

Product Management: Transforming Opportunities into Great Products

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Course Overview



Course Team



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Professional Development

Anand Subramani

- Stanford
- Words With Friends
- Dropbox
- Gusto
- Pilot



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Jiaona Zhang

- Yale
- Analysis Group
- The Lucas Group
- Pocket Gems
- Dropbox
- Airbnb
- WeWork
- Webflow



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Overview of the Product Lifecycle



Course Outline

- Problem identification
- Design
- Launch planning
- Distribution and economics
- Roadmaps

Learning Objectives

- What is product management?
- How do I take an idea from start to finish?
- What topics do I want to learn more about?

What is Product Management?

- Misunderstandings
 - Black turtlenecks
 - Post-it notes
 - Talking to users, and then ignoring their needs

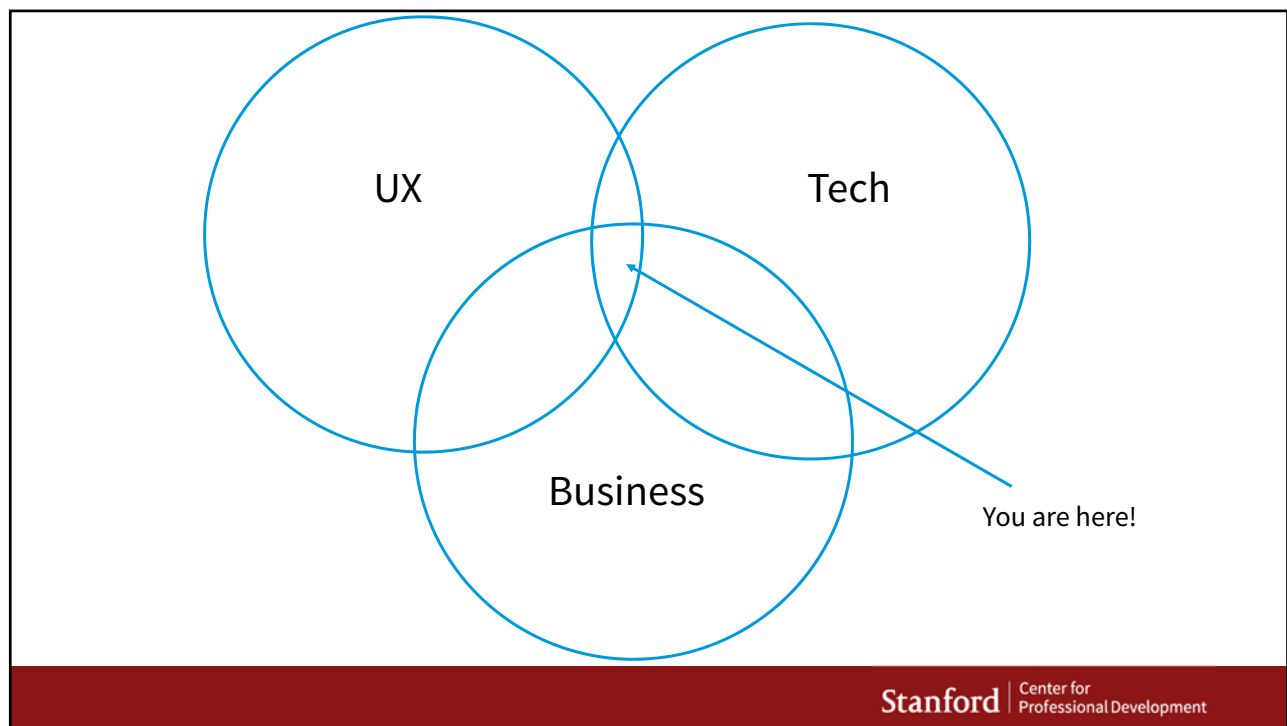
The History

- Neil McElroy (P&G)
 - Brand Men- Tracked sales, managed product, advertising
 - Unified marketing and product development
- Bill Hewlett and David Packard (Stanford)
 - Product Manager- Internal voice of the customer
- Microsoft
 - Program Management- Surveying users
- Google
 - Associate Program Management Program

The PM job can be different in every company.

But some principles stay the same.

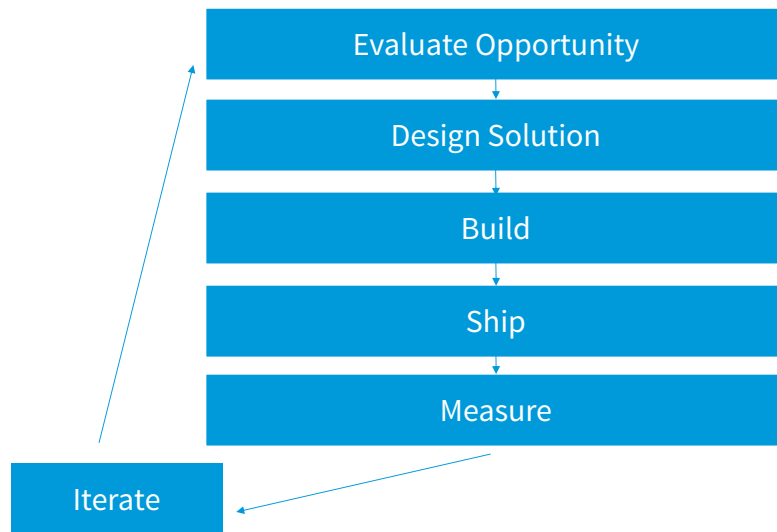
1. Core principles
2. Key responsibilities



Core Principles

1. CEO vs. Janitor
2. Big Picture to Bugs
3. Intra and Inter Team Communication
4. Influence Without Authority
5. Know Your User
6. Bring the Donuts

The Product Lifecycle

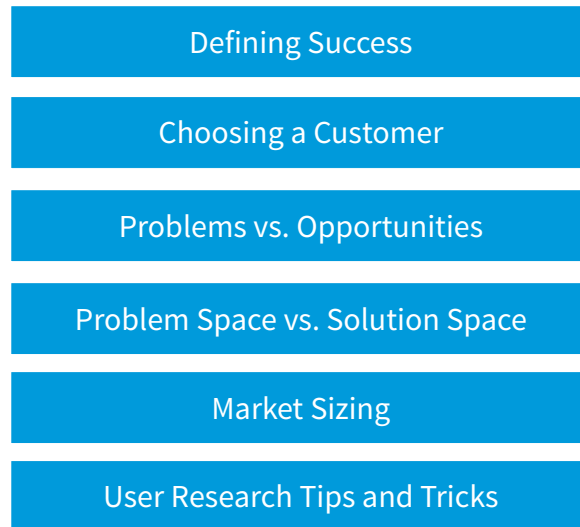


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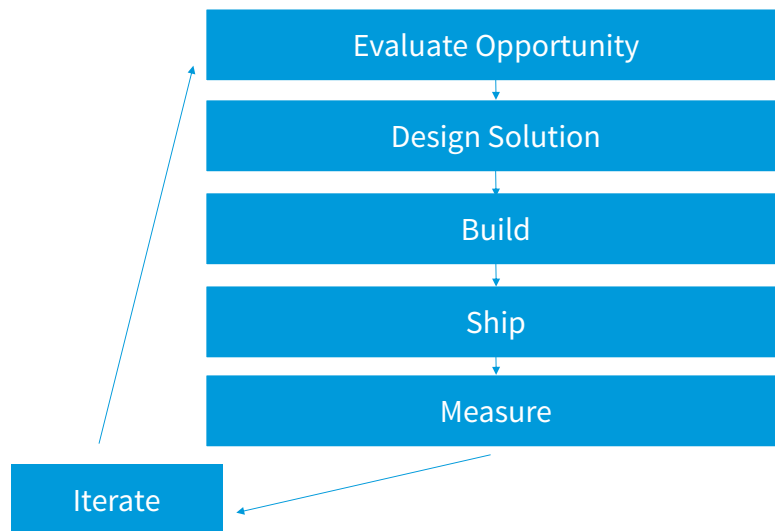
Understanding the Problem Space



Finding a Problem Worth Solving



The Product Lifecycle



What is Success?

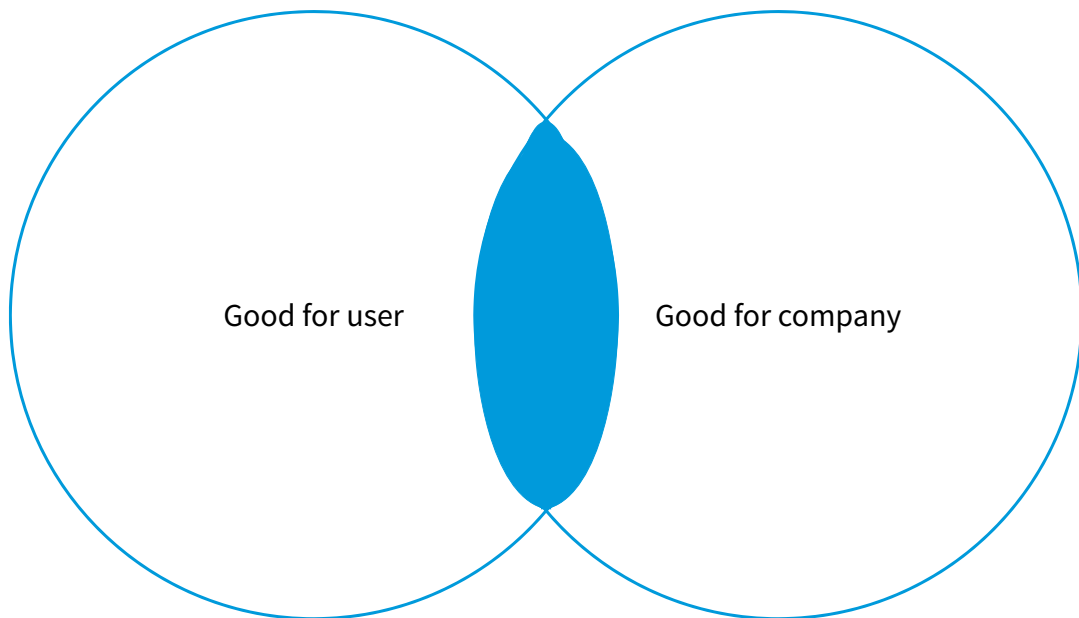
- If we achieved X outcome with Y input
- Success tip: Write down your success definition

Customer Identification

- B2B- Selling to another business
- B2C- Selling directly to the end user
- Success Tip: Choose a customer you have a deep understanding for







Problem Definition

- Unmet need, want, or desire of your target customer



moviepass™

Month

\$10 per month

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Problem Definition

- Good for the user
 - People love your product
- Good for the company
 - Provide economic value in solving problems

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Problem Space



Solution Space

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Problem Space Overview

- Customers do not know how to translate their problems into solutions
- No solutions allowed
- Understand your customers' reality
- How does it make customers feel?
- Extract information from customer

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Solution Space

- Requires clear problem statement
- Focus on how to solve

Case Study Example

- Success Criteria: Reduce carbon footprint by commuting to work while building a profitable business
- Target Customer: People who bike to work in San Francisco

Target Customer Perceived Problems



“I wish I had an electric bike.”



“I wish I had a better helmet.”



“Fix the roads and I’ll bike.”

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Target Customer Actual Problems



“I’m really sweaty when I get to work.”



“I’m afraid of being hit by a car.”



“I’m afraid of falling.”

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Target Customer Possible Solutions



Showers at work



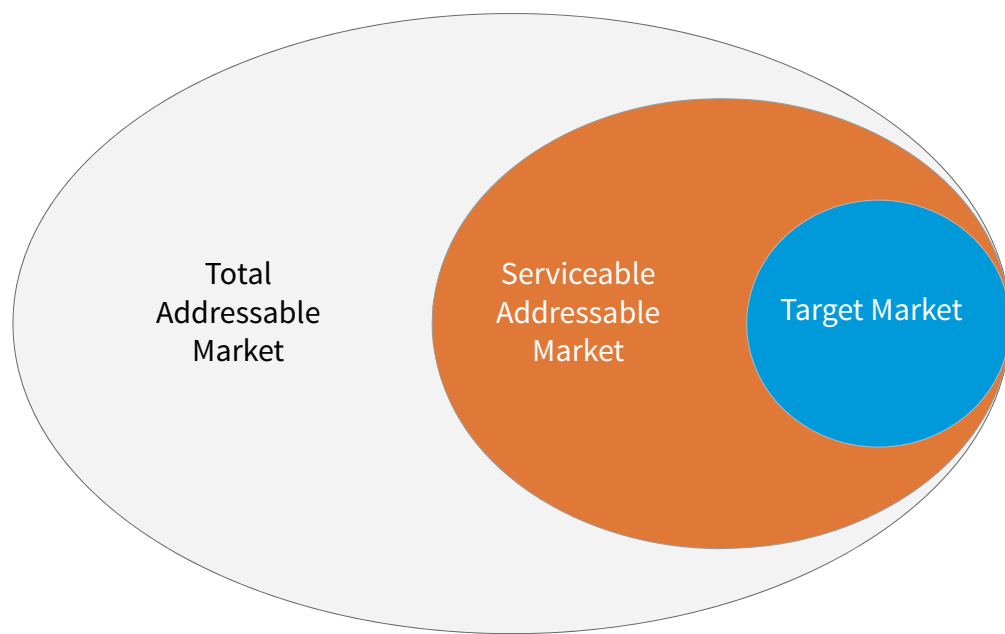
Protected bike lanes



Better bike

Market Sizing

- You need a market that is capable of achieving your success objectives
- Total Addressable Market (TAM)
 - Total revenue opportunity available for your category
- Serviceable Addressable Market (SAM)
 - Portion of the total market you can actually reach
- Target Market (TM)
 - The people you are actually trying to reach



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Market Sizing Tips

- TAM is 2+ orders of your success criteria
- Don't worry about overprecision
- TAM relies on other people's calculation
- TM relies on what you know

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Talking to Customers

- Core PM Skill
 - Represent your customers within your company; build something they want
- Customer Identification
 - Pick customers from your target market
- Customer Segmentation
 - Note key differences during identification

Quantitative Analysis



Structured and rigid responses



Collect data from large group of people
very quickly and at low cost

Qualitative Research



Open-ended and less rigid
Great for capturing nuance and
forming hypothesis



Difficult and expensive to talk to a lot of people

Customer Interview Tips

- Write your script ahead of time
- Start with easy background questions
- Move to targeted questions about potential problems
- Conclude with open-ended questions

Running a Session

- Customer Session Do's
 - Reach out to people you don't know
 - Be human and build a rapport
 - Have a dedicated notetaker
 - Be curious
 - Schedule interviews in a consecutive block
 - Write down your hypotheses
 - Be respectful of time

Running a Session

- Customer Session Don'ts
 - Don't try and get the answers you want
 - Don't be disorganized
 - Don't debate the customer

Finding a Problem Worth Solving

Defining Success

Choosing a Customer

Problems vs. Opportunities

Problem Space vs. Solution Space

Market Sizing

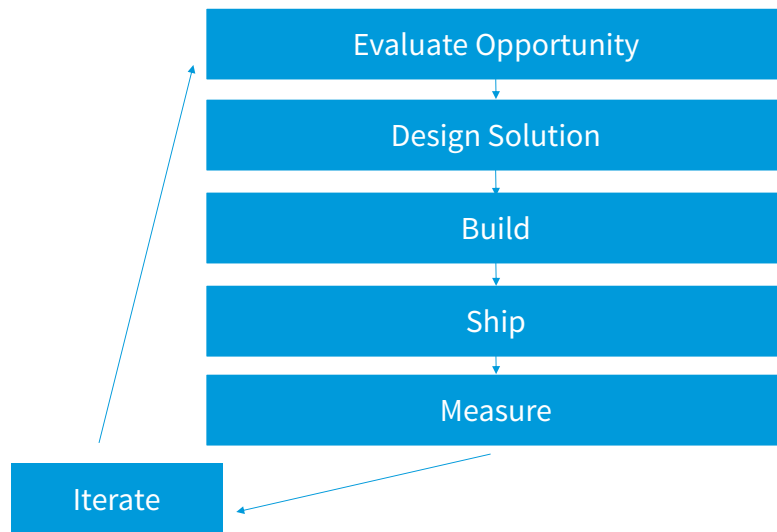
User Research Tips and Tricks

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Designing the Solution



The Product Lifecycle



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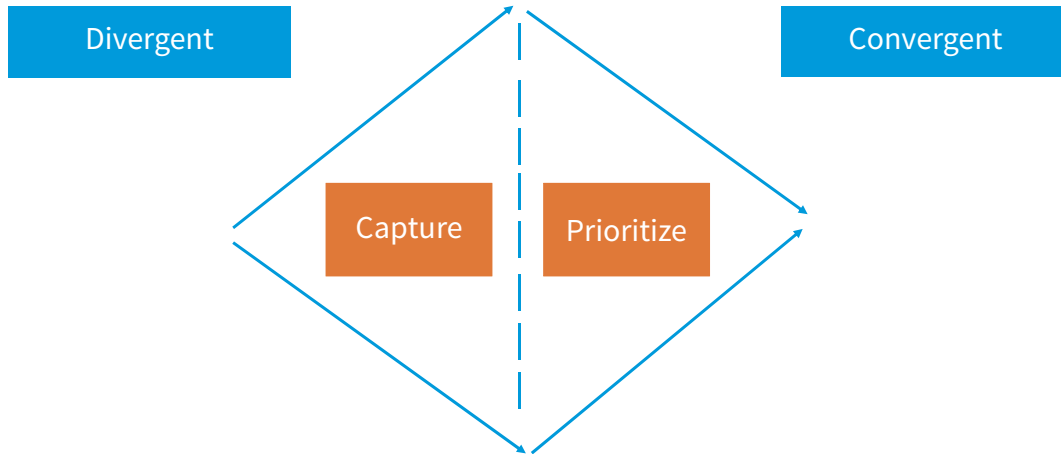
Problem Space



Solution Space

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Diamond Design



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Target Customer Actual Problems



“I’m really sweaty when I get to work.”



“I’m afraid of being hit by a car.”



“I’m afraid of falling.”

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Opportunity Statements



Opportunity Statement #1:
Create a way to separate the bikers from the cars.

Opportunity Statement #2
Create a way for bikers to be more visible to cars.

How Might We

- How
 - Assumes there is a solution
- Might
 - It's OK if it's not the right solution
- We
 - Something the team can achieve together

Opportunity Statements

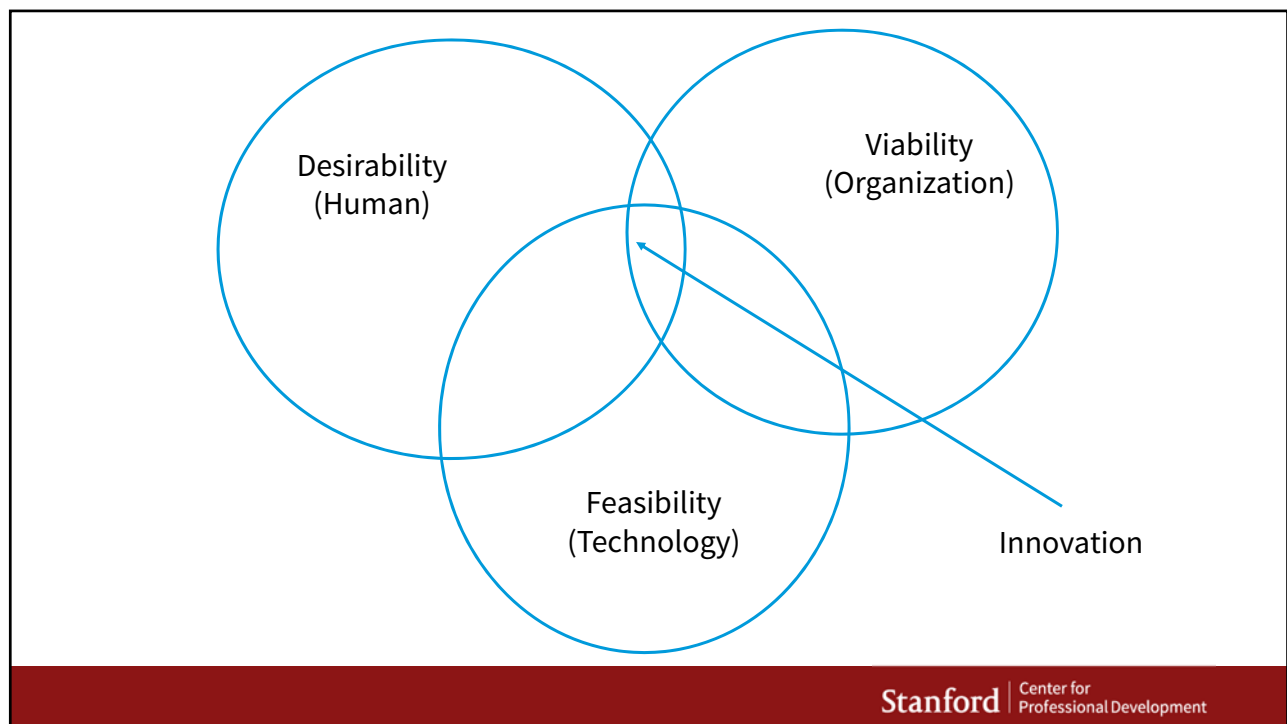


Opportunity Statement #1:
Create a way to separate the bikers from the cars.

How might we create a separation between bikers and cars?

Divergence as Design Constraint

- Truths about your customer, problem, or company that eliminates classes of solutions



Cleaning Case Study

- P&G Business Problem
 - Generate \$5 billion revenue from new product lines
- P&G User Problem
 - Find a better way to clean floors
- P&G Opportunity Statement
 - How might we reimagine the tools we use to mop?

P&G User Research



Changed into
dirty clothes



Swept house first



Mopping was
messy

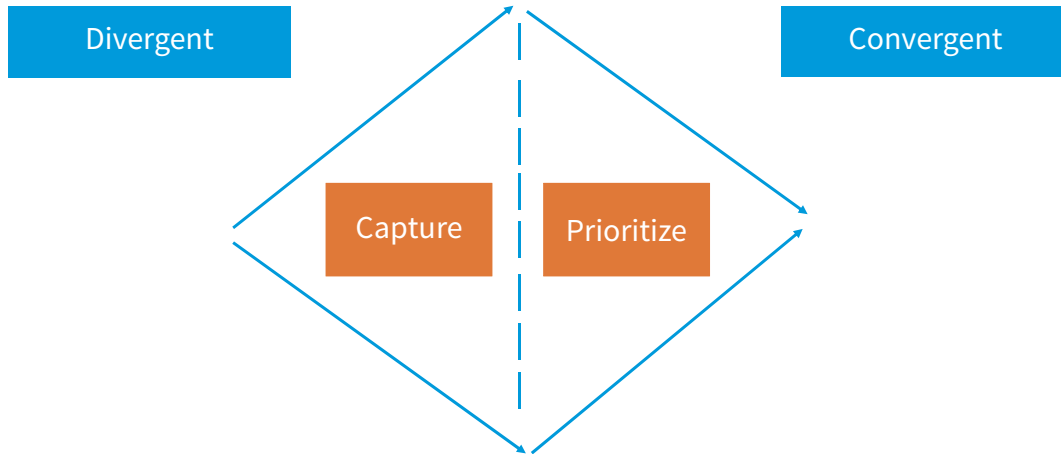
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Cleaning Case Study

- How Might We
 - Remove the step of sweeping before mopping?
 - Build a tool so users never had to touch dirt?
 - Create a mop that could attract dirt itself?

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Diamond Design



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Divergence

- Start with a clear problem statement
- Establish your design constraints
- How Might We
- Structure your brainstorming

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Convergence

- PM Principle
 - Make the decision based on what is important to de-risk
- Success Tip
 - List your assumptions and rank them

Classpass



1. There are many people who want to take studios classes but won't pay full price
2. There are many spots that go unsold in studio classes that studios would be willing to sell at a discount
3. Doing so won't cannibalize a studio's business or hurt their brand

How to Prototype Cheaply

- Brainstorm ideas
- Usability testing: Does this prototype work?
 - Never take what the customer says as exactly what they need
 - “I didn’t design this”
 - Remain neutral
 - Define roles: interviewer, photographer, note taker
 - Test 5-10 people

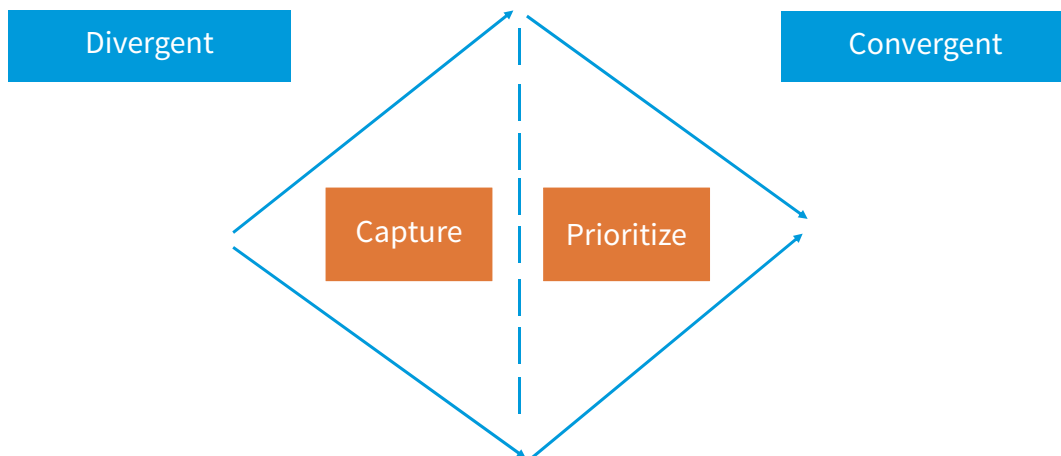
How to Prototype Cheaply

- Interviewing Tips
 - What is this for?
 - What do you think when you see this?
 - What do you expect that will do?
 - What would you do next?

MVP

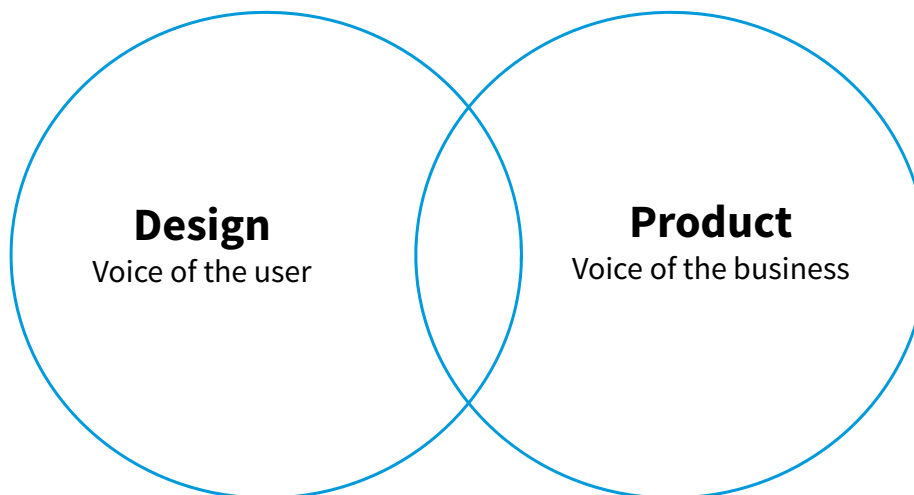
- Minimum Viable Product
 - Your product is a viable solution to a problem
- Minimum Loveable Product
 - People love your product

Diamond Design

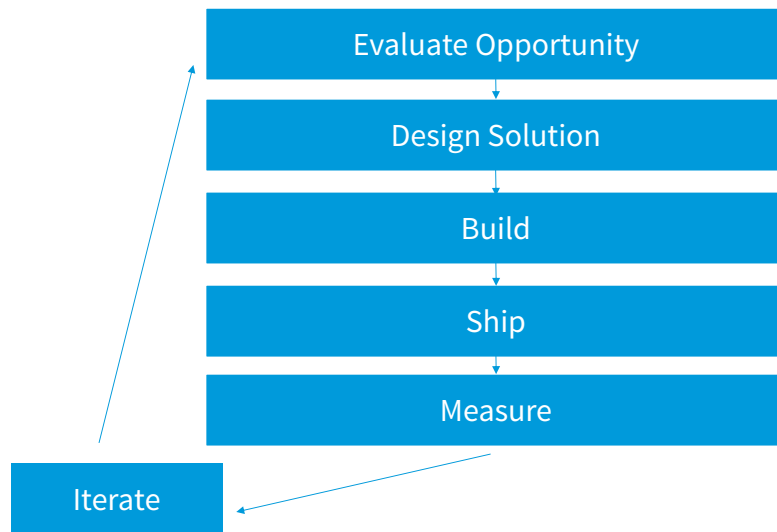


Convergence

- Use prototyping to de-risk
- ID key assumptions and test them
- Look for ways to test ideas cheaply
- Maintain quality where necessary



The Product Lifecycle

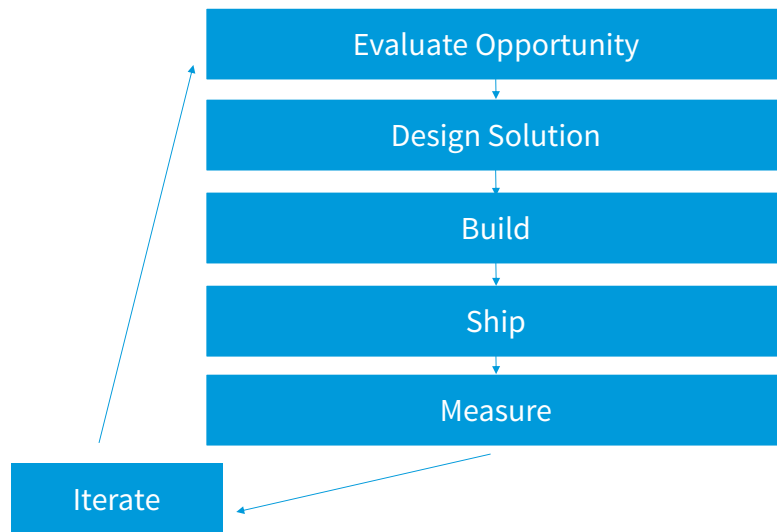


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Launching



The Product Lifecycle

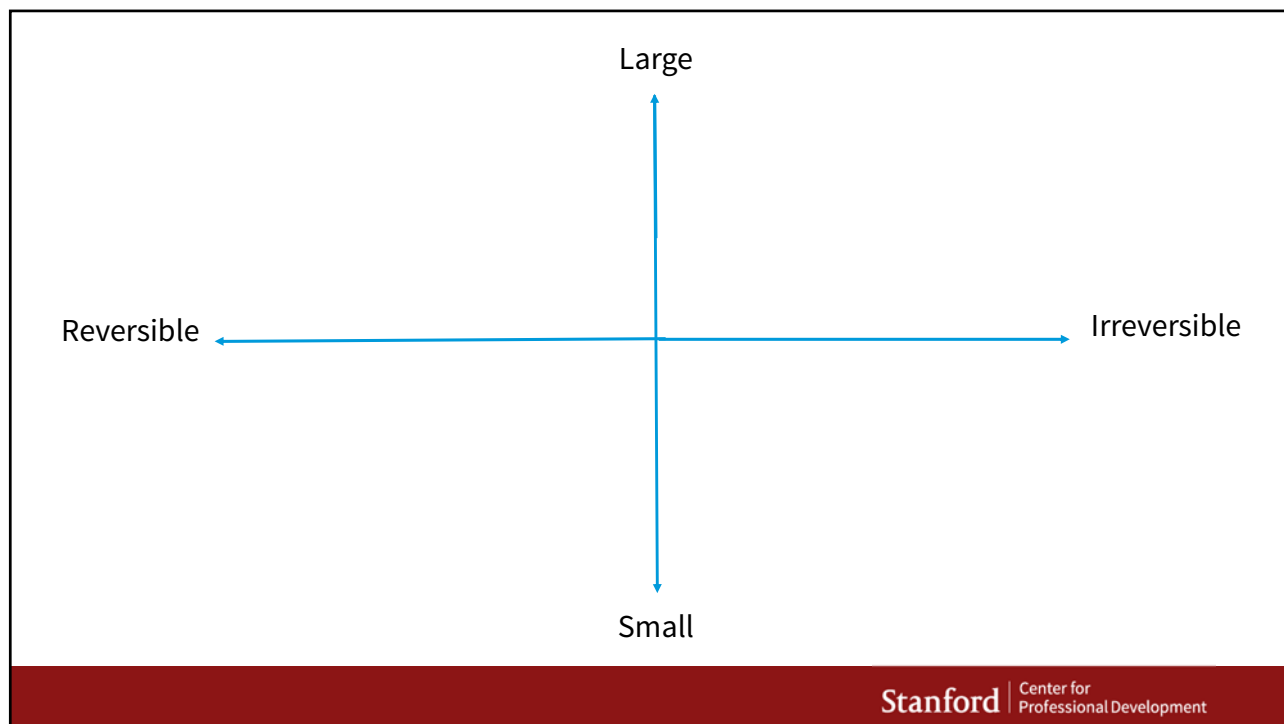


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Release Stages

- Alpha Release
 - Product goes to people who are likely to be friendly
- Beta Release
 - Product goes to customers who self-select in
- General Availability
 - Any customer can use your product

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Internal Readiness: Launch Checklist

- Product Readiness
- Pricing and Positioning
- Service and Support Readiness
- Partner Readiness
- Operations Readiness
- Sales Readiness
- Marketing Readiness
 - Communications and PR
 - Ad Campaigns
 - Press Release

External Readiness

- When NOT to launch
 - Products not built yet
 - Small feature changes
 - Changes you might want to retract

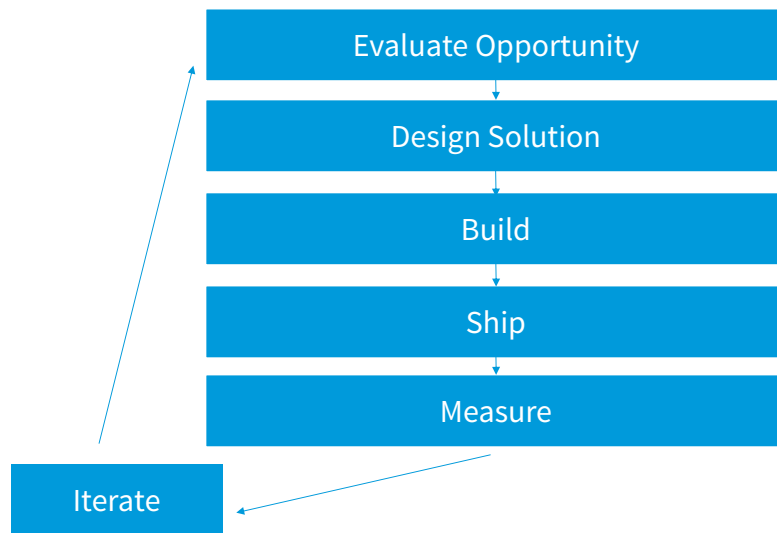
External Readiness

- Blog post
 - Written from the users' perspective
 - Identify the narrative of your launch

Distribution and Go-To-Market

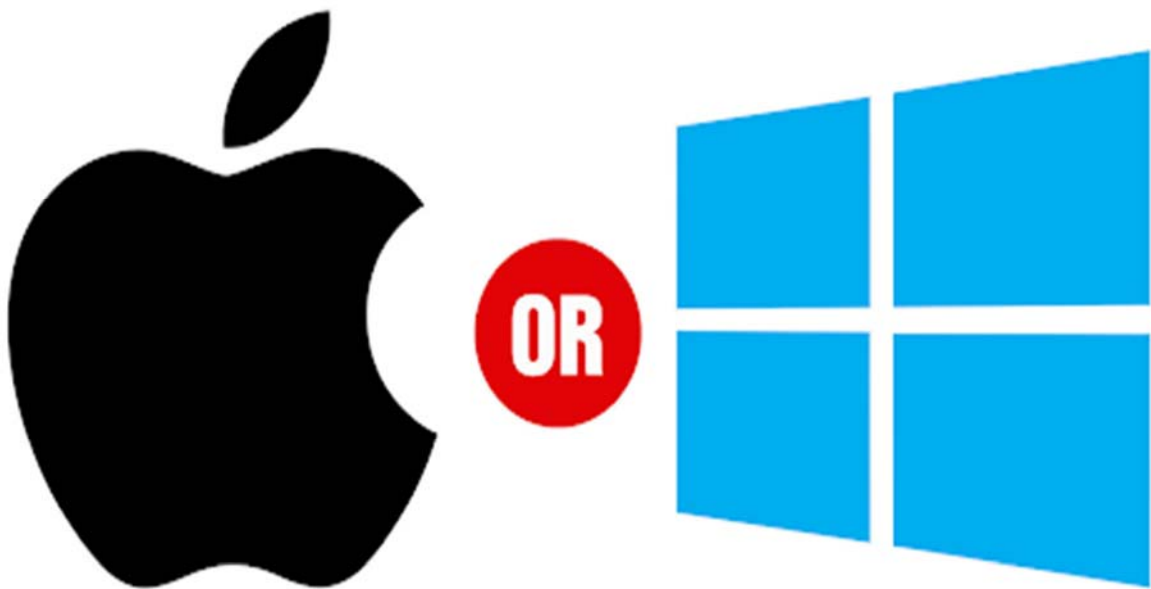


The Product Lifecycle



Great distribution is a prerequisite for a successful product.

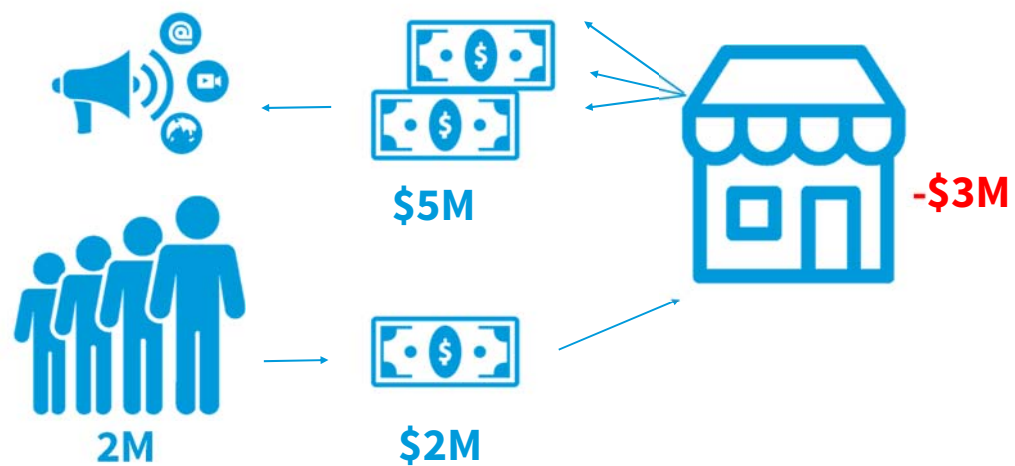
Great distribution can be a source of competitive advantage.



Go-To-Market

- How to reach target customers and achieve competitive advantage
- Trying to get to a place where your product generates more money per user than it spends acquiring the user on methods that scale to whatever your success criteria is

Go-To-Market Goal



Key Components of Go-To-Market

- Your customers
- Your product
- Product economics

Customer Channel

- Method of reaching and distributing to your customer
- Pick the right channel to reach your target customers
- Find a channel that uniquely unlocks growth cost effectively

Product as Distribution

- Your product can be part of your distribution strategy
- Good examples:
 - Hotmail
 - PayPal
 - Dropbox
 - Airbnb

Lifetime Value (LTV)

Lifetime profit from a single customer

Determining Profit



Sells for \$5



\$2 to make

$$\$5 - \$2 = \$3 \text{ profit}$$



$$\text{LTV} = \text{Profit per visit} \times \text{number of visits}$$

Determining Profit



\$2 to make

Sells for \$5

\$3 Profit



\$2 to make

Sells for \$100

\$98 Profit

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Product Economics

- Lifetime value of your customer
- LTV is total profit from a single customer
- Total, customer, and profit

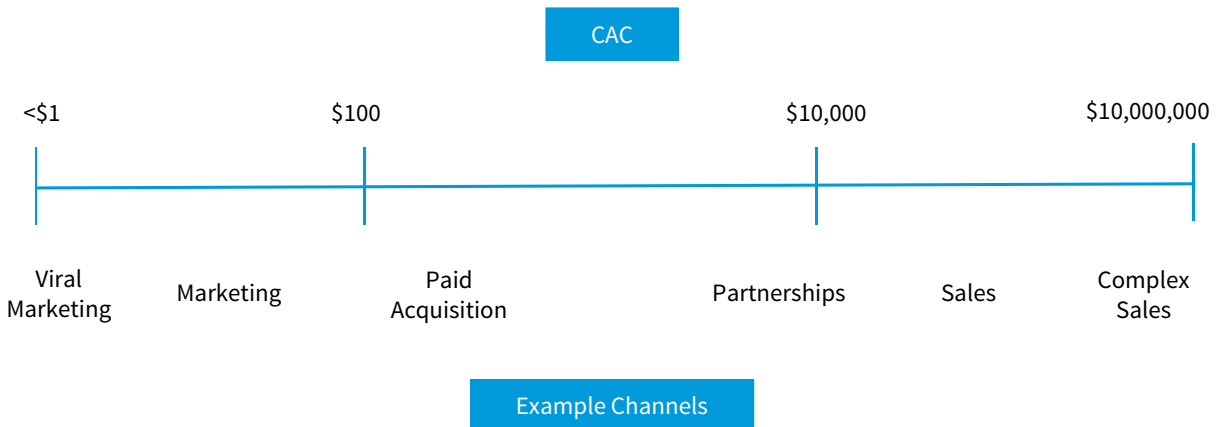
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Channel + Customer + LTV

Customer Acquisition Cost (CAC)

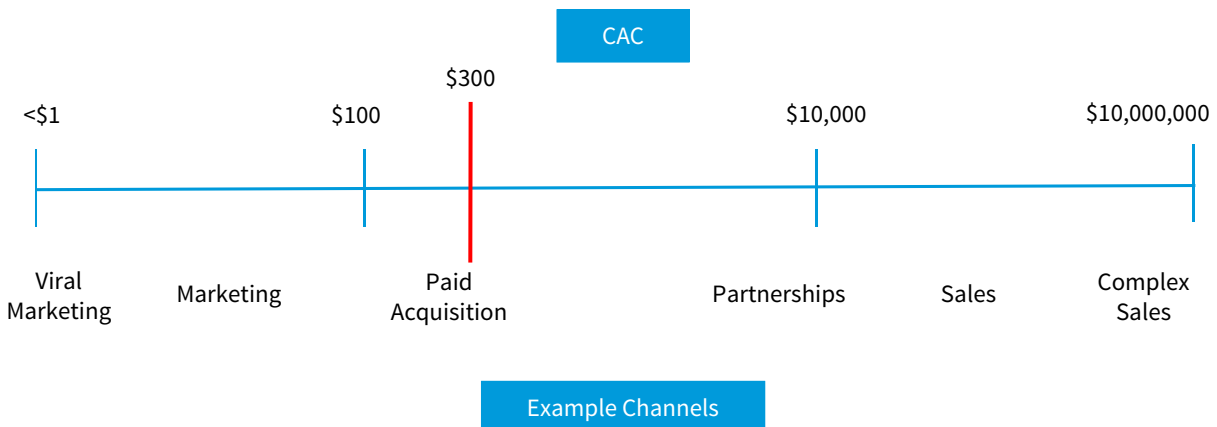
Metric used to determine cost to acquire a customer through a specific channel

Cost By Channel



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Product Economics Dictate Available Channels

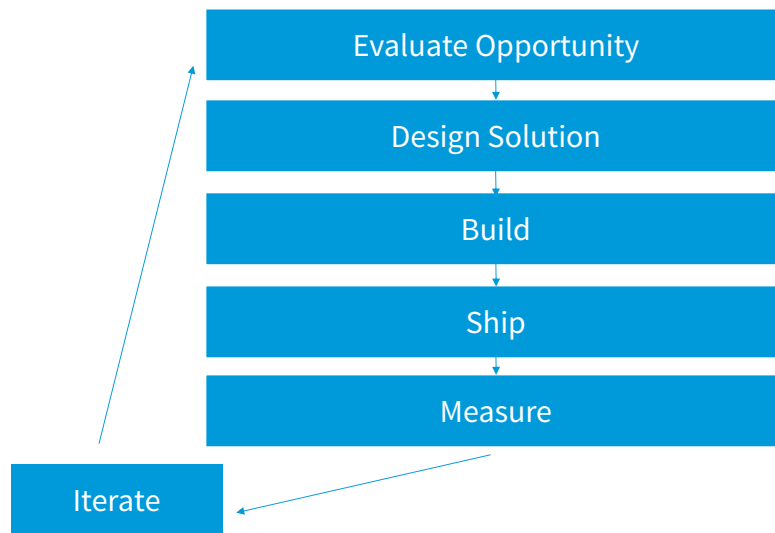


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Customer Acquisition Cost

- LTV of your product
- Identify best channel fit
- Pair customer to best channel fit

The Product Lifecycle



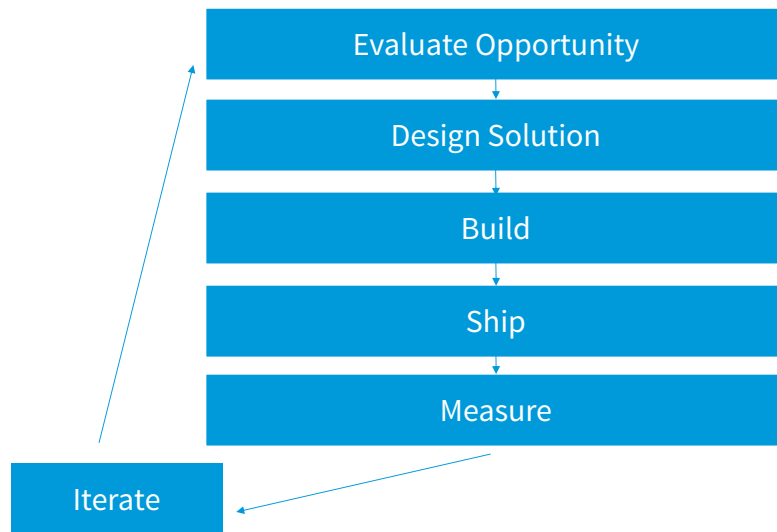
Go-To-Market Strategy

- Define success
- Components of GTM
- Lifetime Value
- Customer acquisition cost and channel fit

Roadmaps



The Product Lifecycle



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Product Roadmap

- Deliver as much value to customer and company as quickly as possible
- Value to Customer
 - Original problem you set out to solve
- Value to Company
 - Must be aligned with company's goals

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Product Roadmap

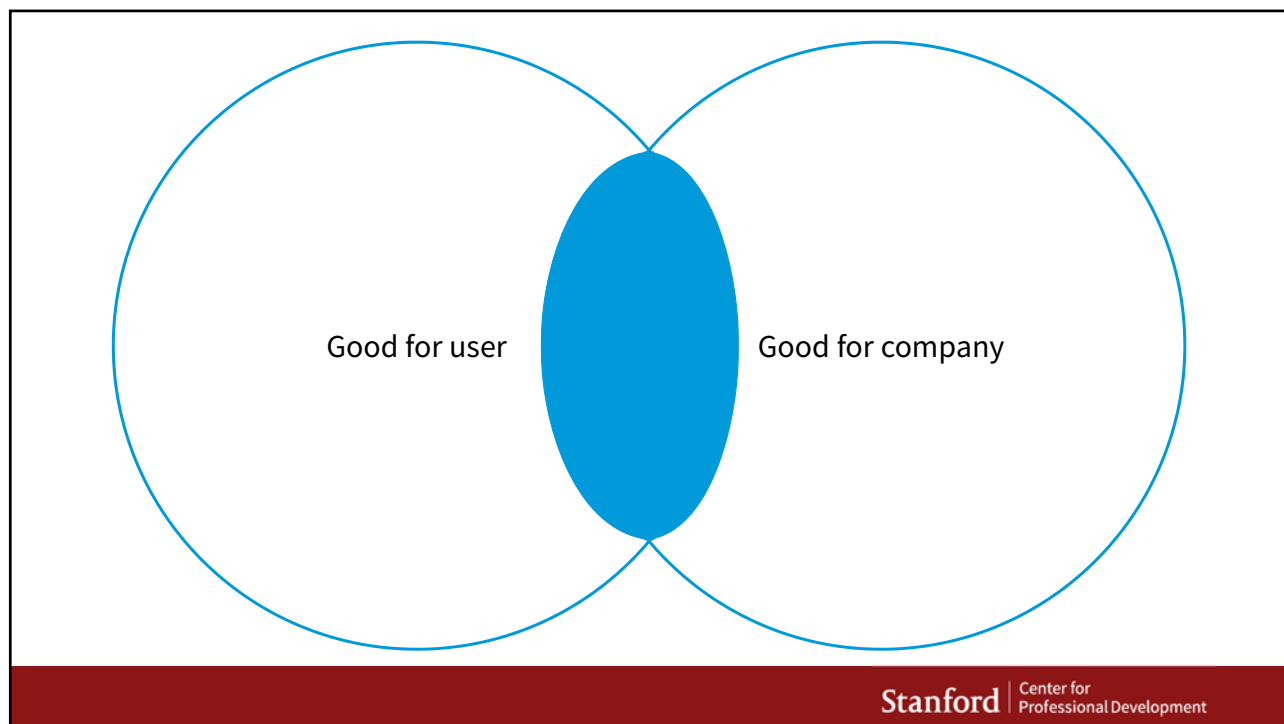
A living document outlining the future of your product

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Roadmap Tips

- Scope and measure what is known
- Prioritize big impact projects
- Spreadsheets are biased to what is known
- Theme: Major goal from your problem that is aligned to the company

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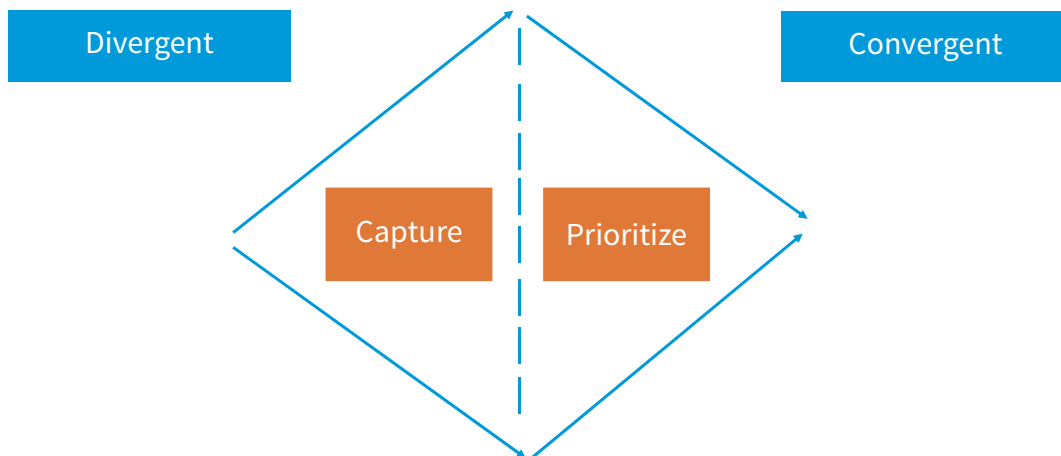
Developing a Theme

- Major goal from your problem that is aligned to the company
- Must be rooted in data
- Good themes tell a great story
- Good themes are easy to understand
- Good themes get everyone coordinated

A Good Theme

- Solving problems
- Measured and target outcomes
- Don't be selfish
- Prioritize based in data

Diamond Design



Fermi Estimation

Tool for determining potential impact

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Drake's Equation

$$N = R^* \cdot f_p \cdot n_e \cdot f_\ell \cdot f_i \cdot f_c \cdot L$$

Number of advanced civilizations in the Milky Way galaxy.

Rate of formation of stars.

Fraction of those stars with planetary systems.

Number of planets, per solar system, suitable for life.

Fraction of suitable planets where life actually appears.

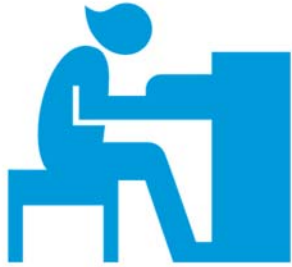
Fraction of suitable planets on which intelligent life emerges.

Fraction of civilizations that develop a technology that releases a detectable signs of their existence into space.

Length of time such civilizations release detectable signals into space.

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How many piano tuners were there in Chicago in 2009?



- The population of Chicago is 10M people
- Pianos are tuned once per year
- A piano tuner can perform ~1000 tunings per year

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How many piano tuners were there in Chicago in 2009?



Estimate:
225

Actual:
290

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Fermi Estimation

- Quick math leads to how big something might be
- Compare things that are difficult to reason
- Helps prioritize projects
- Tip: Don't get stuck on overprecision

How long would it take to walk from SF to LA?



400 miles from SF to LA

Walk 4 miles per hour

Walk 10 hours a day

Walk 40 miles per day

We'll be there in 10 days!

How long would it take to walk from SF to LA?



500 miles from SF to LA

Walk 4 miles per hour

Walk 10 hours a day

Walk 40 miles per day

We'll be there in 12 days!

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How long would it take to walk from SF to LA?



500 miles from SF to LA

Walk **2** miles per hour

Walk **12** hours a day

Walk 40 miles per day

We'll be there in 12 days!

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How long would it take to walk from SF to LA?



500 miles from SF to LA

Walk **2** miles per hour

Walk **18** hours a day

Walk 40 miles per day

We'll be there in 12 days!

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T-Shirt Sizing

Reduces over precision of time and cost estimates



Small



Medium



Large



Extra Large

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T-Shirt Sizing

Reduces overprecision of time and cost estimates



Small

Hours
Days



Medium

Weeks
Months



Large

Quarters



Extra Large

Years

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Prioritization

- Combination of data and judgement
- Deliver as much value to company and customer as quickly as possible
- Blending:
 - Projects are an investment portfolio
 - Create risk-adjusted way of achieving success

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Roadmaps and Prioritization

- What problem are you solving? Why is it important?
- Establish themes
- Identify projects within each theme
- Fermi estimation to measure impact
- T-Shirt sizing to estimate potential costs
- Make informed decisions on what to work on
- Risk-reward profile

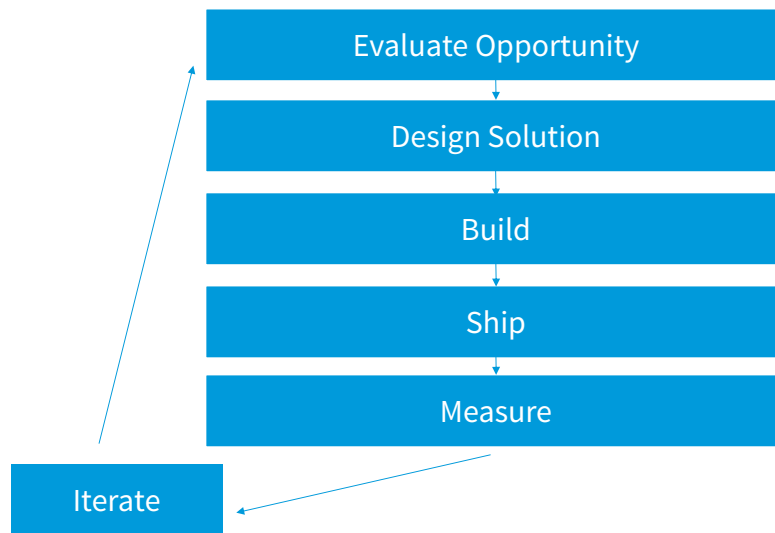
Build



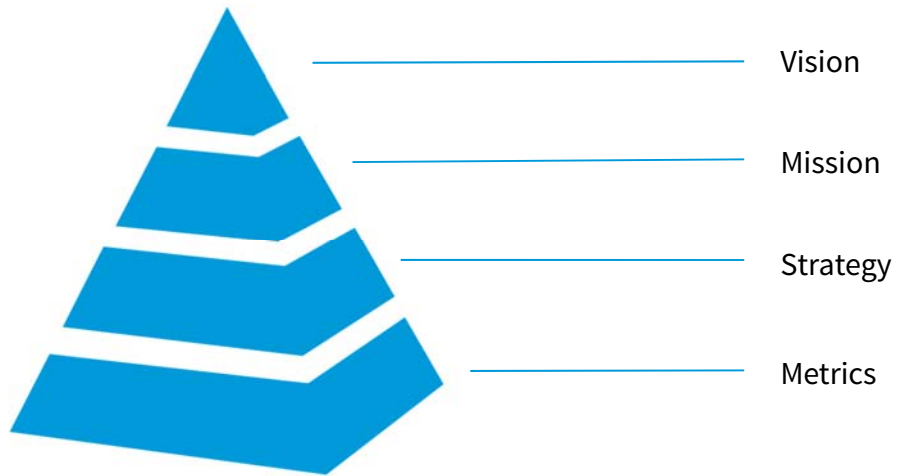
PM Responsibilities

- Set your vision
- Manage a portfolio
- Get Stuff done
- Manage the product lifecycle

The Product Lifecycle



Identify Your Vision



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Good Strategy Components

- What do you want to accomplish?
- What pieces do you need?
- How do you sequence the pieces?

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Host Success Mission



Support hosts



Guests can find
homes



Secure
transactions

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Host Success Mission



Great Home



Appealing Listing
Page



Tools, Education,
Insights for Hosts

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Host Success Mission



Great Product

Their Home &
Hospitality



Great Storefront

An appealing listing
page



Efficient
Operations

Tools, Education &
Insights

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Measuring Success

- Set an objective
 - Where do you want to be in 3 months?
- Set key results
 - Need to be measurable

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SF 49ers OKRs

Objective #1: Win the Super Bowl

Key Result 1: All players run a 7 minute mile

Key Result 2: Field goal scored +85%

Key Result 3: Beat the Green Bay Packers in June

Key Result 4: No injuries to our quarterback

Key Results for YouTube

Key Result 1:

Launch features to
enable instructors
to create more
engaging videos

Bad

Key Result 2:

Increase video
watch time from X
to Y

Good

Key Result 3:

Launch YouTube
VR experience and
grow VR catalog
from X to Y

Great

SMART Goals

Specific

Measureable

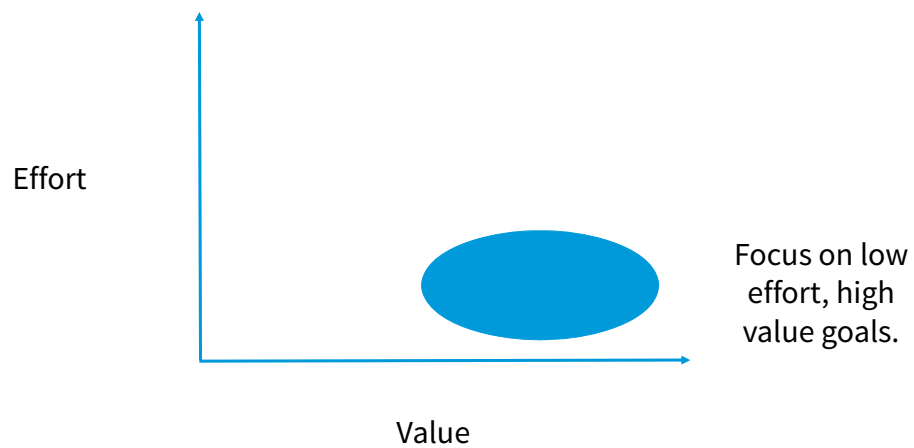
Achievable

Relevant

Time-bound

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Relevant Goals



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Get Stuff Done

- Strong handle on the product lifecycle
- Know you're solving the right problem
- Clear vision and mission statement
- Thoughtful strategy

Team Accountability

- Set very clear milestones
- You are quality control

Course Conclusion



Product Management Problem solving



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