧 Gas   🚃 Coal   ⚗ Minerals   ♻ Renewables

Basic Chemicals	Chemical intermediates	Formulated products & product materials	Customers of the chemical industry
● Olefins (ethylene, propylene, butylene)	● Commodities	● Plastics & Engineering Resins	● Automotive/transportation
	● Differentiated commodities	• Extruded films, pipes, profiles, coatings, sheets, foams	● Consumer products
	● Technical specialities		● Packaging
● Aromatics (benzene, toluene, xylenes)		• Blow-molded parts	● Building & construction
		• Injection molded parts	● Recreation/sport
		• Composites	● Industrial
● Chlor-Alkali (chlorine, caustic soda)		● Synthetic Fibers	● Medical
		● Rubber Products	● Pharmaceuticals
● Methanol		● Paints & Coatings	● Personal care
		● Adhesives & Sealants	● Textiles
● Others (e.g., ammonia, phosphorous)		● Lubricants	● Electrical/electronics
		● Water Treatment Products	● Aircraft/aerospace
		● Cleaning Products	● Business equipment
		● Industrial Chemicals	
		● Flame Retardants	
		● Many others...	

Source: IHS

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.
- Autlán
- BIC
- Bitrode Corporation
- American Battery Solutions
- Amphemol 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
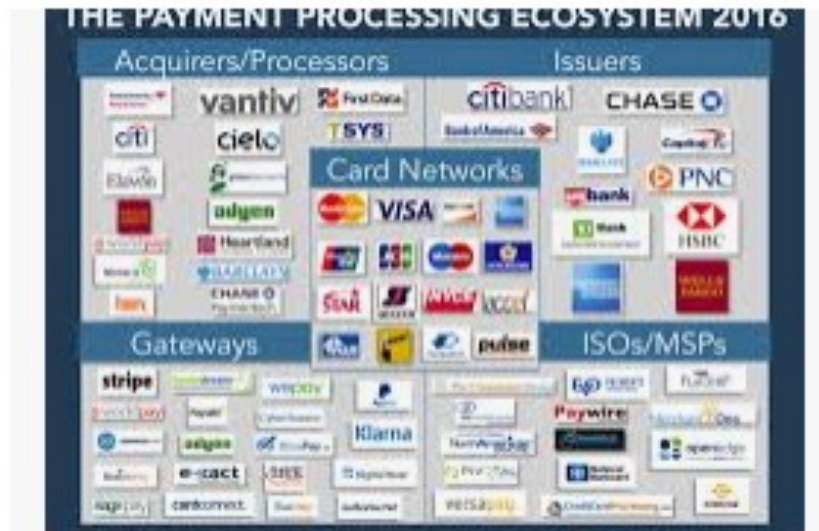
THE PAYMENTS ECOSYSTEM: Everything you ...
businessinsider.in
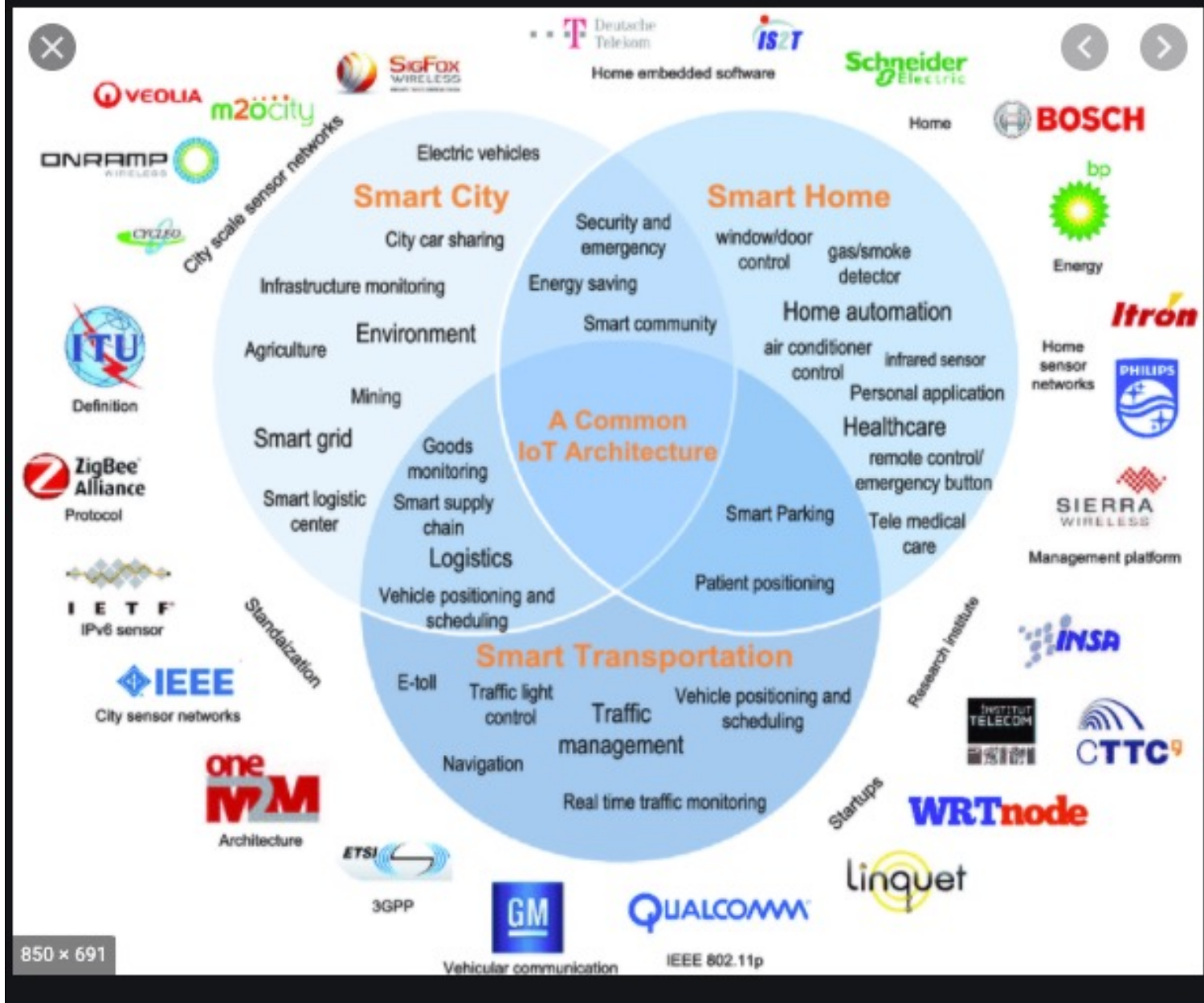
Smart Traffic Ecosystem Diagram

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~~X~~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

<u>Always</u> 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)
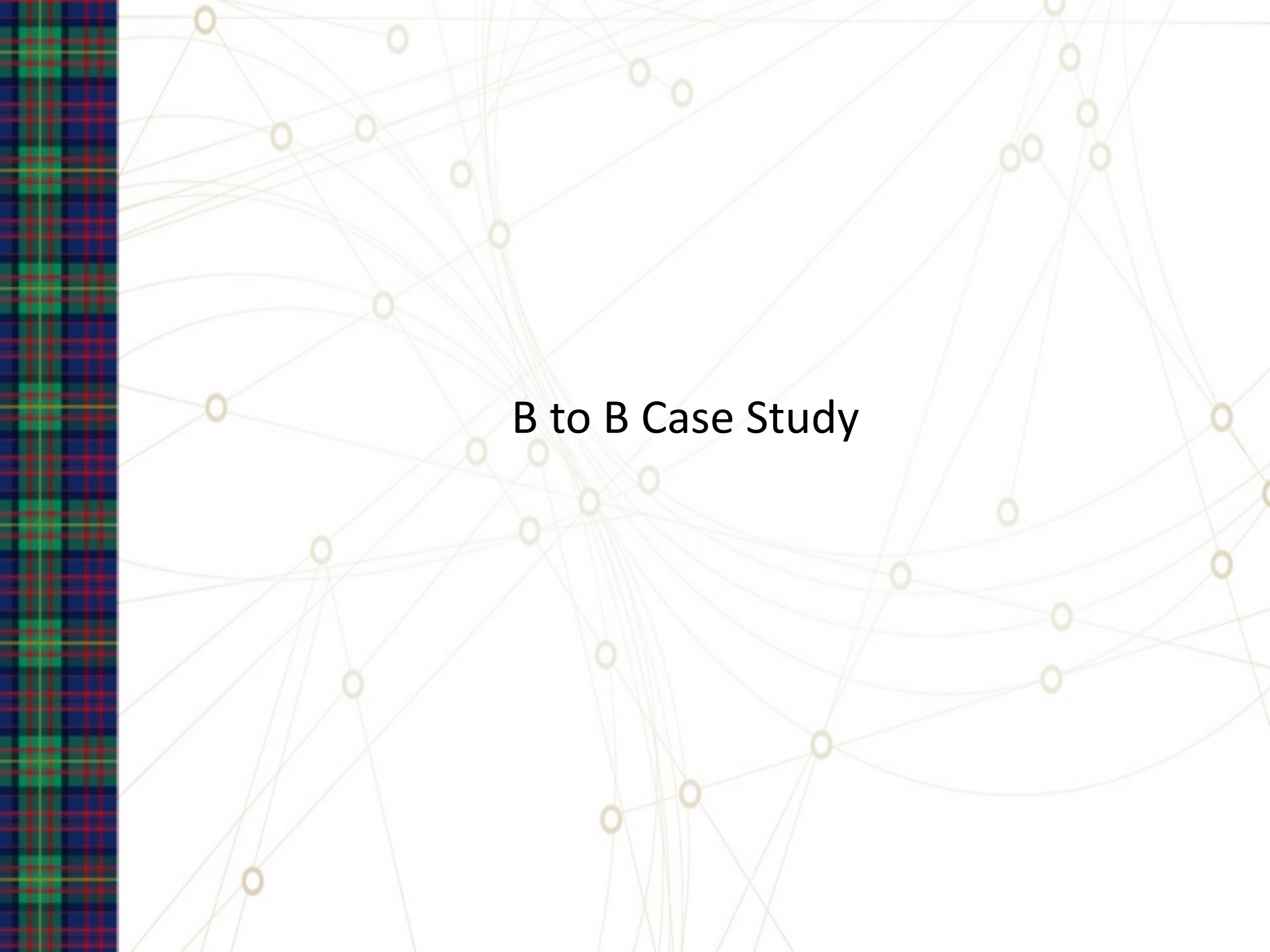
B to B Case Study

RistCall

RistCall Business Thesis

Who is the customer: Hospital Administrators will…..

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

Why will they buy it: ……in order to reduce the number of injuries patients incur when not responded to quickly.

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 would pay for a new product or service to reduce injuries

- Hospital Administrators 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? Board?, ?
- 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) Follow up – what was the result....
- 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? (how bad is this problem?)
- 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 methods 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.
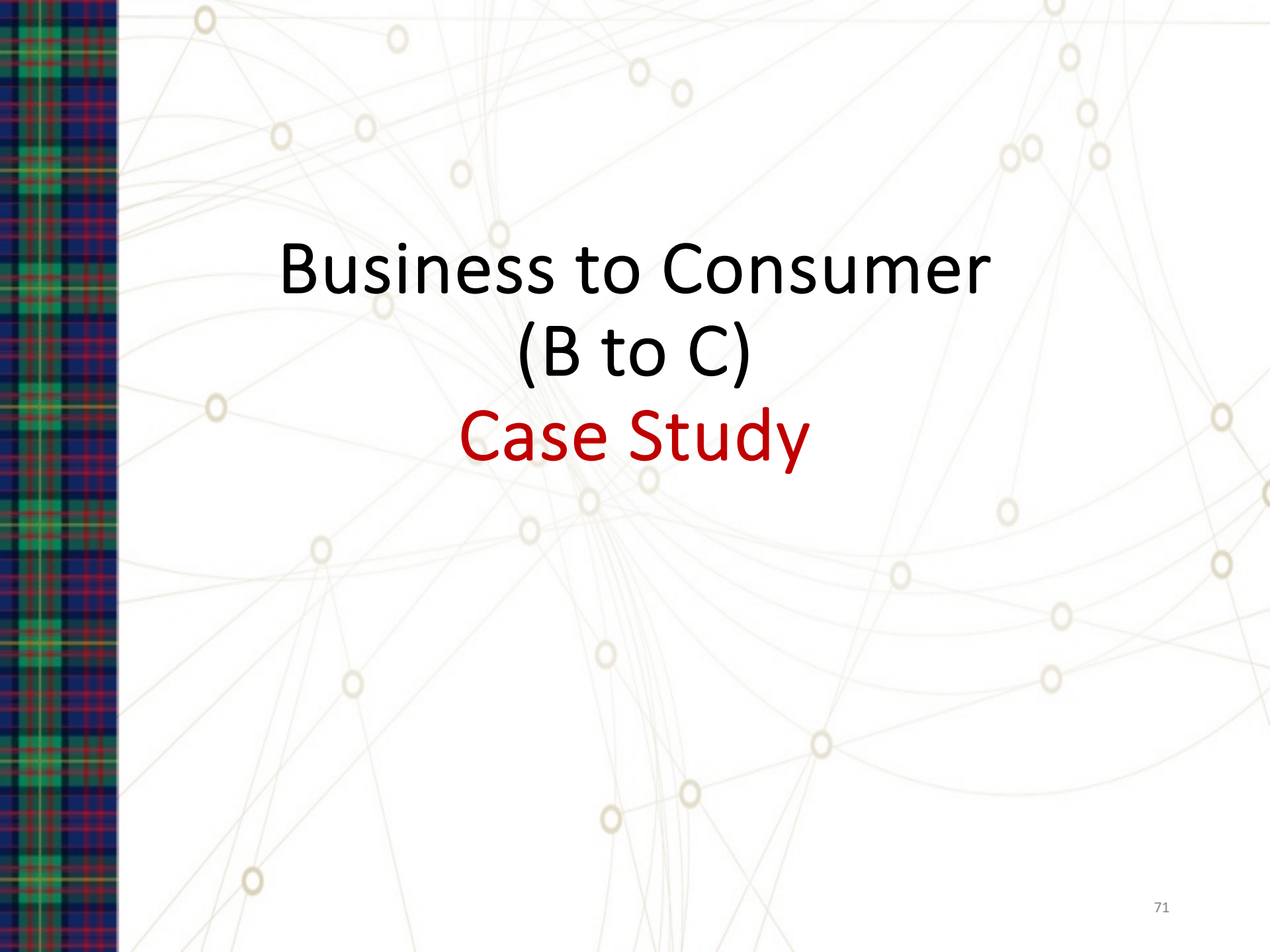
Hospitals were willing to pay $5k to test RistCall!

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 within 2.5 minutes <u>and increase patient satisfaction ratings.</u>

Business to Consumer (B to C)
Case Study
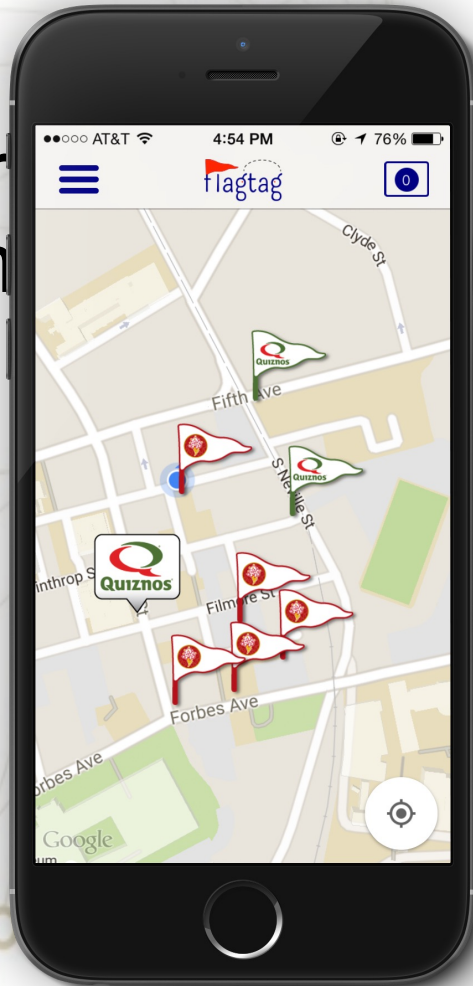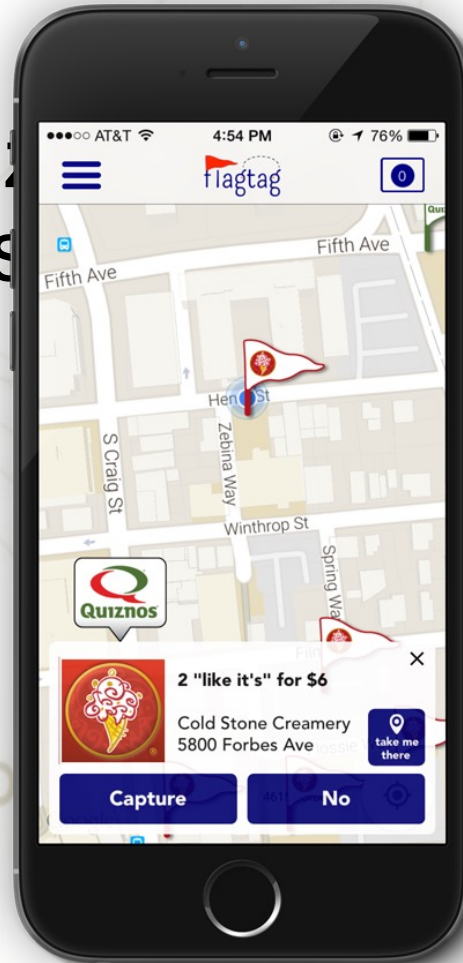
User real life prize nified, augm y, Eas t

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?"

"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.)

flagtag 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."

flagtag

"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
  - o Simply capture coupons – no game aspect
  - o Provided an incentive to redeem the coupons more quickly

Relaunched Spring 2017
Folded Summer 2017

How Many?

Recommended

100+

Stakeholders

For CDK

Goal is 20 interviews

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 Discovery Kickstarter

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!

Appendix

Project Olympus

Startup Incubator for CMU
One page application
Customer Discovery Kickstart program
Personalized Work plan and assigned EIR
at conclusion of program

'In business' since 2007
1200+ startup ideas
$799M+ follow on funding
20 exits

Resources

Join Project Olympus
- www/cmu.edu/Olympus
- Domain Experts
- 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

NSF ICorps Regional and National Programs

Competitive Analysis

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?

Template

	Feature 1	Feature 2	Feature 3	Feature 4	Feature 4
You					
Competitor 1					
Competitor 2					
Competitor 3					
Competitor 4					

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

Company	Tagline	Main Positioning	Website Title	Website Meta description	Twitter profile	Google+	LinkedIn	Top SEO Key Words
Liaison	Flexible Cloud Integration and Data Management Leader	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.	Liaison Technologies - Data Integration - Transformation - Harmonization - Management - Security	Liaison Technologies is a global integration and data management company providing innovative solutions to integrate, transform, harmonize, manage and secure critical business data on-premise or in the cloud.	Moving, managing and transforming data with cloud integration managed services & data management solutions	Secure data integration and management, on premise and in the cloud.	Liaison Technologies delivers cloud-based enterprise application and B2B / EDI integration managed services, strategic consulting, cloud-based master data management, data security and data transformation solutions - reducing business costs and driving operational efficiencies on-premise or in the cloud.	• EDI notepad • EDI • EDI integration • Data Translation • EDI Editor • EDI Viewer • B2b integration • B2b edi • Edi b2b
Axway	Business in Motion	Axway, a market leader in governing the flow of data, is a global software and services company with more than 11,000 public- and private-sector customers in 100 countries.	Governing the Flow of Data | Axway - Global	Manage, secure & monitor all business interactions with Axway's business technology solutions. Secure company data & ensure regulatory compliance.	Axway's cloud integration, API & identity mgmt software extends enterprise boundaries & empowers customers to govern the flow of data.	Axway - Governing the Flow of Data	Established in 2001, Axway is a global software company with more than 11,000 public- and private-sector customers in 100 countries, and offices around the globe. Our award-winning products and solutions enable business-critical interactions within and among enterprises. With the acquisition of Vordel, Axway now delivers the cloud integration, API, and identity management capabilities customers need to extend the boundaries of their enterprise and fully govern the flow of data out to the cloud, mobile, and beyond.	• cfi • managed file transfer • mft • secure internet file transfer • secure messenger • b2b gateway • partners file transfer • enterprise file transfer • managed file transfer software • b2b edi • IT professional services
E2open	The Leader in Collaborative Planning & Execution	E2open is the leading provider of cloud-based, on-demand software solutions enabling enterprises to procure, manufacture, sell, and distribute products more efficiently through collaborative planning and execution across global trading networks.	Welcome to the E2open Business Network | Supply Chain Collaboration in the Cloud | E2open	E2open is the leader in collaborative execution, delivering a strategic, cloud-based solution for managing business across global trading partner networks.	E2open is a leading provider of cloud-based, on-demand software solutions for collaborative planning and execution across global trading networks.	Welcome to the E2open Business Network!	2open is the leading provider of cloud-based, on-demand software solutions enabling enterprises to procure, manufacture, sell, and distribute products more efficiently through collaborative planning and execution across global trading networks. Enterprises use E2open solutions to gain visibility into and control over their trading networks through the real-time information, integrated business processes, and advanced analytics that E2open provides. E2open customers include Celestica, Cisco, HGST, HP, IBM, Lenovo, L'Oréal, LSI, Motorola Solutions, Seagate, and Vodafone.	• mark woodward • chief supply • supply planning • what is cpo • supply chain control tower • scm world • chiefsupply • supplier collaboration • simplified logistics • sales order management • exostar login • b2b outsourcing
Pervasive / Actian	Take Action on Big Data	Actian transforms big data into business value for any organization - not just the privileged few. Our next generation Actian Analytics Platform™ software delivers extreme performance, scalability, and agility on off-the-shelf hardware, overcoming key technical and economic barriers to broad adoption of big data.	Pervasive Corporate Site > Home Big Data Analytics | Transforming Data Into Value | Actian	Big Data Analytics from Actian transforms data into value with business data management. The best big data tools and software for any organization.	Was Pervasive Software, Now Actian! - Still leader in SaaS integration. Expert in data & application integration and data quality cleansing. Transforming Data into Value Take a sip - http://www.CoffeeAtActian.co m.	Take Action on Big Data	Actian transforms Big Data into business value for any organization—not just those with considerable resources. Actian provides transformational business value by delivering actionable insights into new sources of revenue, business opportunities, and ways of mitigating risk with high-performance in-database analytics complemented with extensive connectivity and data preparation.	Pervasive: • Datacloud • Data integrator • Online integrator • Data integration software Actian: • Ingres • Big data analytics • Ingres database • Dbvisualizer • Data cloud

Competitive Landscape

	Pinterest	Telly	#waywire	VIinterest
User Friendly	✔	✘	✘	✔
Privacy	✔	✘	✘	✔
Keyword follow	✘	✘	✘	✔
Playlist follow	✘	✘	✘	✔
Video Bookmarks	✔	✔	✔	✔
Video Autonext	✘	✔	✔	✔
Video Shuffle	✘	✘	✘	✔

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.)

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
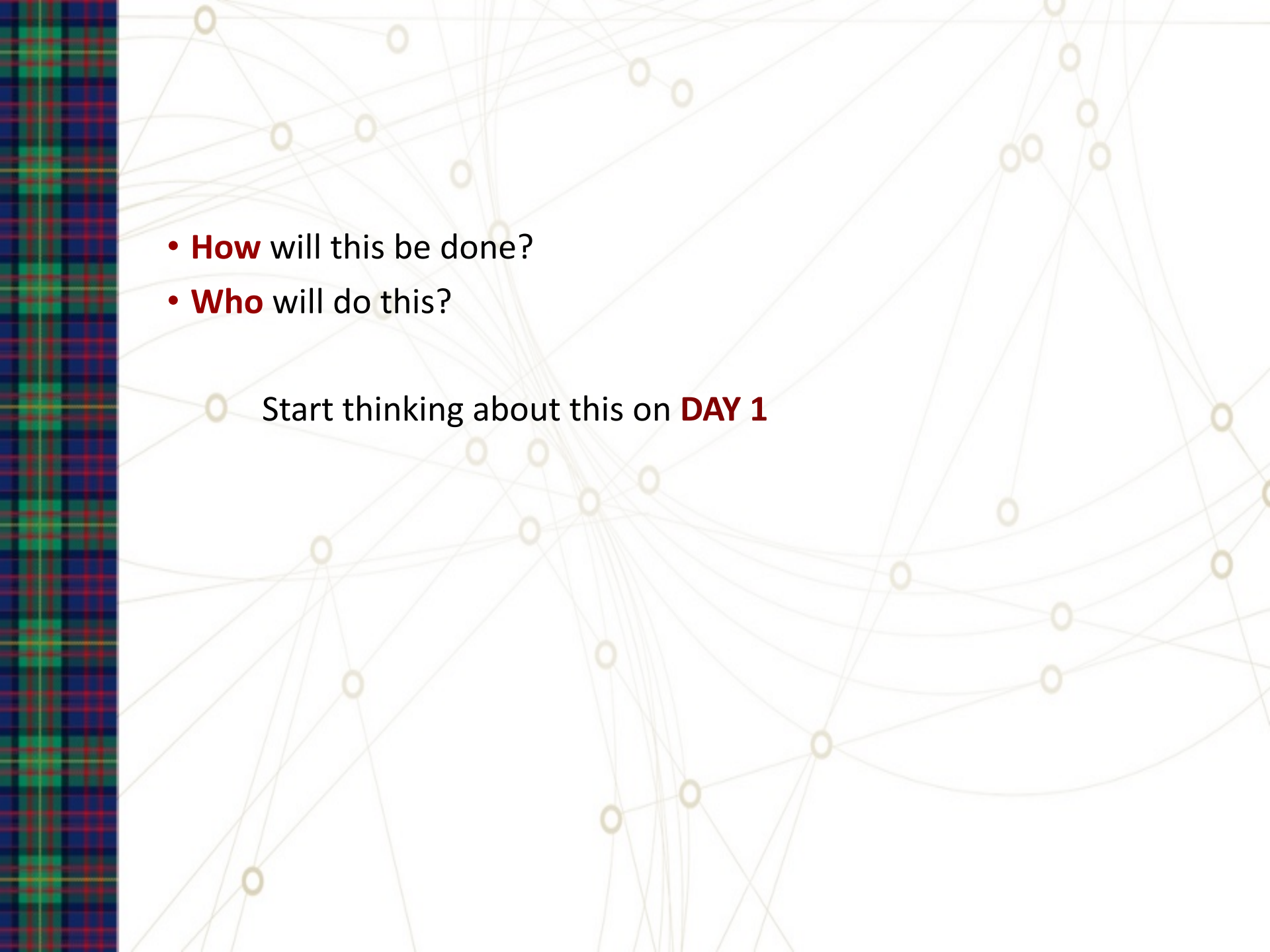
Examples of Businesses/Products that Scale Well

- **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 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

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**

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

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.
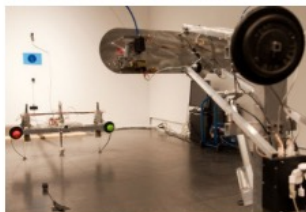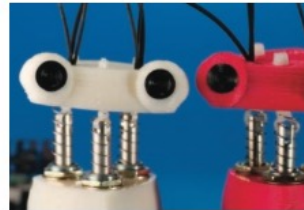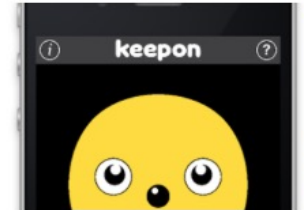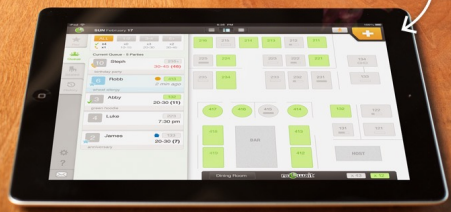
What investors are looking for

Now with Customizable Floormaps
Learn More

Why no🔊wait® 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

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