

Software Startups

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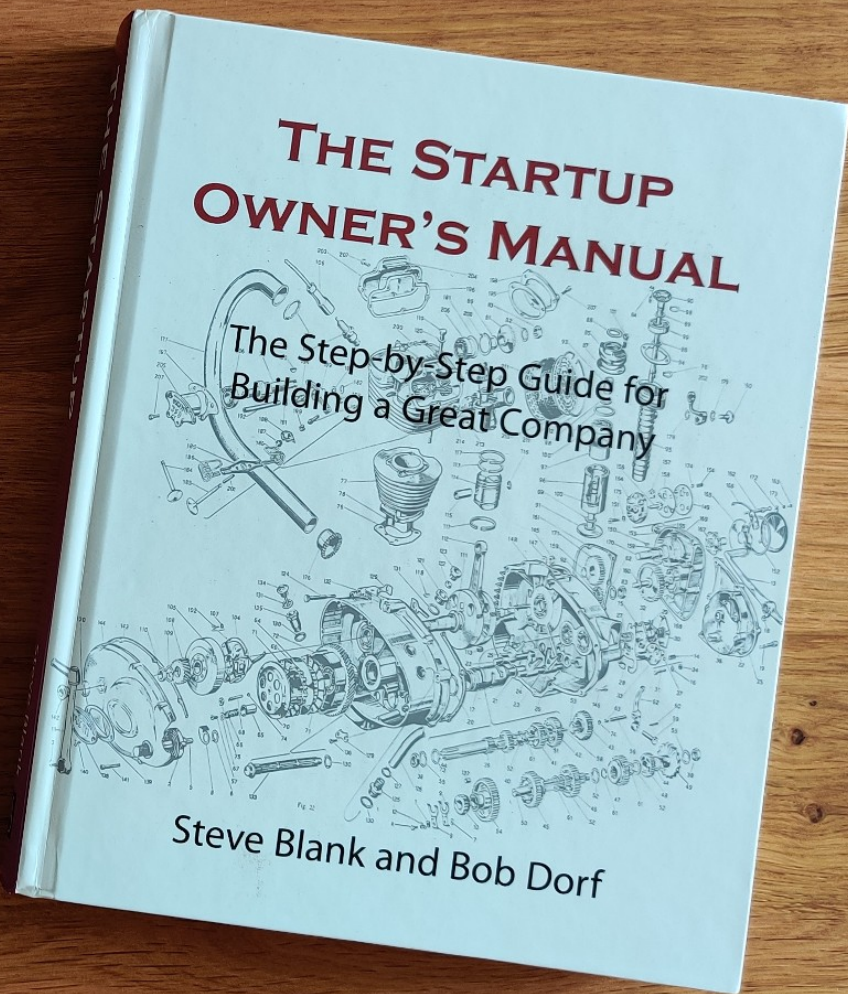
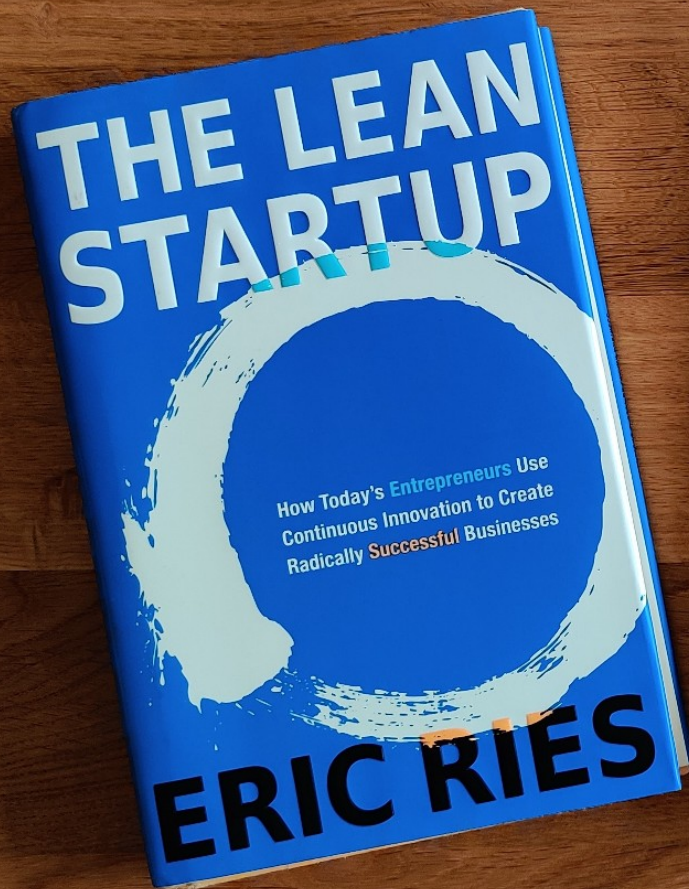
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Agenda

1. Definition (startup)
2. Customer development
3. Customer discovery
4. Customer validation
5. Startup metrics

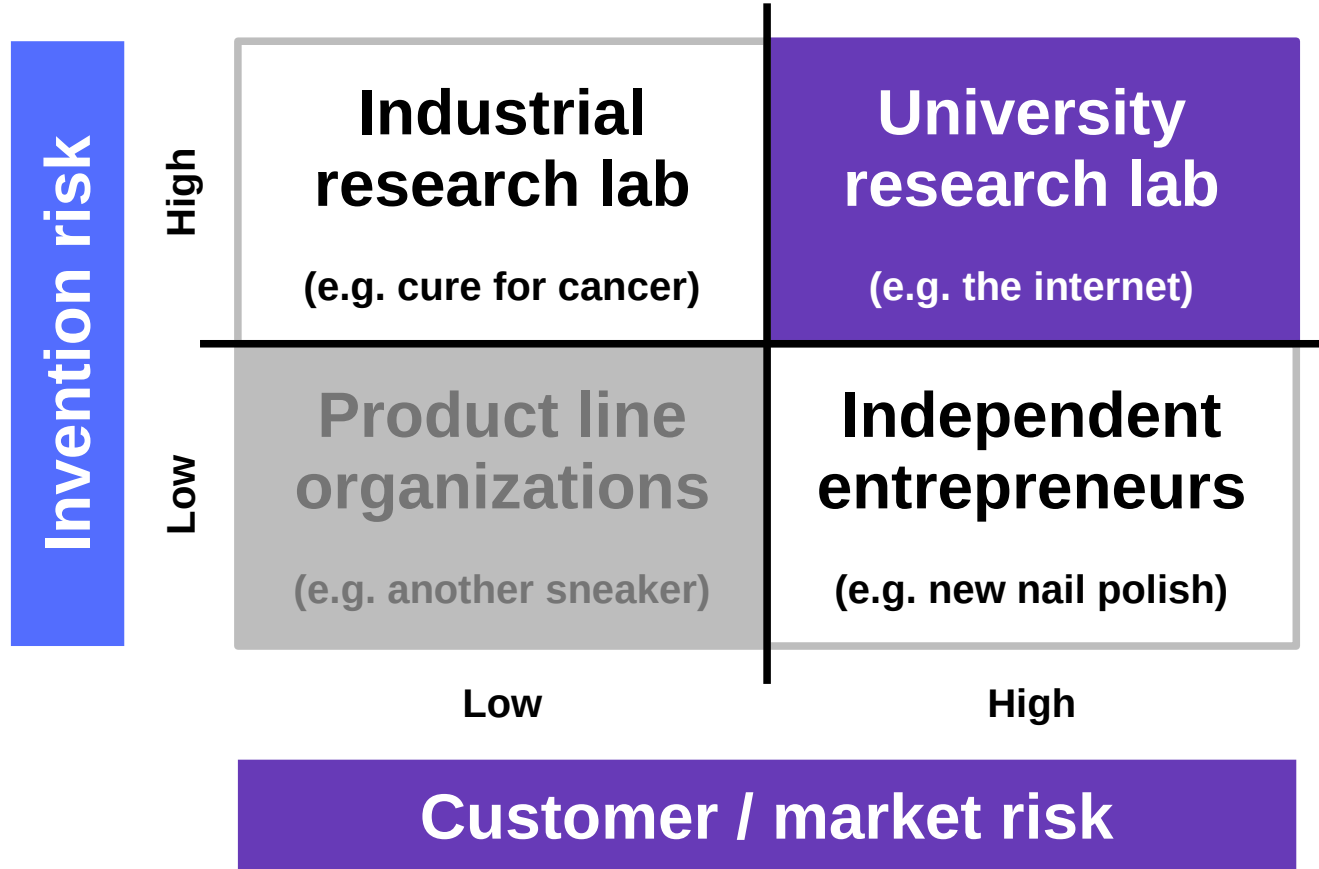


1. Startup Definition

What is a Startup?

- A startup
 - Is an organization in search of a viable business model
 - Is not a small version of a large company

Sources of Innovation and Their Risk Profiles



2. Customer Development

The Road to Failure

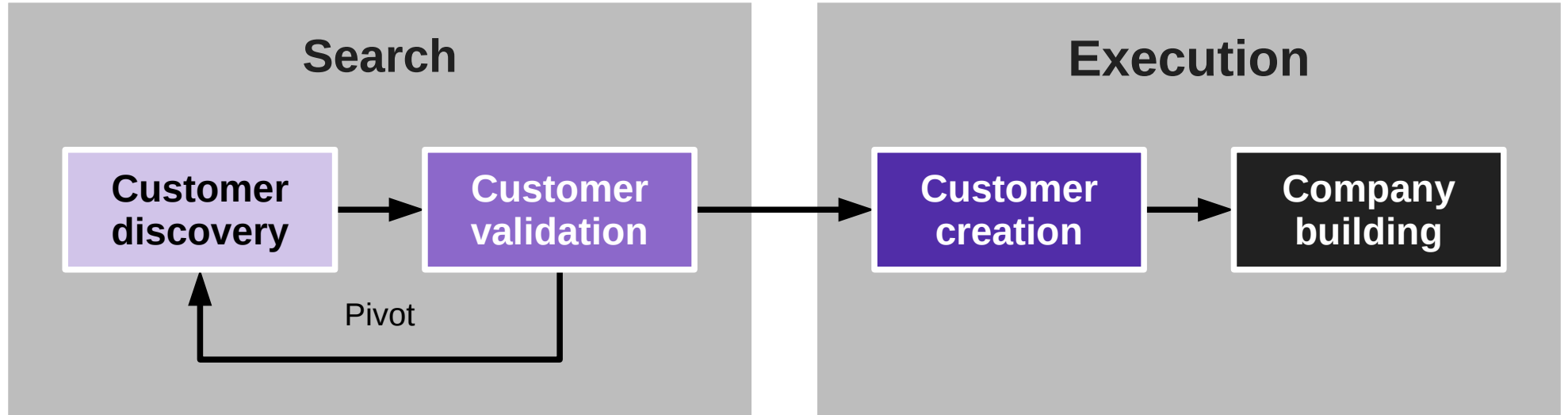
- Because you have this great idea
 - You know what the customer wants or needs
 - You know what features satisfy the customer
 - You don't need to allow for iteration and learning
 - You can set a launch date and work backwards
 - You can already focus on execution and efficiency
 - You can bring in people from established firms
- All everyone needs to do is to execute your plan

How to Avoid Failure

- Establish and follow a structured process of incremental learning where
 - A structured process is a process of incrementally covering the search space
 - And learning is a process of testing and evaluating hypotheses
- You therefore start with an idea, but do not assume it is true

**“There are no facts inside your building.”
(various authors)**

Customer Development [BD12]



The Four Steps (“to the Epiphany”)

1. Customer discovery

- Incrementally build out a business model by generating hypotheses and testing them

2. Customer validation

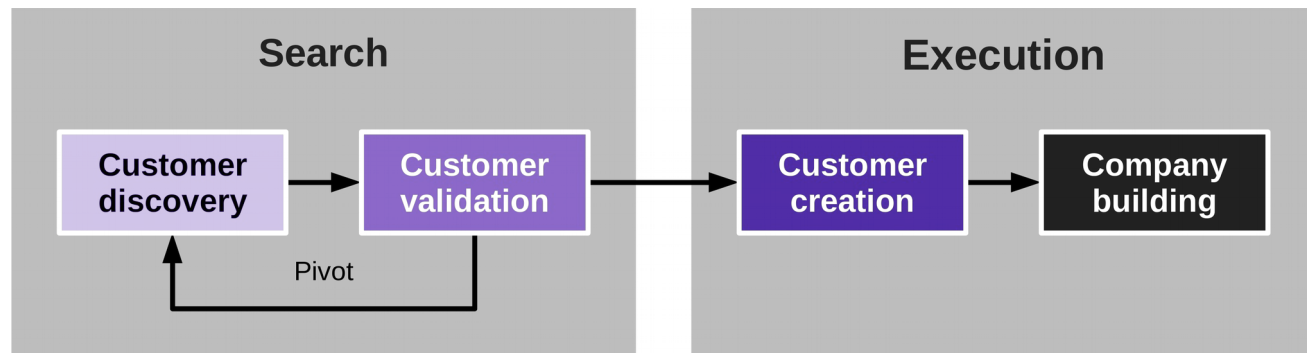
- Incrementally build out the “discovered” business model by testing whether it scales

3. Customer creation

- Build demand, drive it through the channel, and scale the business

4. Company building

- Transition from startup to company by focusing on execution

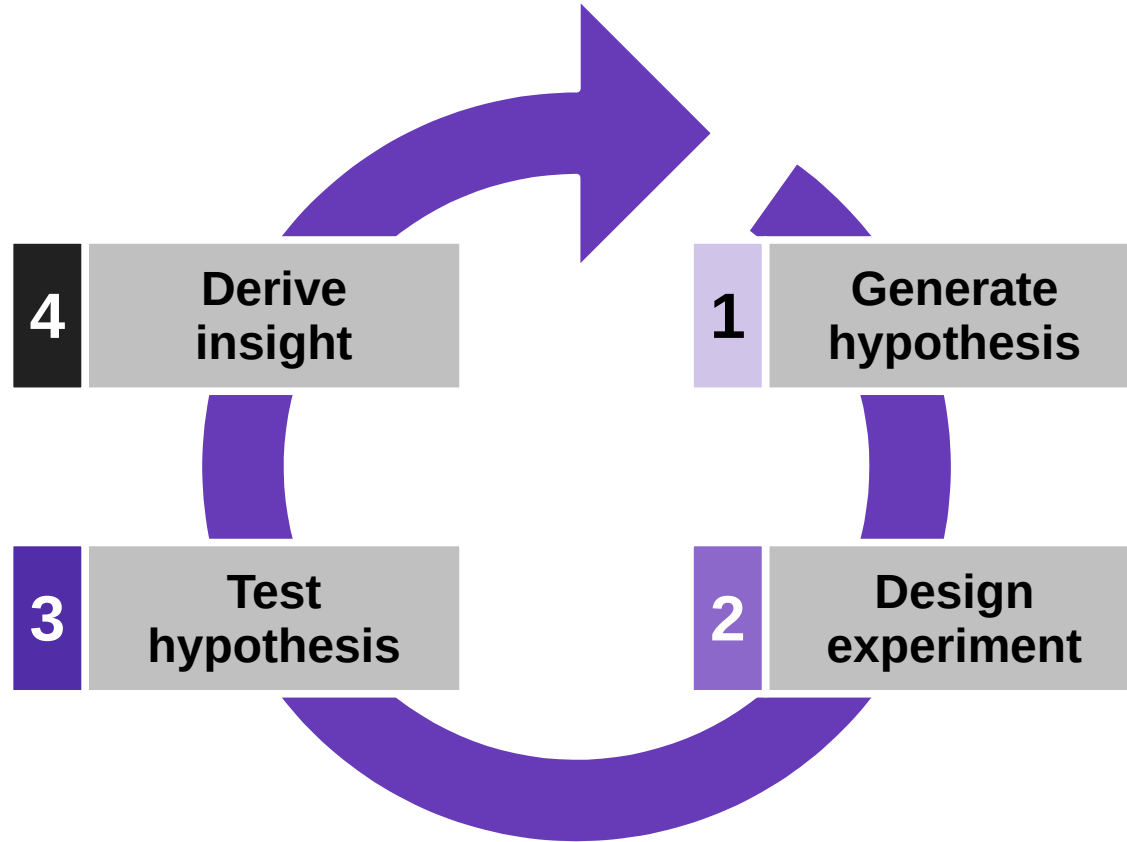


The Two Challenges of the Search Process

1. Generating and testing one or more hypotheses about a business model
2. Finding (local) maxima within a large business model search space [1]

[1] Finding maxima = hill-climbing = expanding scope = building out

1. Hypothesis Generation and Testing

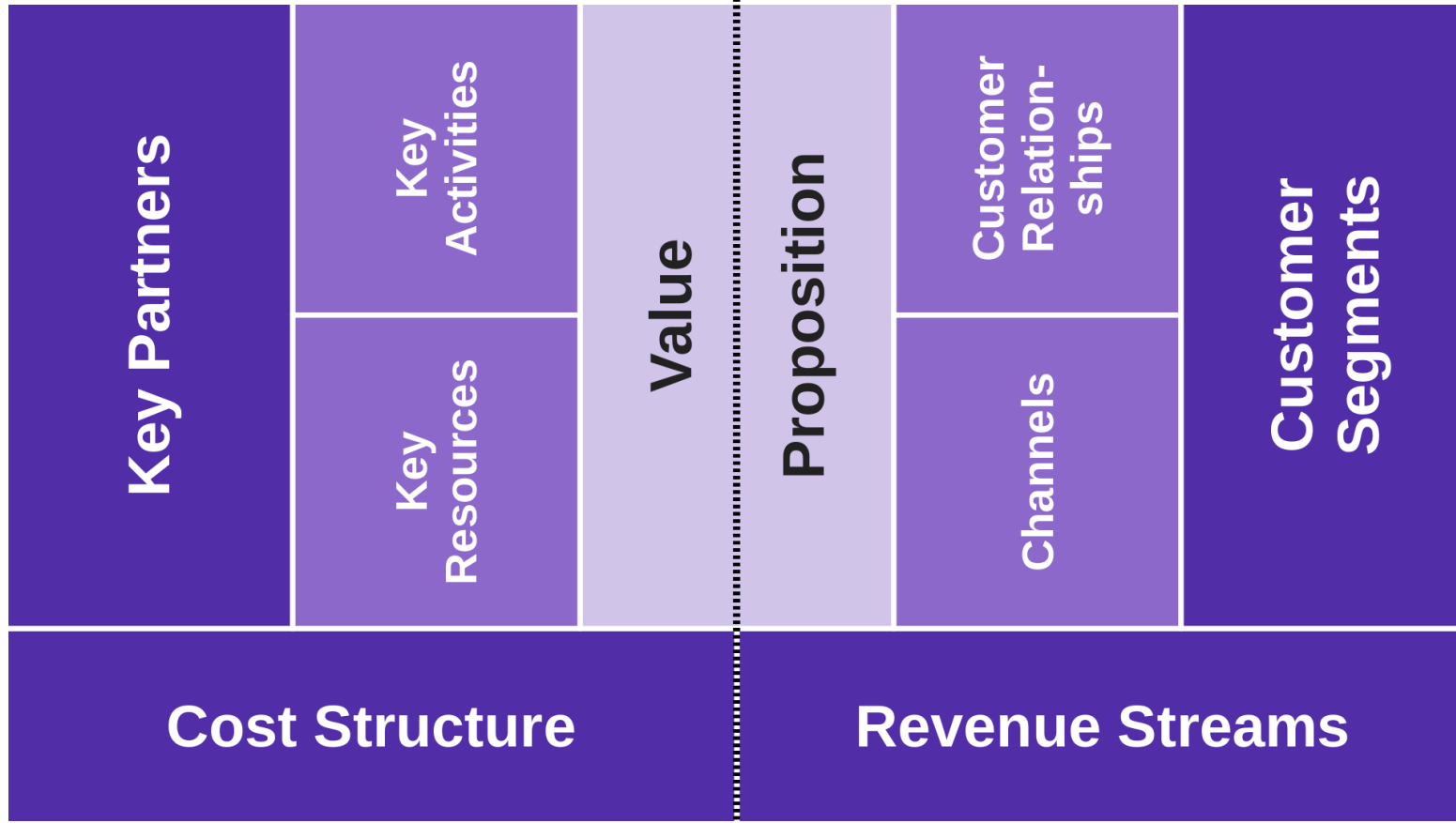


2. Finding Maxima in the Search Space

- The building-out process tries to efficiently cover the overall search space
 - Choose sets of hypotheses that are mutually exclusive, completely exhaustive (MECE)
 - Incrementally cover the relevant business model (sub)space
 - Revise business model where necessary

The Role of the Business Model Canvas (BMC) in the Search

**Operations and
production**



**Revenue
generation**

The Business Model Canvas Over Time



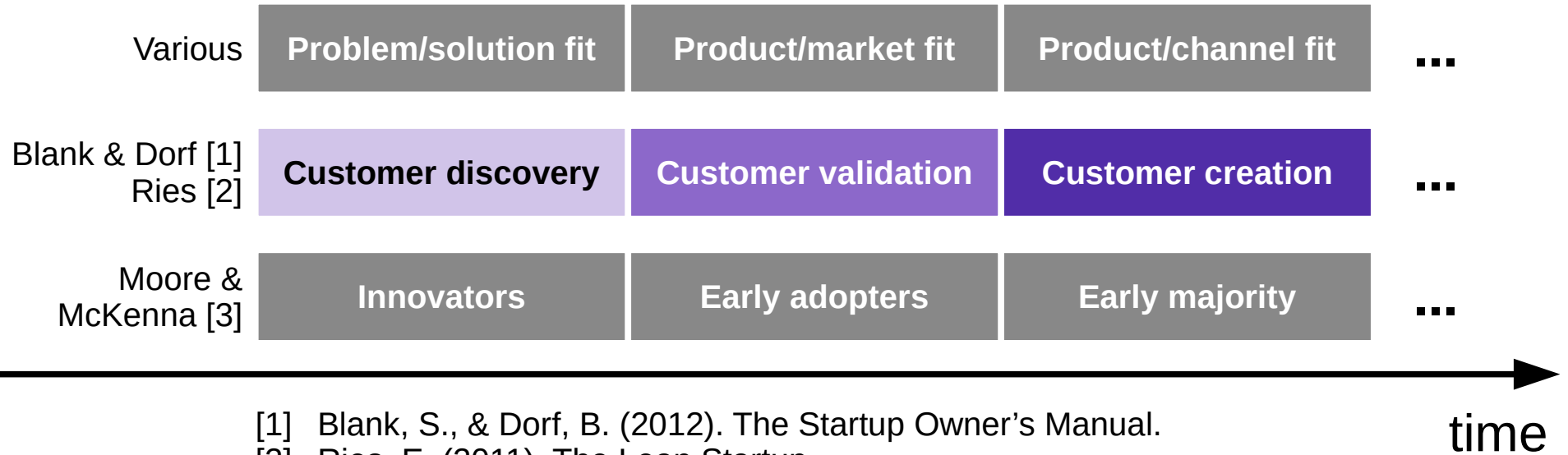
Pivoting

- A pivot
 - Is a change of direction
 - Based on a change in the underlying assumptions (idea) of the business
 - Basically, you have been climbing the wrong hill
 - Is triggered by experimental learning
 - Is not a failure

Benefits of “Customer Development” Approach

- Time efficient
- Resource efficient
 - Both capital and labor
- Still, an efficient search requires experience

Model Correlations



[1] Blank, S., & Dorf, B. (2012). The Startup Owner's Manual.

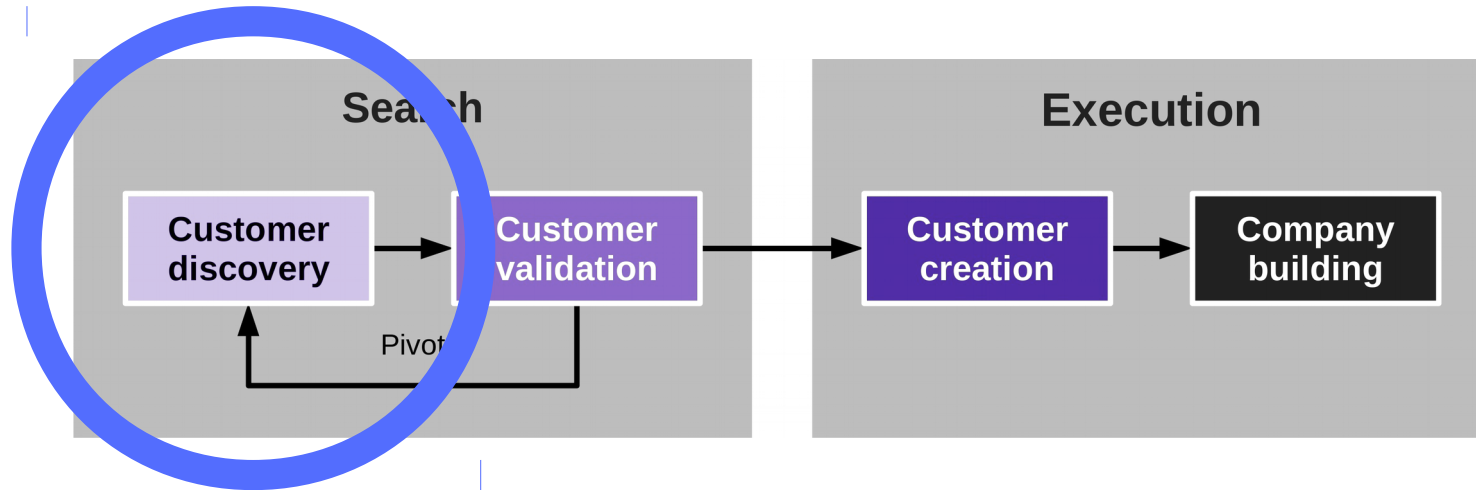
[2] Ries, E. (2011). The Lean Startup.

[3] Moore, G. A., & McKenna, R. (1999). Crossing the Chasm.

3. Customer Discovery

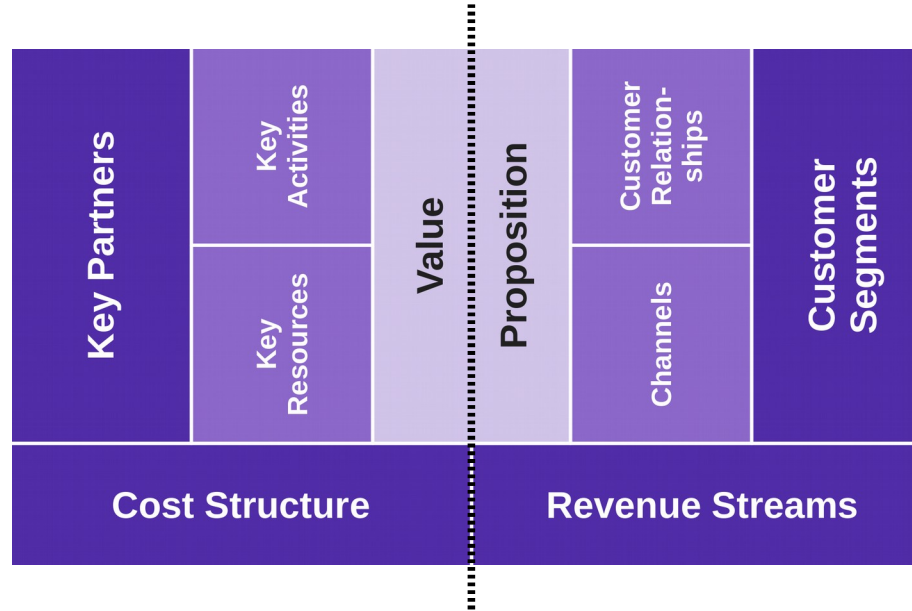
Customer Discovery

- Customer discovery is a search process that
 - Tests whether the hypothesized business model fundamentally works
- Problem / solution fit
 - Is the matching of a value proposition with a customer segment



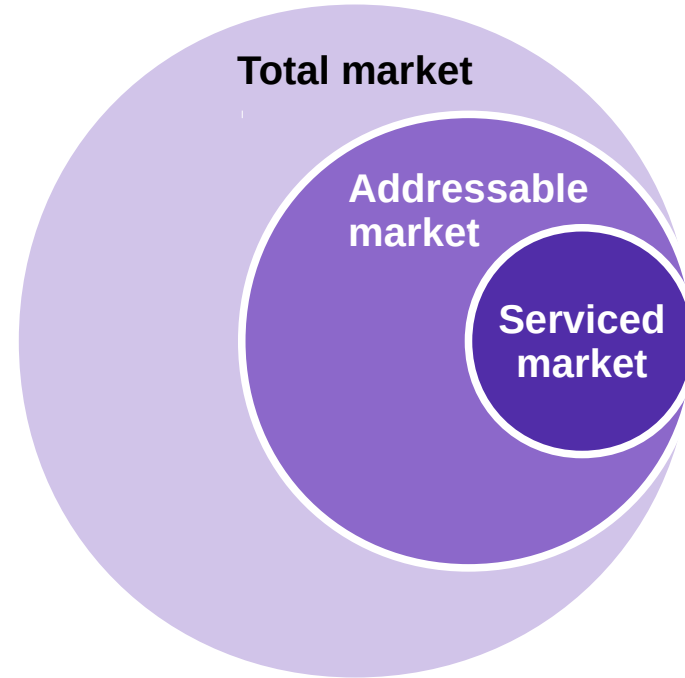
From Product Vision to Business Model

- Founders often have a product vision
 - Assumed value proposition for customers
- But what about
 - Customer segments
 - Channels
 - Customer relationships
 - Revenue streams
 - Key partners
 - Key resources
 - Key activities
 - Cost structure

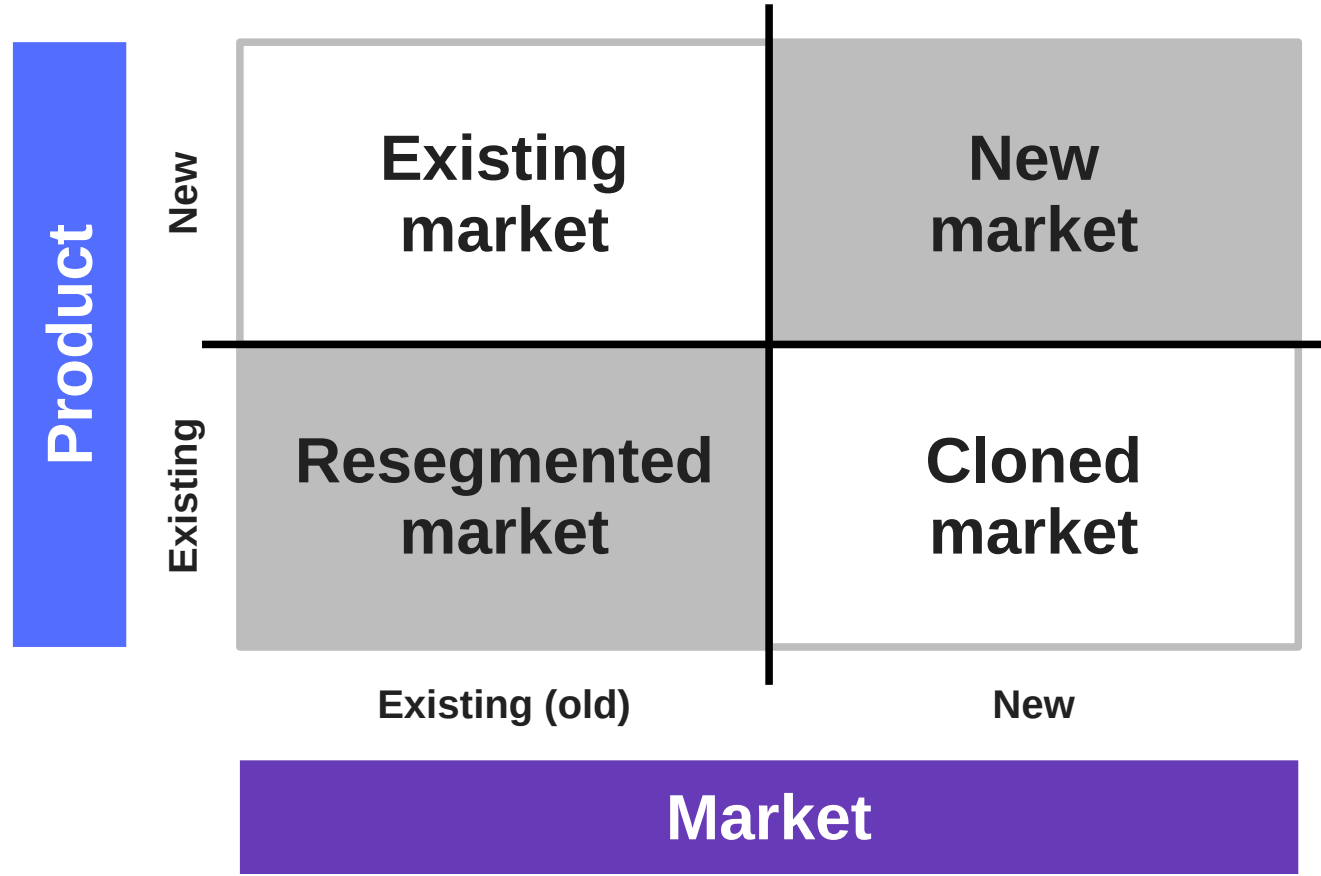


Start the Search with Market Sizing

- Start with a market size assessment
 - Too small a market
 - Makes you unfundable through VCs
 - May not meet your own expectations
- This way, you start in a good spot



Market Types and Business Models

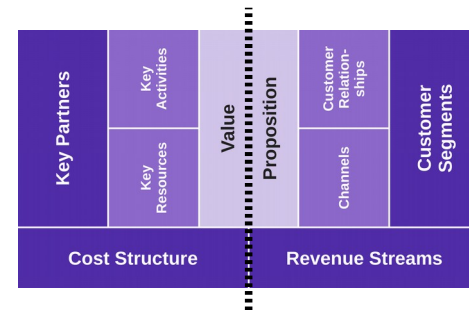


The Impact of Different Market Situations

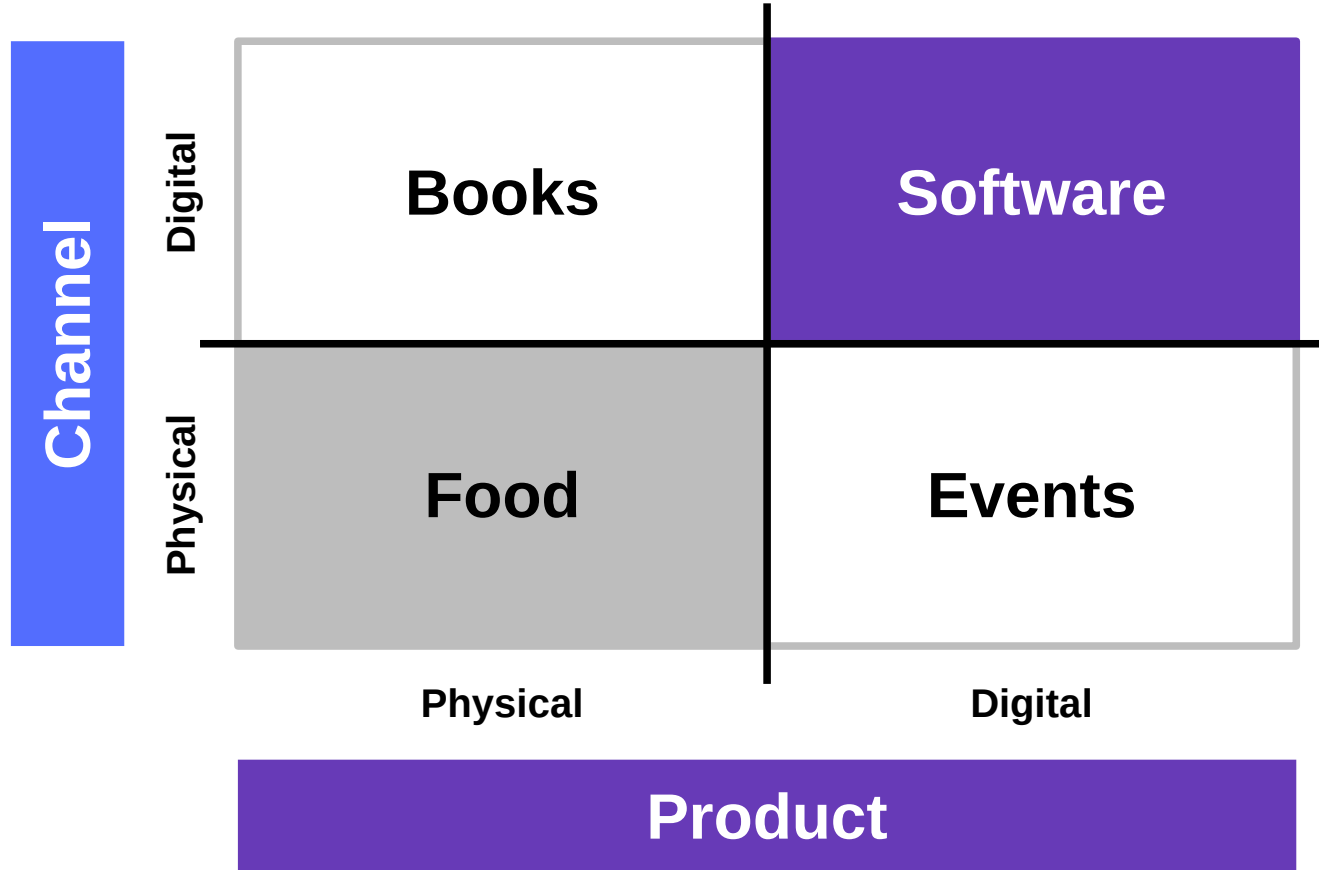
- A new product in an existing market
 - Market is known, little uncertainty
 - Product has efficiency gains
- A new product for a new market
 - No market yet; evangelism needed
 - Breakthrough product
- Resegmenting an existing market
 - Market is known, little uncertainty
 - Product focus on low-cost or niche
- Cloning into a new market
 - Market can be reasonably guessed
 - Product is well understood

1. Generate Hypothesis (Customer Discovery)

- Turn the product vision into a proposed business model
 - Using the business model canvas
- Turn the business model into testable hypothesis
 - Write short summaries for each hypothesis
- Align each hypothesis with a BMC section
 - Value proposition (problem)
 - Customer want/need
 - Channels
 - Value proposition (market type)
 - Customer relationships
 - Key resources
 - Key partners
 - Revenue streams



Products and Channels for the Digital World



Questions to Ask / Hypotheses to Describe

KP By category, ask <ul style="list-style-type: none">• Who they are• What they provide• What you provide	KA Ask, what <ul style="list-style-type: none">• Capabilities and• Activities you need	VP Describe <ul style="list-style-type: none">• The market you are in• The competition you face Describe <ul style="list-style-type: none">• How to fulfill wants/needs• A minimum viable product	CR Describe your <ul style="list-style-type: none">• Customer acquisition• Retention, and• Growth strategy	CS Describe <ul style="list-style-type: none">• Market segments• Customer wants/needs• (Customer) personas
C\$ Describe <ul style="list-style-type: none">• Fixed costs• Variable costs per unit• Assumed economics<ul style="list-style-type: none">• Of scale• Of scope	KR By category, ask <ul style="list-style-type: none">• What you need• How much• Where to find them• At what cost		Channels Describe <ul style="list-style-type: none">• How the product gets from company to customer	
	R\$ Of product sold, describe <ul style="list-style-type: none">• Expected quantities• At what prices		Assess <ul style="list-style-type: none">• market sizes	

Generate Hypotheses (the Open Source Way)

- Listen to the community for insights and ideas

2. Design Experiment (Customer Discovery)

- Design an experiment to test the hypotheses
- In the initial stages, you don't necessarily need code
- A mock-up / sign-up / survey can provide the needed information

Minimum Viable Product

- The minimum viable product (MVP)
 - Represents the value proposition for testing
 - In a minimal form that answers the test
- The MVP is minimal in terms of
 - Features customers need
 - Development costs

The Minimum Viable Product Over Time

Phase	Action	Goal
Customer engagement preparation	<ul style="list-style-type: none">• Build lo-fi MVP• Drive a little traffic to MPV	<ul style="list-style-type: none">• Test customer problem/need• Assess significance
Low-fidelity problem test	<ul style="list-style-type: none">• Slowly increase acquisition• Closely study customer behavior• Meet customers face-to-face	<ul style="list-style-type: none">• Understand problem/need• Learn how to explain problem• Keep assessing significance
High fidelity problem test	<ul style="list-style-type: none">• Increase customer acquisition• Monitor speed of acquisition	<ul style="list-style-type: none">• Test solution (do customers buy?)• Determine early evangelists
Customer acquisition optimization	<ul style="list-style-type: none">• Scale up customer acquisition	<ul style="list-style-type: none">• Optimize customer acquisition

Design Experiments (the Open Source Way)

- Open source lets you design and run experiments in parallel
 - Let the community explore options (their own experiments)
 - Lead community to design and implement your experiments
 - At a university, use student theses to design experiments

3. Test Hypothesis (Customer Discovery)

- Run the experiment as designed and collect the needed information

Test Hypotheses (the Open Source Way)

- Get users through open source project community
- Test hypotheses through up-sell

4. Derive Insight (Customer Discovery)

- Analyze the data and determine validity of hypotheses
- Based on overall validity (or lack thereof) decide to pivot

Derive Insight (the Open Source Way)

- Openly discuss findings / mirror back findings to community
- Listen to and learn from the response to identify biases

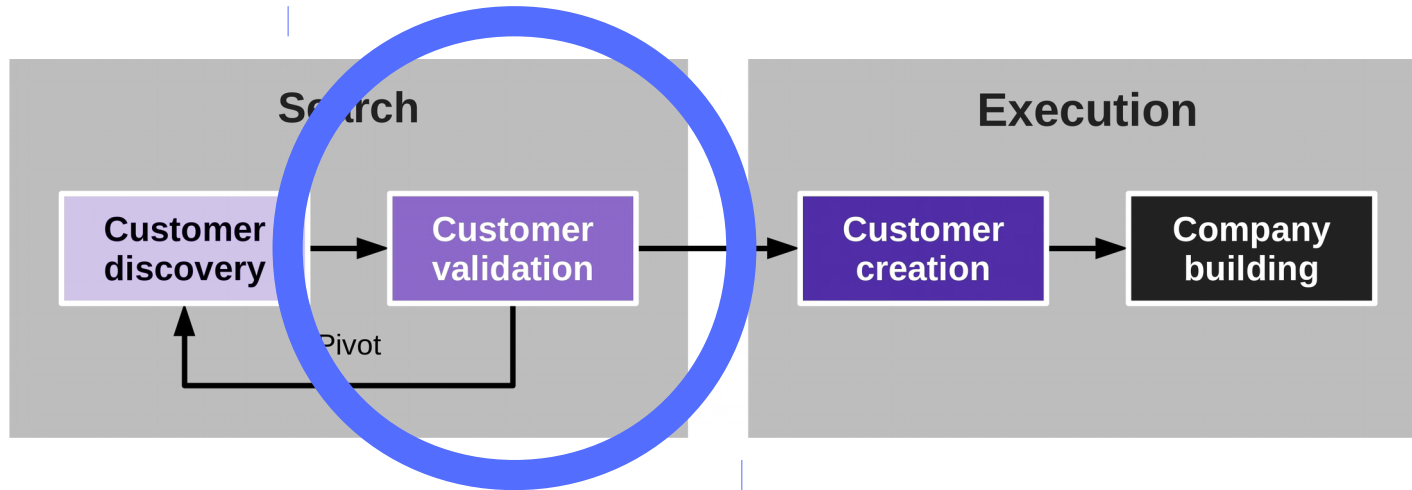
Pivot or Proceed?

- Based on analysis, decide whether to pivot or proceed

5. Customer Validation

Customer Validation

- Customer validation is a search process that
 - Tests whether the discovered business model is repeatable and scalable
- Product / market fit
 - Is the matching of all value propositions with their customer segments



After Customer Discovery...

- You have a tested business model that delivers value to customers
 - Your initial market sizing suggests the market is worth your efforts, but
 - Your customer discovery tests are not representative
- Customer validation will now test the market in its entirety
 - By testing and validating how to scale the business
 - Do you have product / market fit for the assumed market?

Testing for Both a Scalable and Repeatable Business Model

- Scalable
 - After an initial startup, will $CLV \gg CAC$ [1] consistently?
 - Is customer acquisition (sales funnel) predictable?
- Repeatable
 - Can you consistently and predictably sell?
 - Can you consistently produce and deliver?

[1] In principle, this should be customer lifetime costs rather than CAC

The Customer Validation Feedback Loop

1. Generate hypotheses

- Decide on most promising customer segments
- Decide on most promising channels and relationships

2. Design experiment

- Prepare MVP and collateral with market and reach in mind
- Prepare for priming and using channels

3. Test hypotheses

- Instrument! Be ready to collect data! Then:
- Fill channels, let sales work

4. Derive insights

- Analyze data, possibly revise business model
- Stop if stopping criterion is reached

Demand Creation (the Open Source Way)

- Word-of-mouth marketing
 - Social media
 - Conferences
- Practitioner conference talks
- Research conference talks

Pivot or Proceed

- Before you start, define a stopping criterion for customer validation
 - For example, sales volume reached or number of customers acquired
- Only after stopping criterion is fulfilled, proceed to customer creation

5. Startup Metrics

Business Model Metrics

- Customer lifetime value (CLV) and costs (CLC)
- Customer acquisition (CAC), retention, growth costs
- Annual / monthly recurring revenue (ARR / MRR)

Startup Survival Metrics

- Cash burn rate
- No months of cash left
- Time to cash-flow break even

Summary

1. Definition (startup)
2. Customer development
3. Customer discovery
4. Customer validation
5. Startup metrics

Thank you! Questions?

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