Technology Start-ups
Lecture 1

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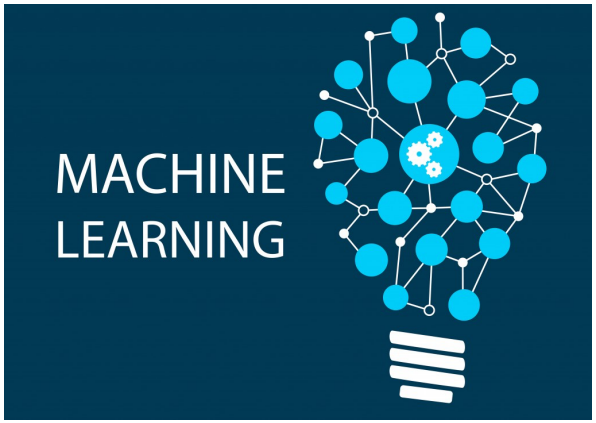
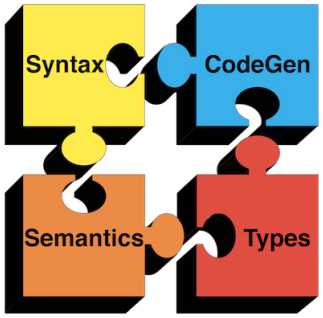
Bio of Instructor

- John Cavazos <cavazos@cis.udel.edu>
- Associate Professor, CIS
- Previously: JP Morgan Faculty Fellow, Institute for Financial Services Analytics
- Startup Experience
  - Founder and CEO, Cyber 20/20 Inc.
  - Mach37 Accelerator program
  - NSF I-Corps program

My Research





COMPILERS

Why Take This Class? (1/2)

- Interested in starting or working at a startup?
  - 9/10 startups fail!
  - Derisk your product

Why Take This Class? (2/2)

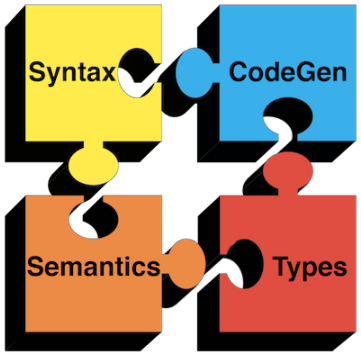
- Interested in succeeding in an established company?
  - Many new products and/or development efforts fail!
  - Derisk your ideas

Lecture 1: Overview

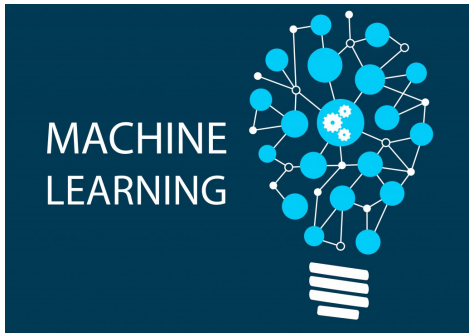
- Structure of Course
- Administrivia
- Running Lean (Chapter 1)
- Let's Get into Groups

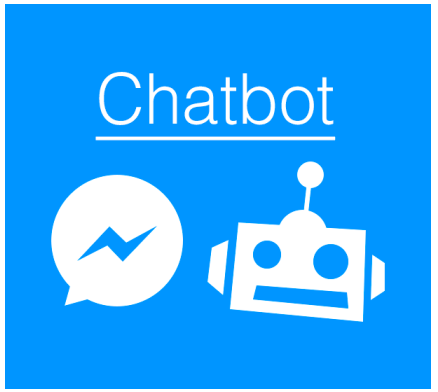
Project: Build A Start-up

1. Concept/Idea



COMPILERS





Project: Build A Start-up

2. Build-Measure-Learn Loop

Lean Canvas

1 Problem top 3 problems Existing alternatives	**4 Solution** top 3 features **8. Key metrics** e.g. AARRR	**3 Unique value proposition** Clear compelling message. Why makes you different? Why pay attention to you?	**9 Unfair advantage** Can't be easily copied or bought **5 Channels** Path to customers	**2 Customer segments** Target customers Early adopters?
7. Cost Structure Customer acquisition, distribution, people, etc.			**6. Revenue streams** Revenue model, life time value, revenue, gross margin	

Product ← → Market

Structure of the Course

- Lectures by myself on lean startup
- Guest lectures on other important aspects
- Starting in couple weeks
  - Student presentations
    - Present research paper on related tech
    - Profile one technology startup
  - Project status updates

Project Status Updates?

- Students create a startup
  - Small groups of students per startup
  - Project status
    - Present evolving lean canvas
    - Discuss status on tech development
    - Discuss customer discovery interviews
  - Project reports
    - Due midterm and end of semester
    - Work proportional to size of team

Project 1: Design

- Choose a topic of interest (from list instructor specifies)
- Ideation and design
  - Extensive wire frame design
  - Website
- Project Report
  - ~2 pages per team member
  - Template available online (font size, margins,etc.)
- Project hand out available soon

Project 2: Implementation

- Extension of Project 1 (recommended)
- Extensive programming and/or analysis
- Deliverable: Report (~2 pgs per team member)
  - Conference paper format
  - Project presentation (~10 mins)
- Project handout available in a couple weeks

Basis for Grading

- Your individual paper presentations (20%)
- Class Quizzes (5%)
- Team Projects (75%)
  - Project 1 (30%)
    - Presentations and Project Report
  - Project 2 (45%)
    - Presentations and Project report

No Midterm or Final!

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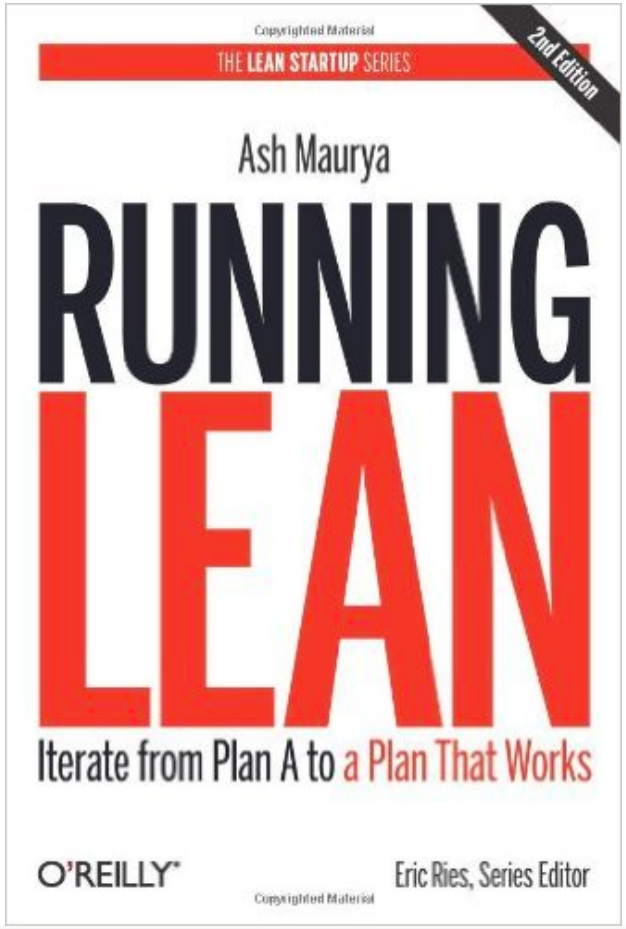
Background/References

- Should be familiar with a programming language
- Textbook



Project Guidelines

- Reports should be
  - Well-written and formatted correctly
  - Properly referenced
  - Results should be presented with graphs
  - Intellectual merit most important factor
- Negative result is fine
  - However, must demonstrate something interesting

Expectations

- Class participation
- Ask questions
- Challenge all speakers.
- NOT a lecture class or a passive experience. ACTIVE learning.
- Most common project problem: Not getting started
- *Ask for help if you need it!*
  - I will hold office hours Saxby's on Amstel Ave.
    - Email *first* me whenever you want an appointment.
  - Require checkpoints to show me status!

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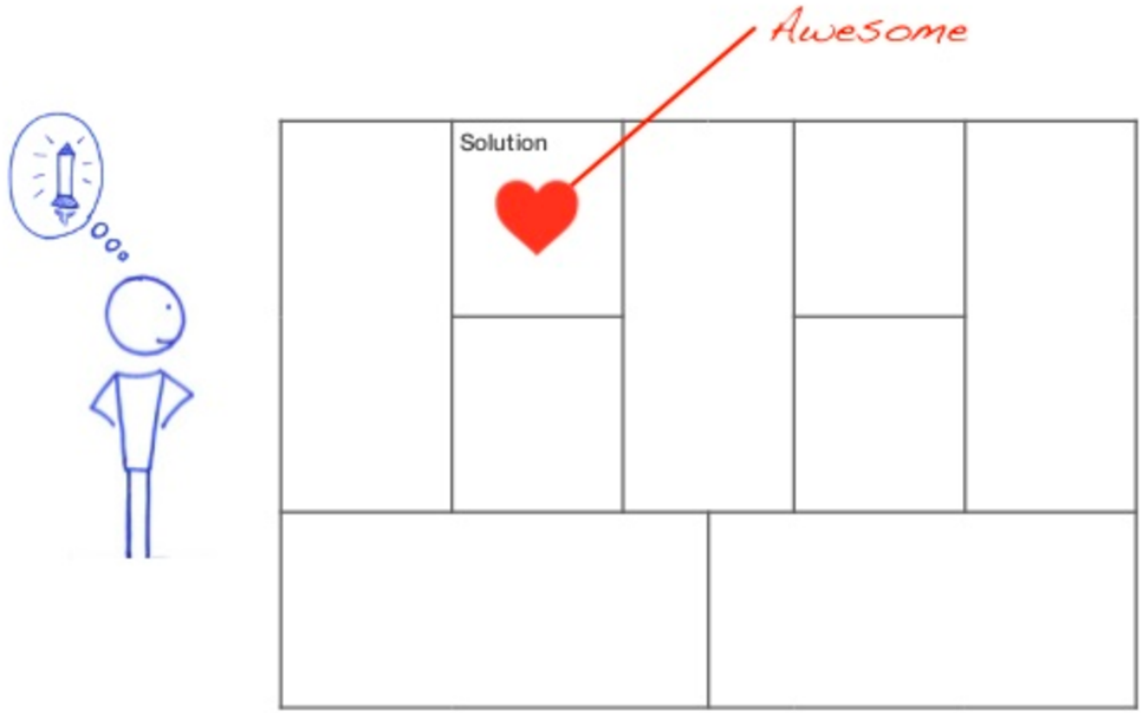
Why do startups fail?

Because they build the wrong product!

Why do startups build the wrong product?

- You fall in love with your solution

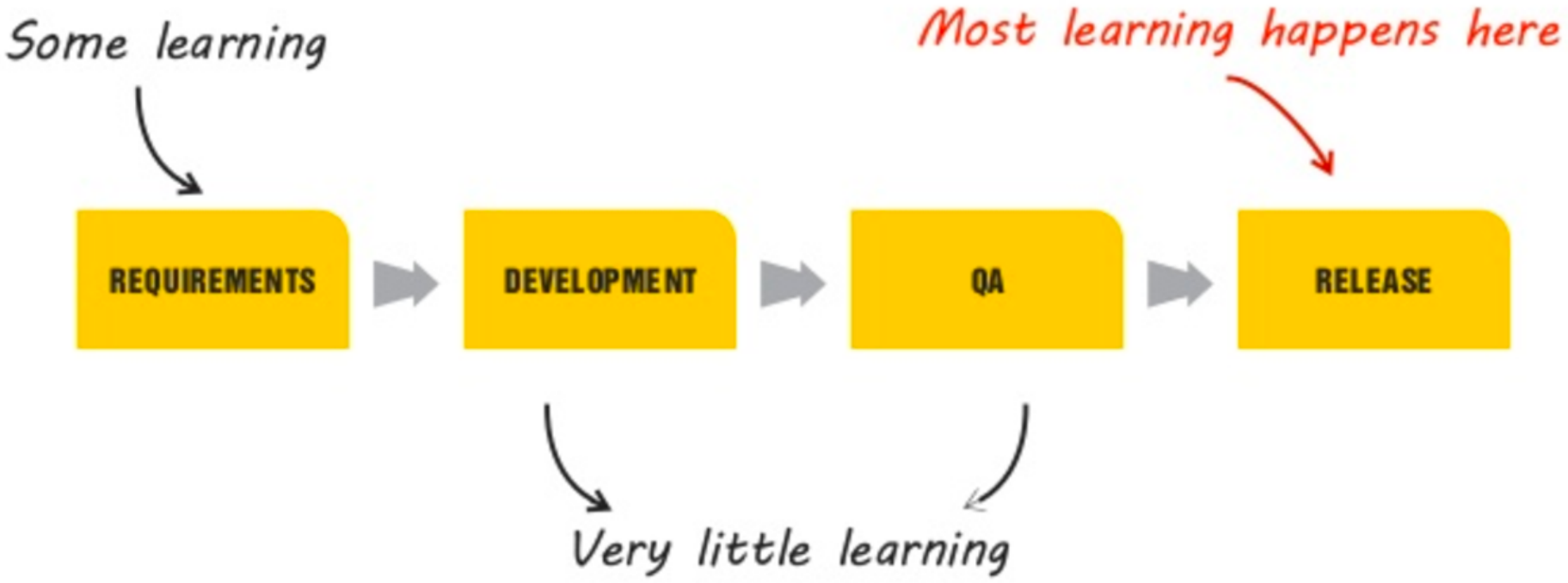


We built it and we didn't expect it to be a company, we were just building this because we thought it was awesome.

- Mark Zuckerberg

Why do startups build the wrong product?

- Product development gets in the way



Why do startups build the wrong product?

- Startups don't listen to customers

If I had asked people what they wanted,
they would have said faster horses.

-Henry Ford

It is not your customer's job to know
what they want.

-Steve Jobs

How do startups build the right product?

Chapter 1: Meta-Principles

Use the Lean Startup methodology!

Document your Plan A

Identify the riskiest parts of your plan

Systematically test your plan

Chapter 1: Meta-Principles

Business model vs Business plan

Business Model

- A single diagram
- 15 minutes to develop first draft
- Iterate until product/market fit achieved
  - Learning by “Getting out of the building”

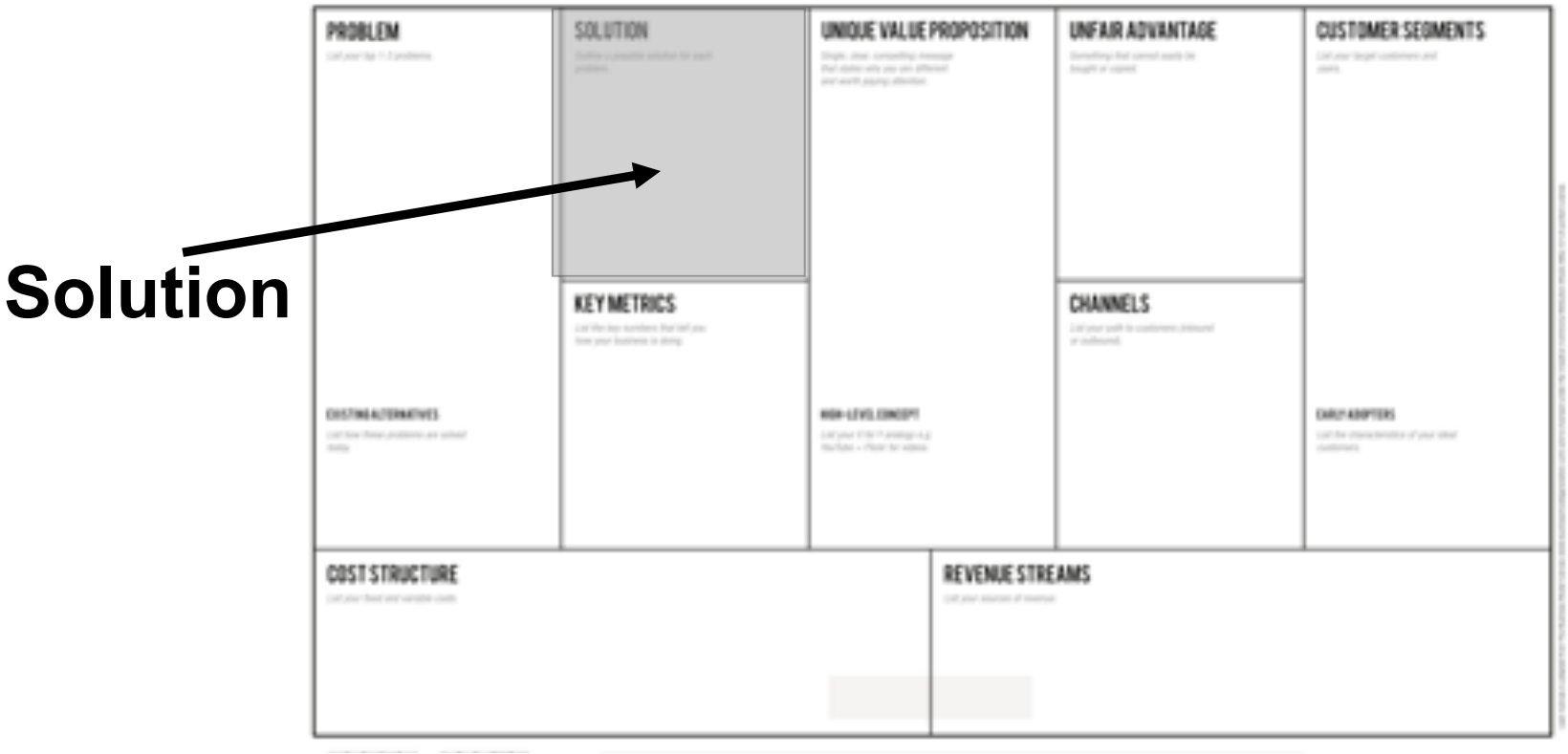
Lean Canvas

Business Plan

- A long document
- Often takes weeks to months to complete
- Little to no customer interaction
  - “Stay in the building”

Chapter 1: Meta-Principles

Step 1: Document your Plan A



Note: Your Plan A is often wrong!

Chapter 1: Meta-Principles

Step 2: Identify the Riskiest Parts

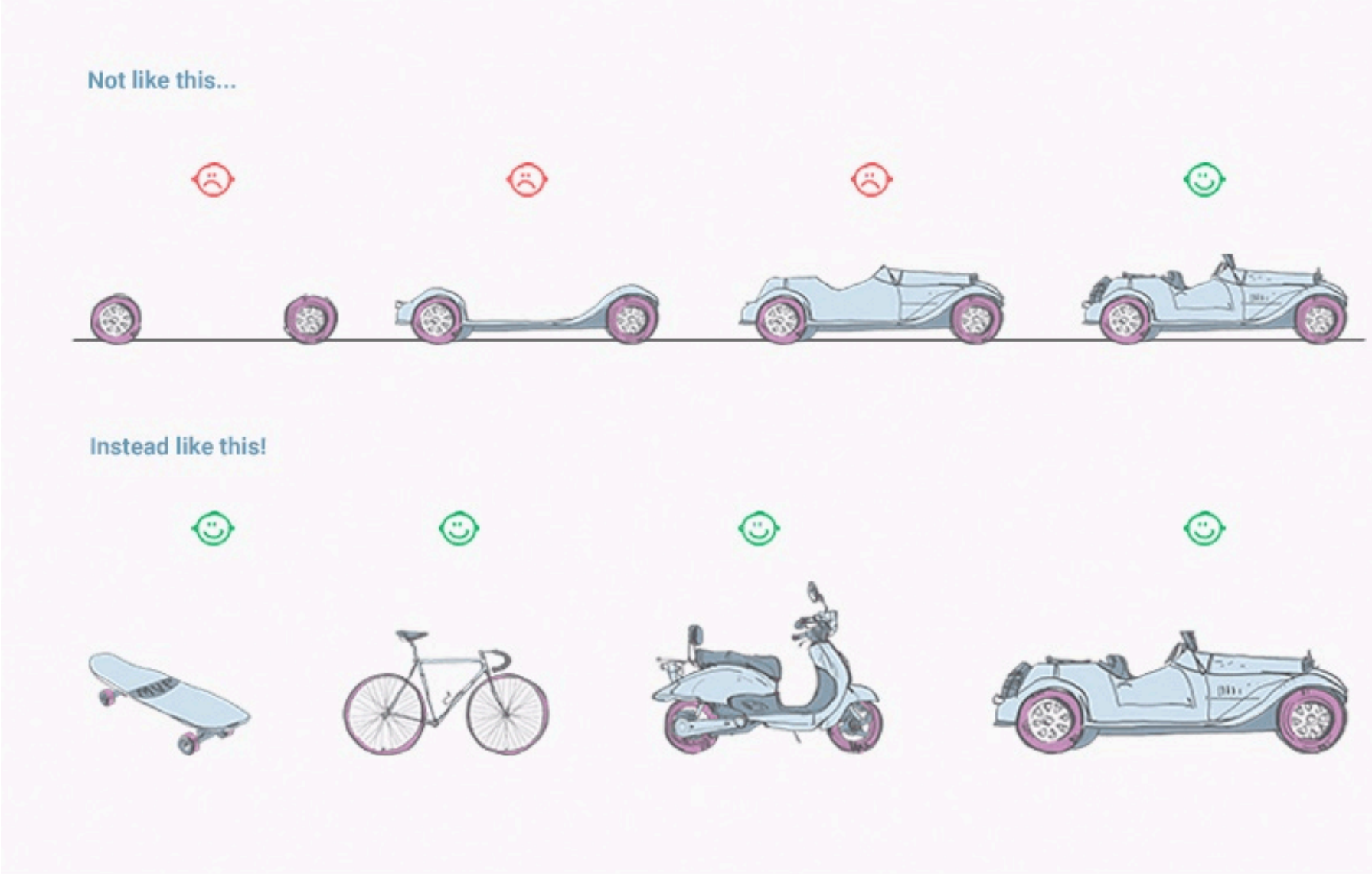
Three Stages of a Startup

Problem/Solution Fit

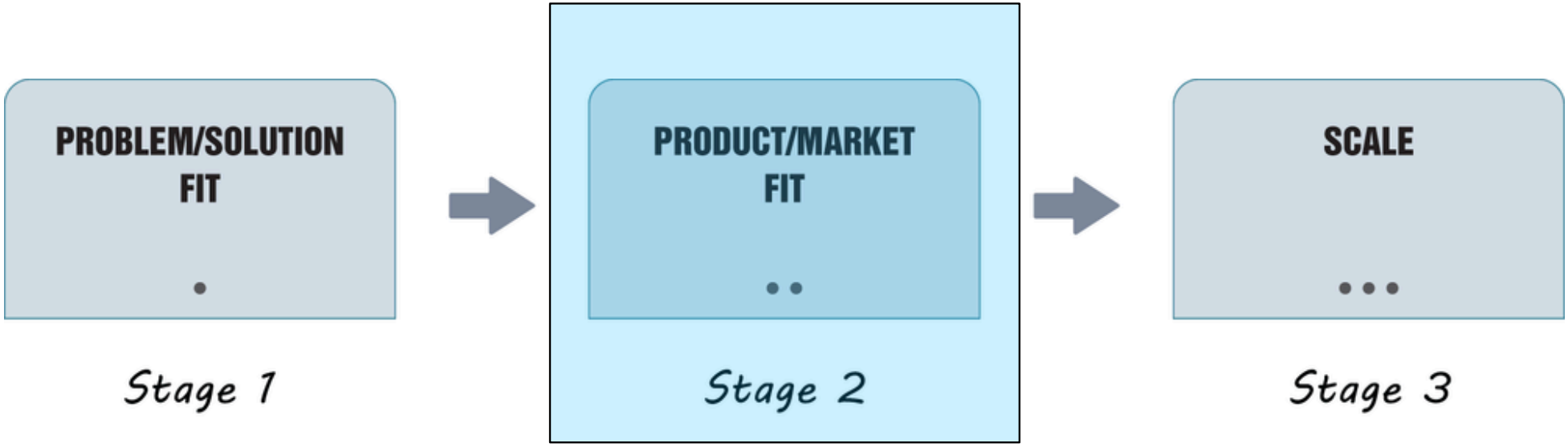
Stage 1: Do I have a problem worth solving?

Decide what to build in the minimum viable product (MVP).

Minimum Viable Product (MVP)



Product/Market Fit

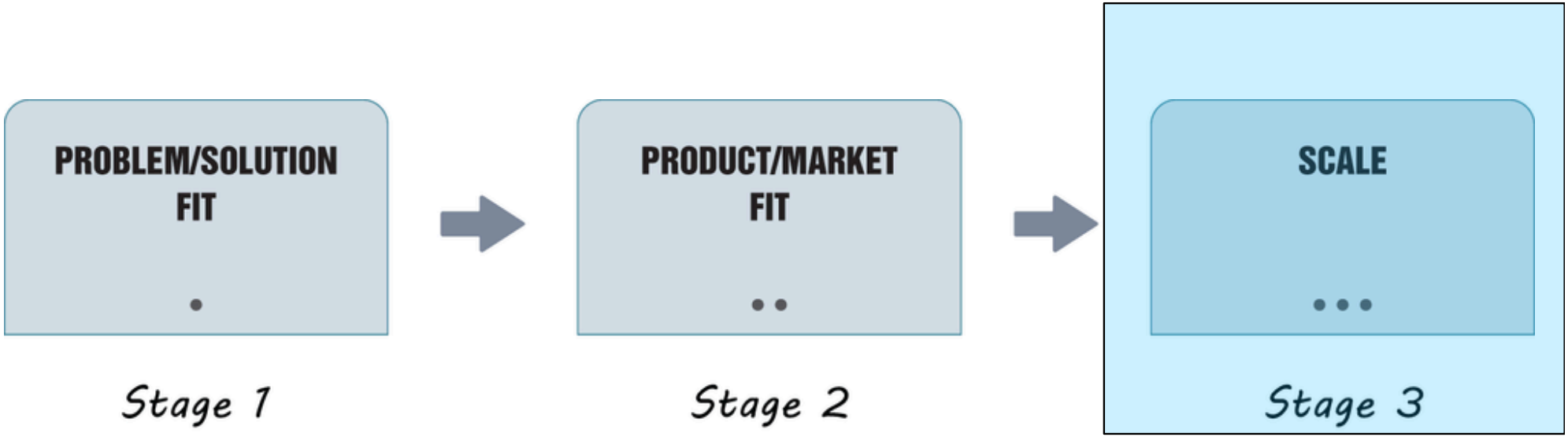


Stage 2: Have I built something people want?

Show MVP to customers.

Don't push features. Features should be pulled!

Product/Market Fit



Stage 3: How do I accelerate growth?

Scaling your business model.

Step 3: Systematically test your Plan

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Let's get into groups

Based on a Concept or Idea