Software Startups

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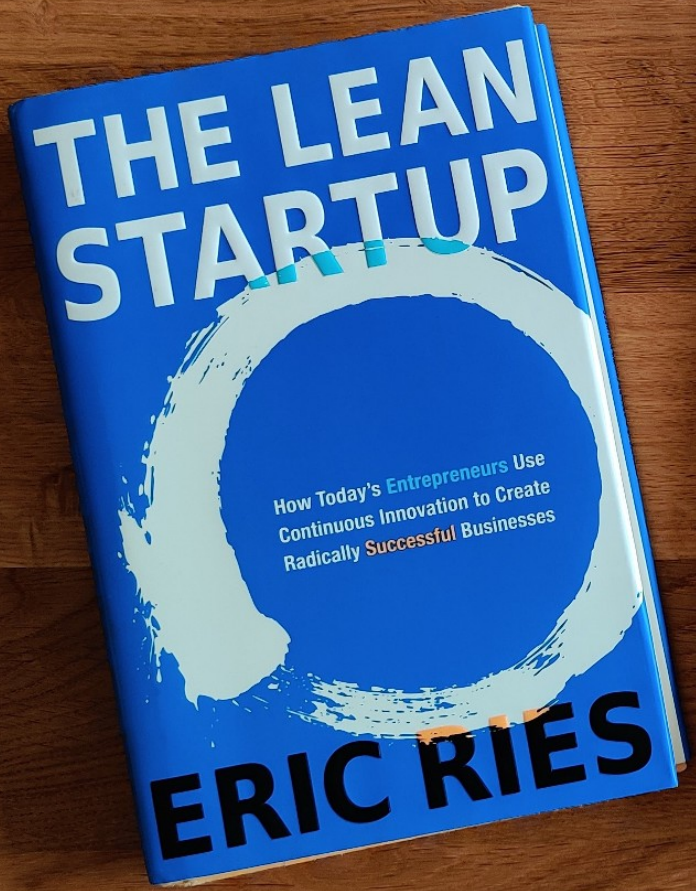
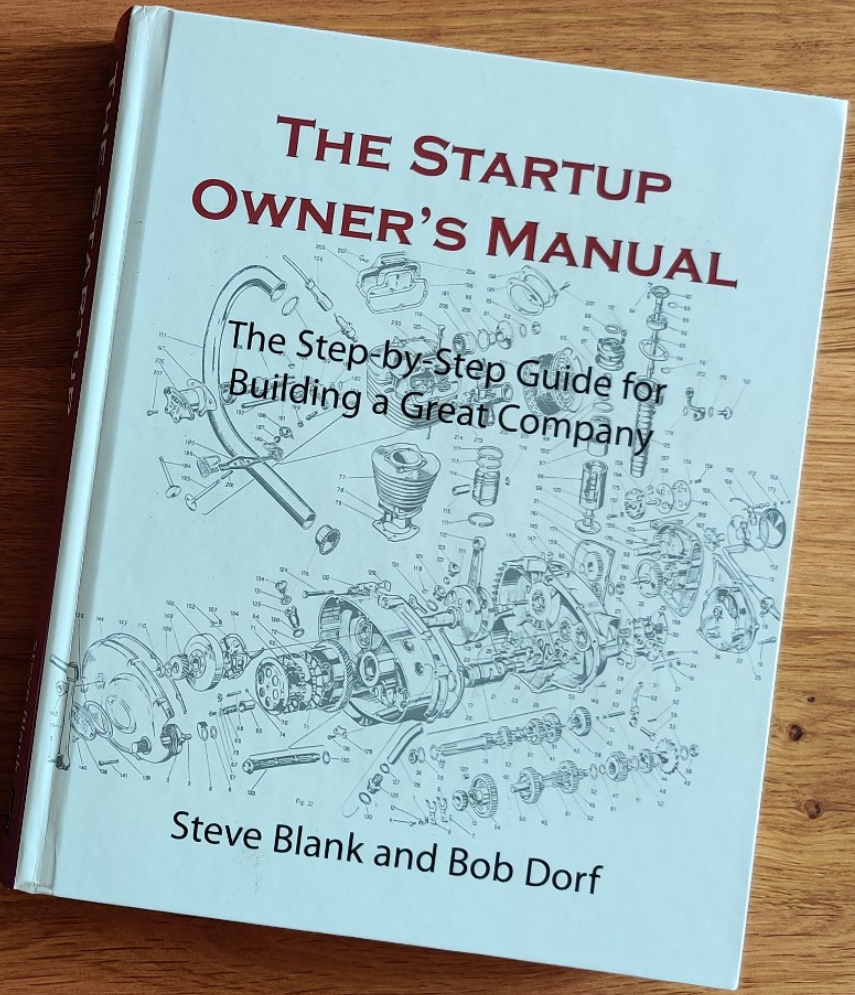
COSS D01

Agenda

1. Definition (startup)
2. The search process
3. Problem / solution fit
4. Product / market fit
5. Startup metrics


THE LEAN STARTUP
How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses
ERIC RIES

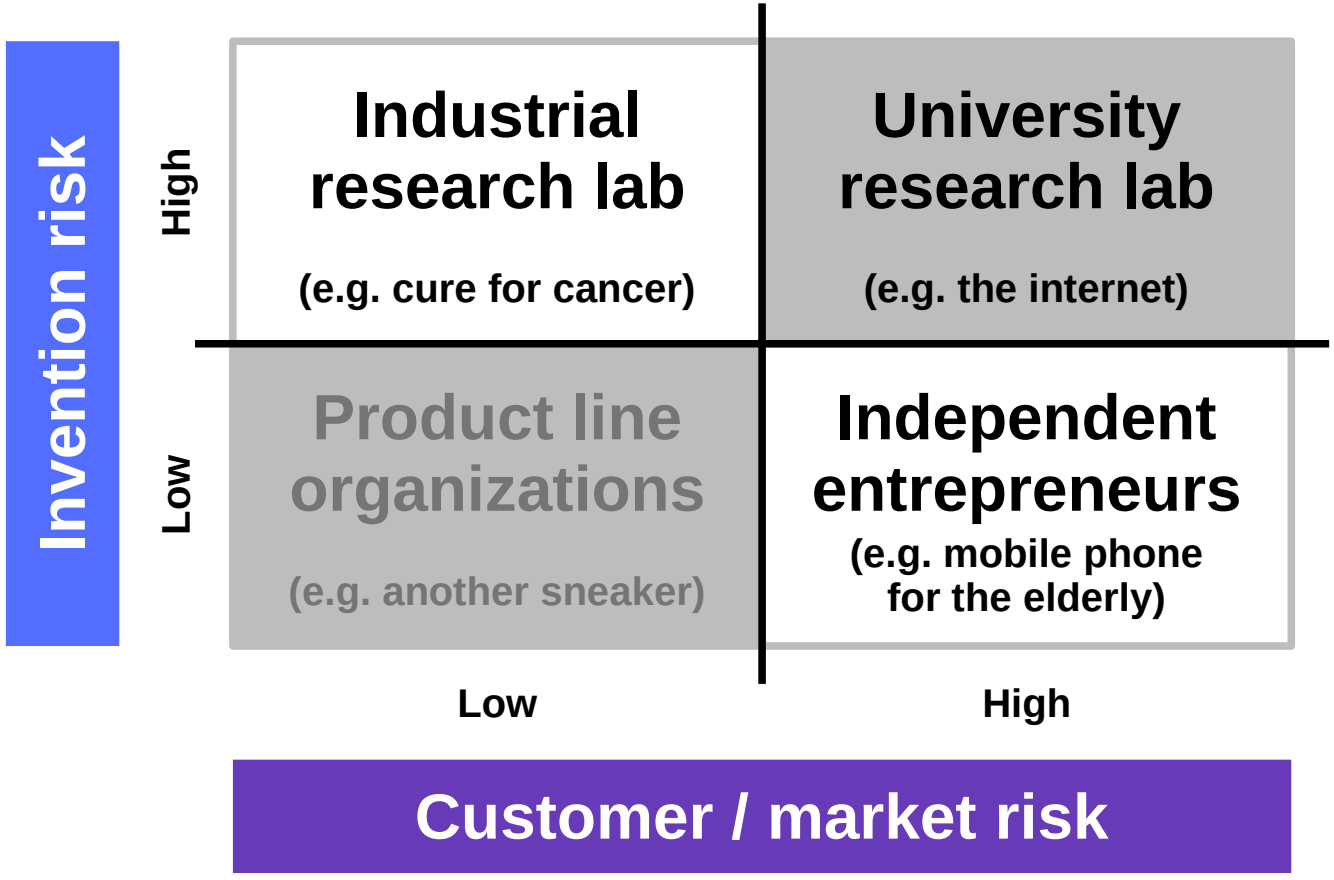

THE STARTUP OWNER'S MANUAL
The Step-by-Step Guide for Building a Great Company
Steve Blank and Bob Dorf

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. The Search Process

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

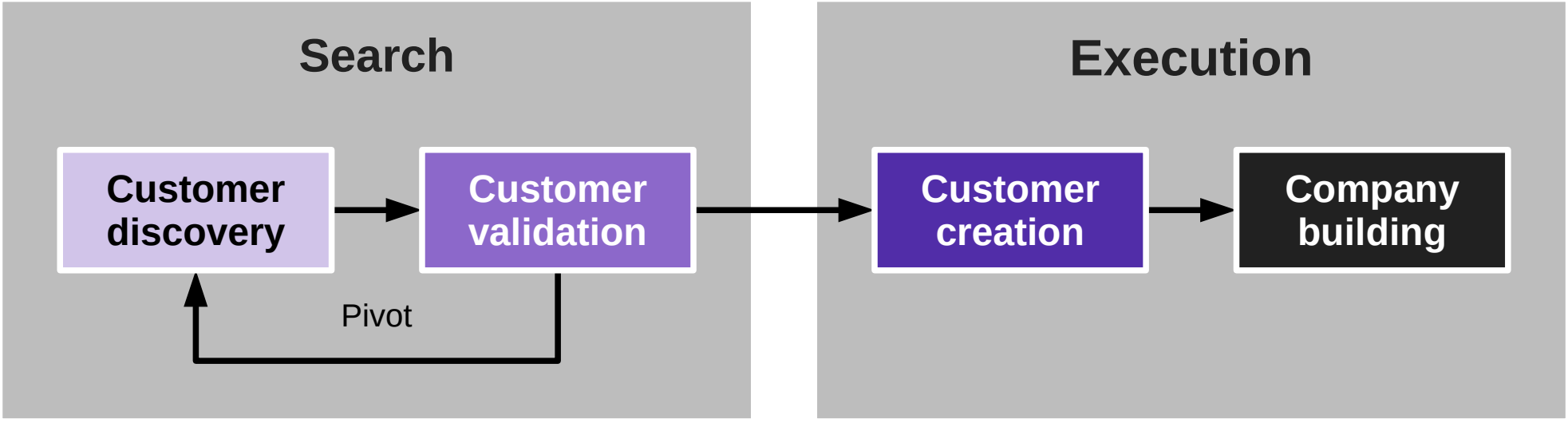
How to Avoid Failure

- 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

Incremental Learning Needs Feedback

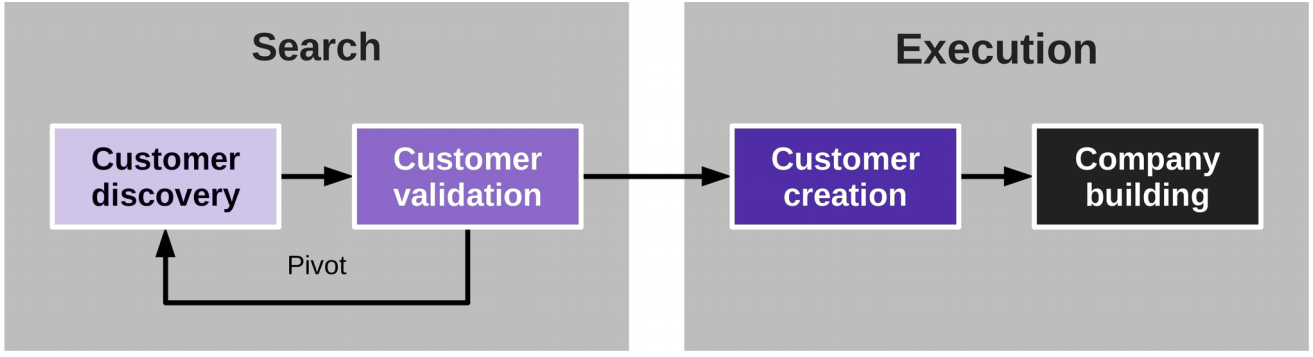
“There are no facts inside your building.”
(various authors)

Customer Development [BD12]



The Four Steps (“to the Epiphany”)

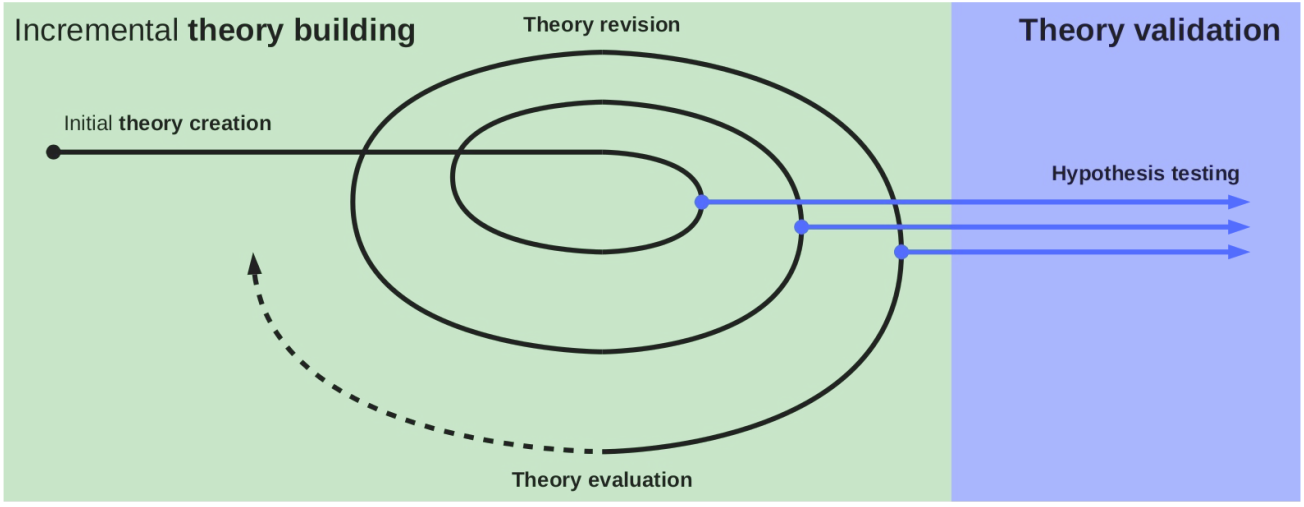
1. **Customer discovery**
   - Incrementally build out a business model by generating hypotheses and testing them
2. **Customer validation**
   - Incrementally build out the “discovered” business model by testing whether it scales
3. Customer creation
   - Build demand, drive it through the channel, and scale the business
4. Company building
   - Transition from startup to company by focusing on execution



The Two Challenges of the Search Process

1. Business model building
   - Finding (local) maxima within a large business model search space [1]

2. Business model validation
   - Generating and testing one or more hypotheses about a business model



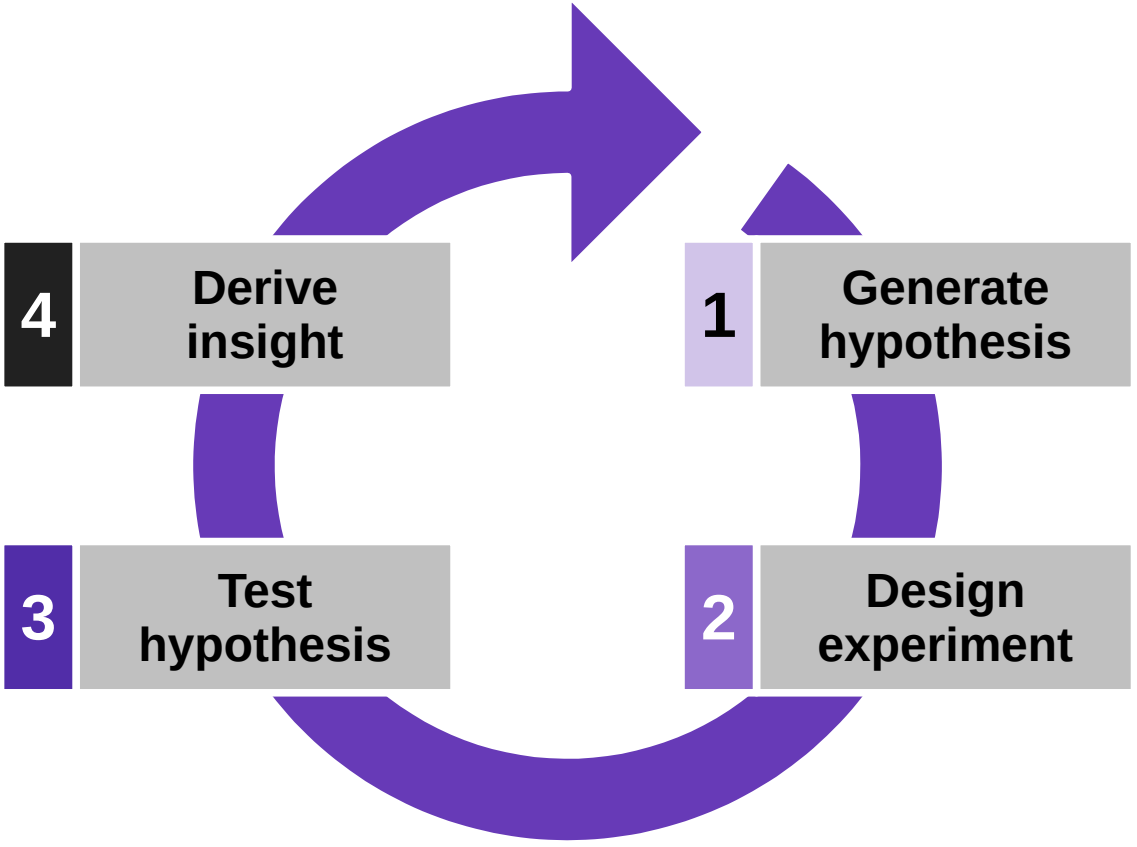
Not drawn to scale or effort involved

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

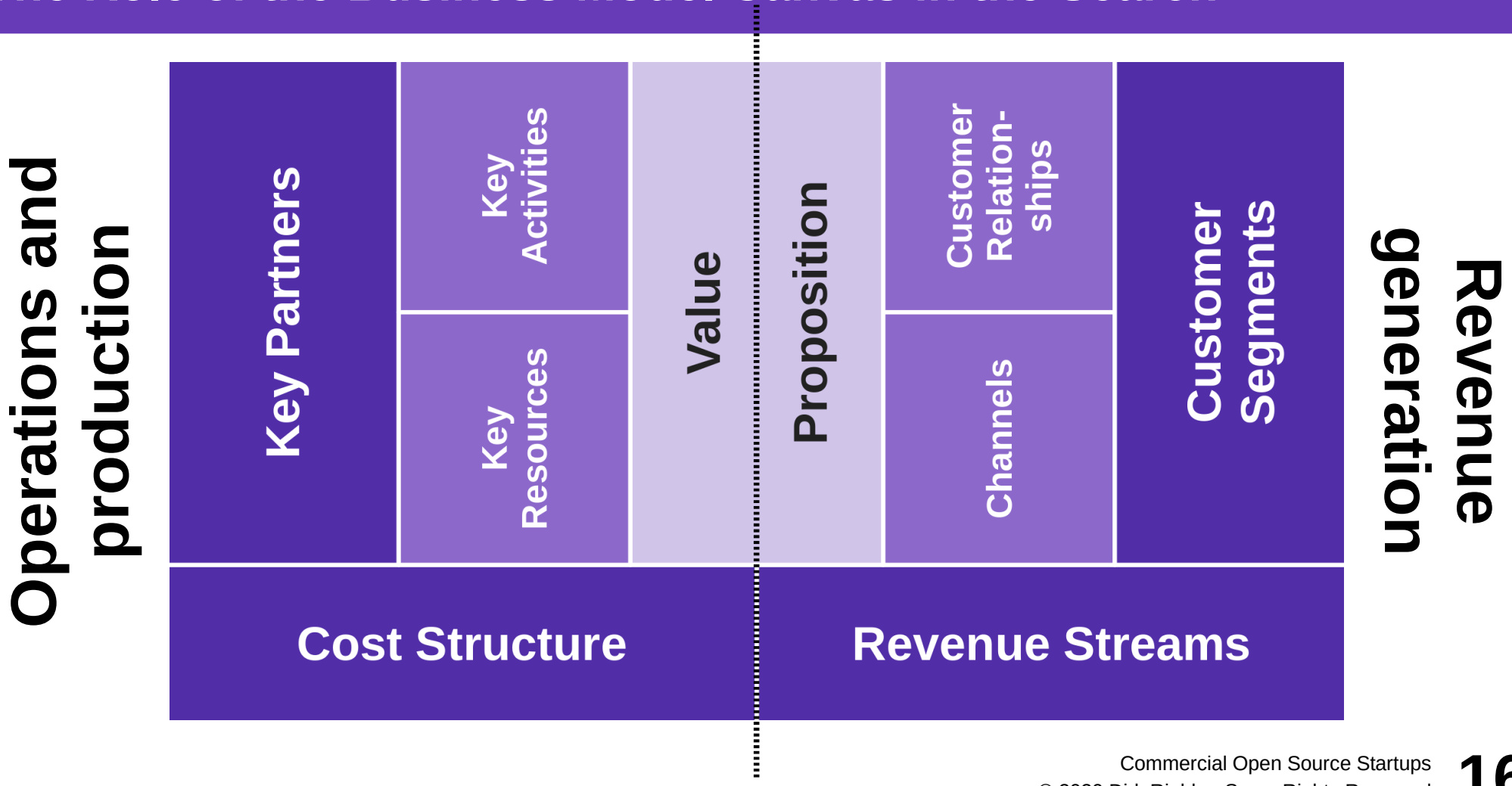
1. Business Model Building

- 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

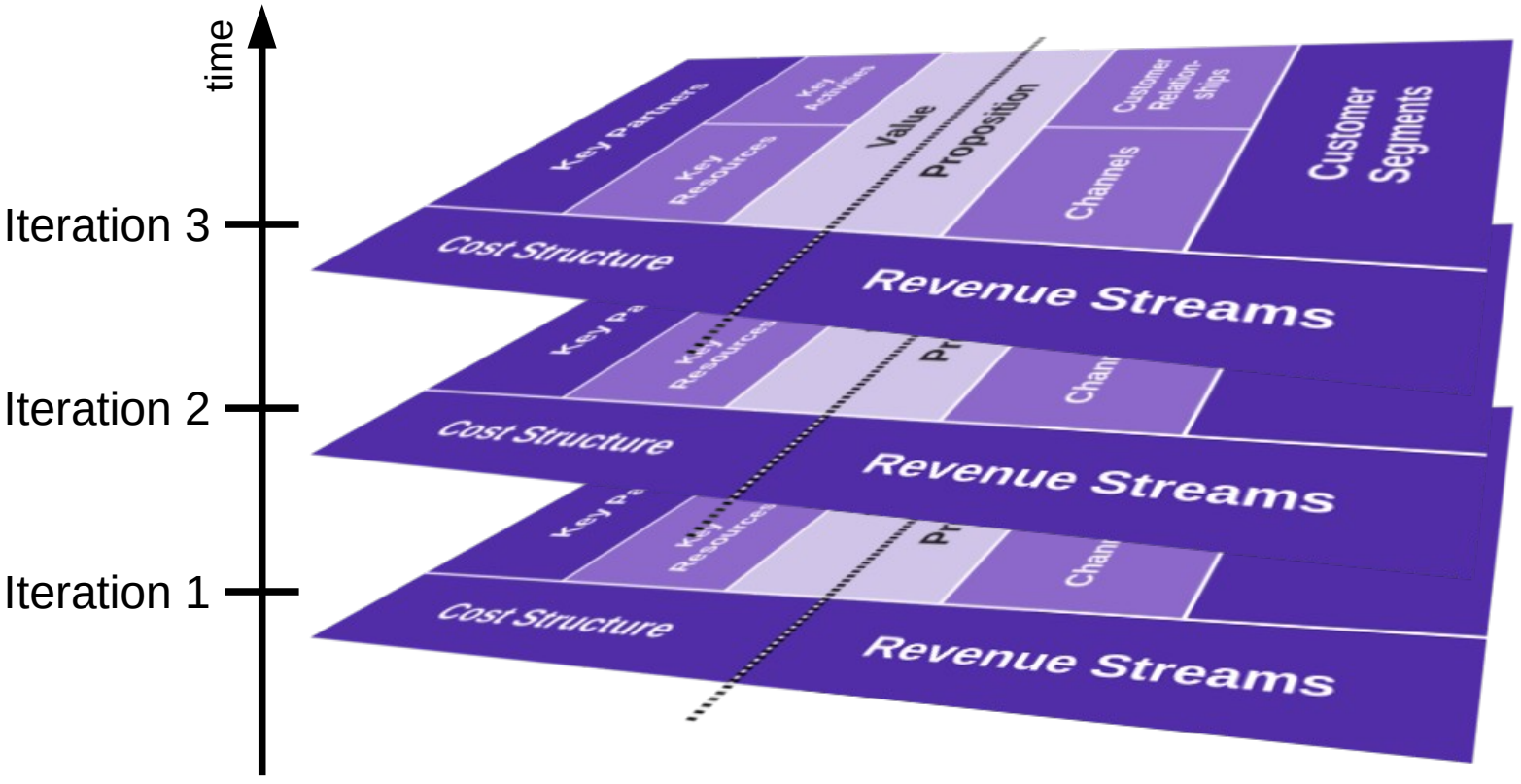
2. Business Model Validation Using Hypothesis Testing



The Role of the Business Model Canvas in the Search



The Business Model Canvas Over Time



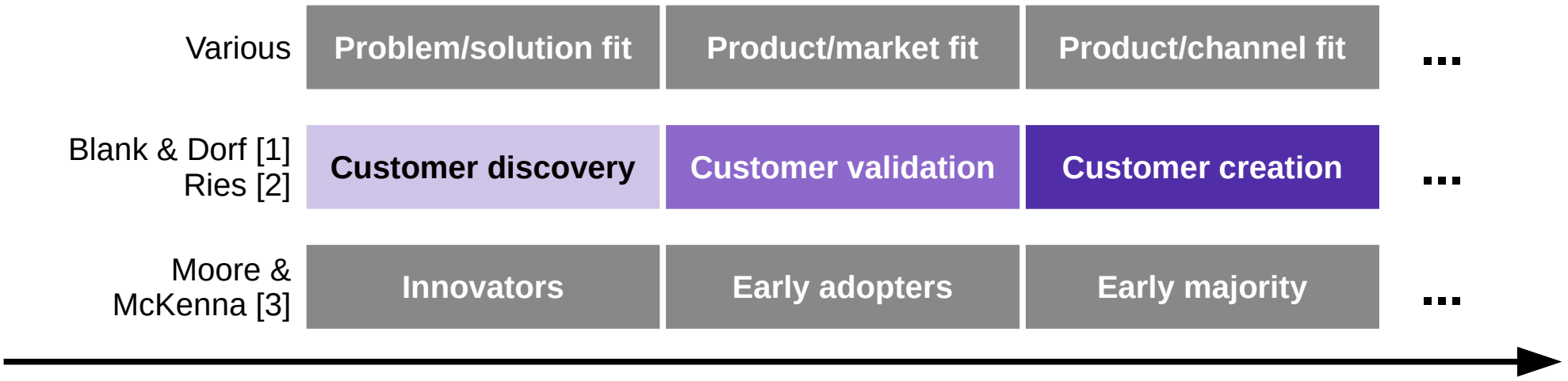
Pivoting

- 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 the Search Approach

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

Model Correlations

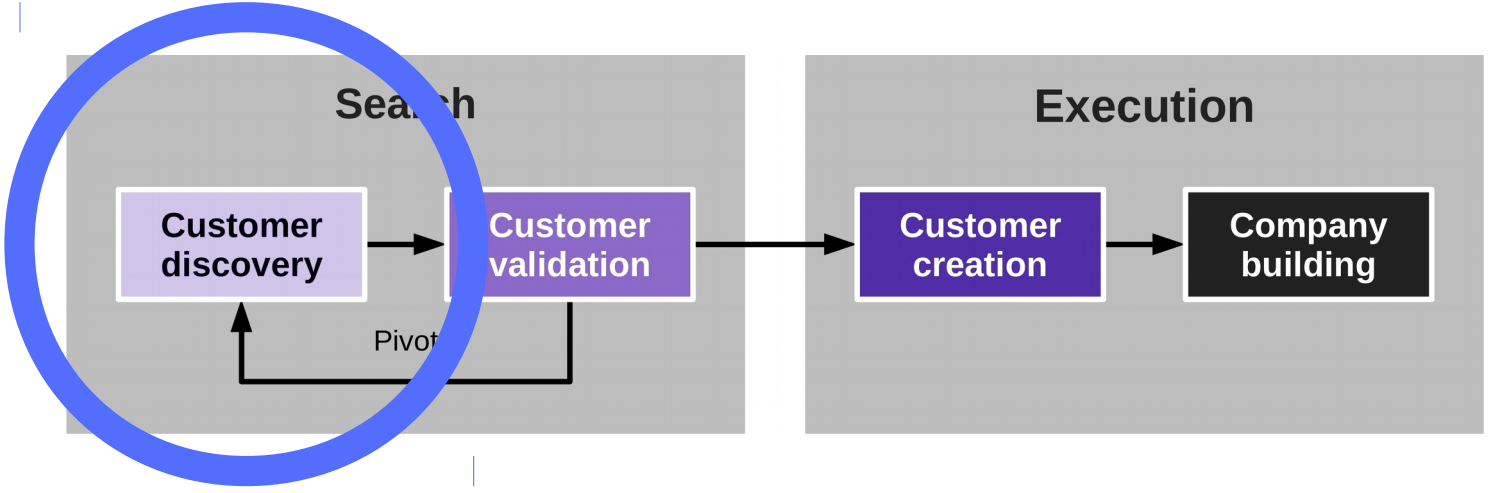


[1] Blank, S., & Dorf, B. (2012). The Startup Owner's Manual.
[2] Ries, E. (2011). The Lean Startup.
[3] Moore, G. A., & McKenna, R. (1999). Crossing the Chasm.

3. Problem / Solution Fit

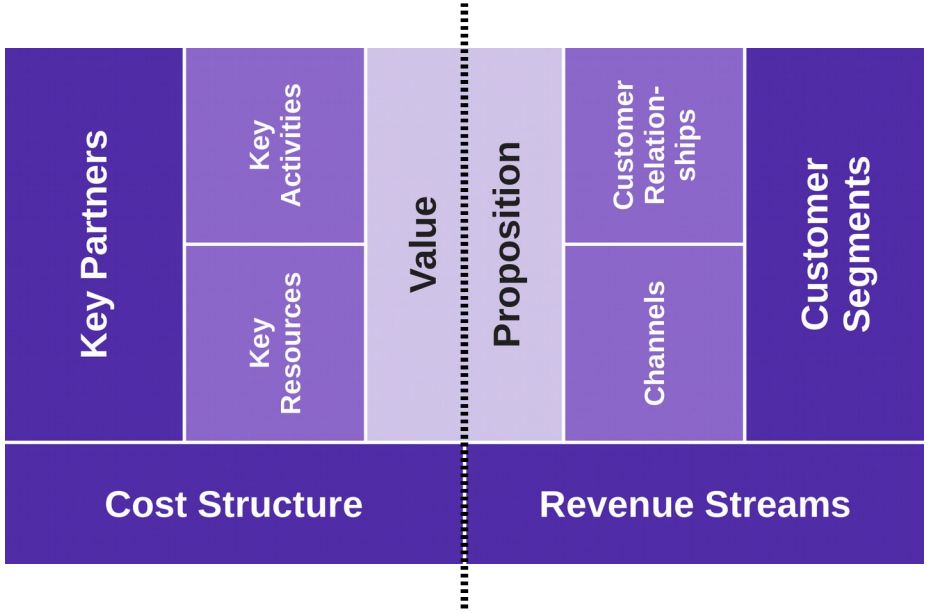
Finding Problem / Solution Fit with Customer Discovery

- 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



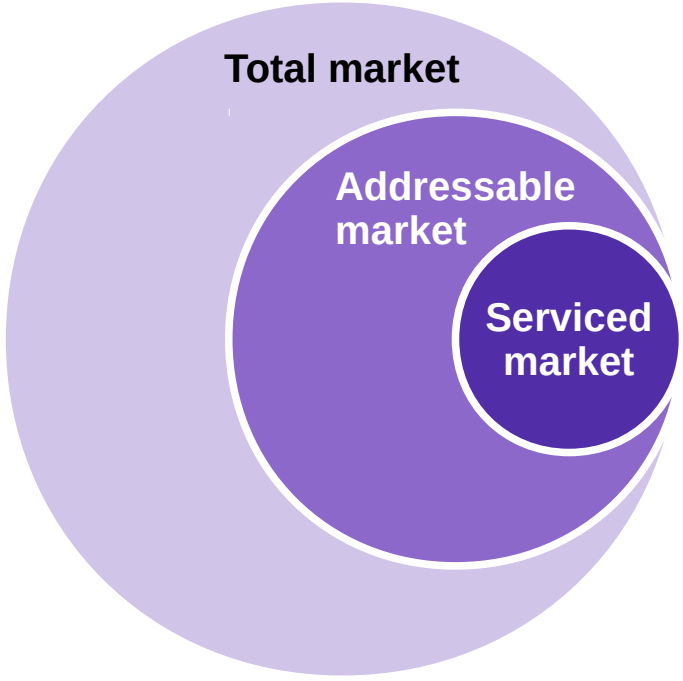
From Product Vision to Business Model

- 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

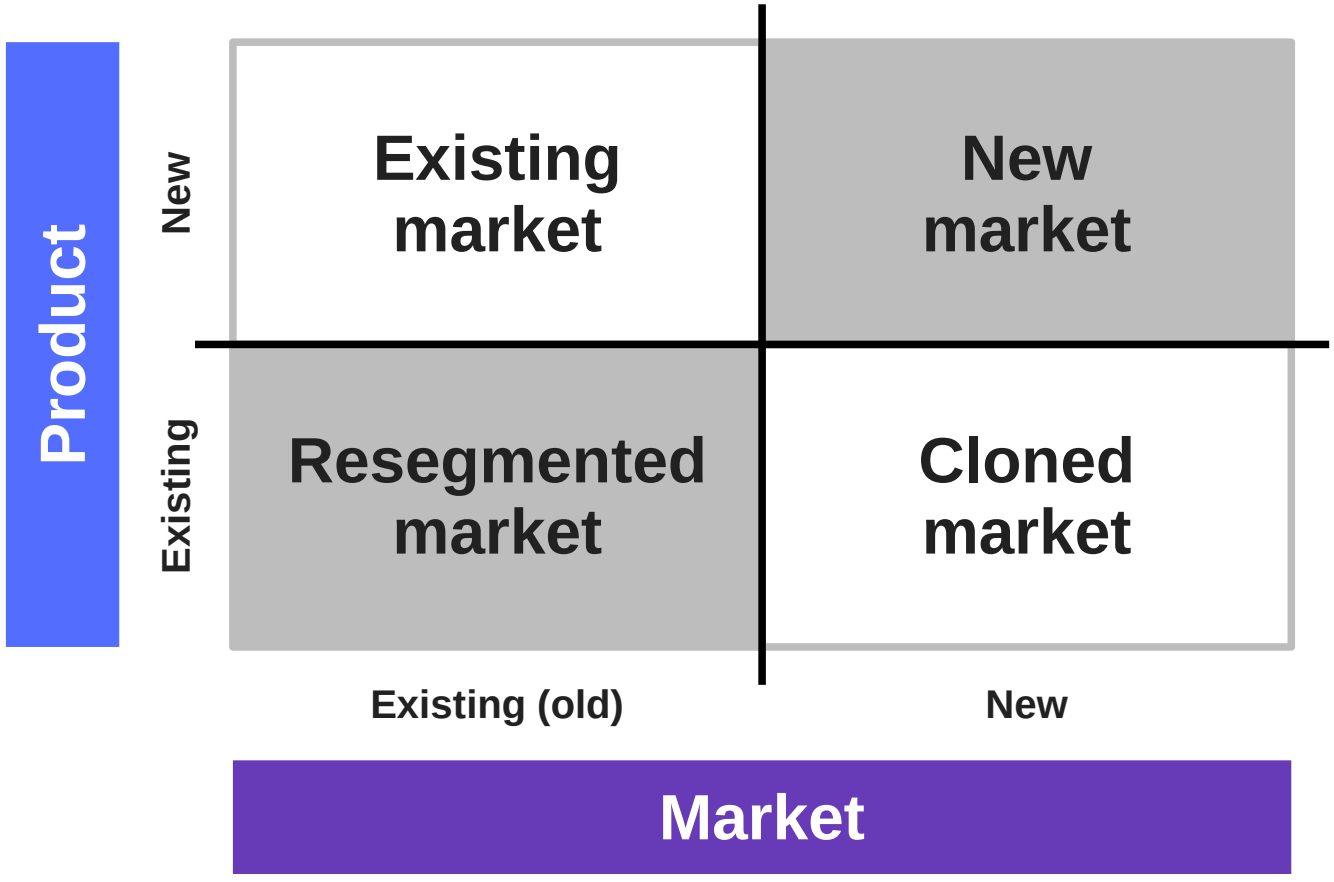


Start the Search with Market Sizing

- 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

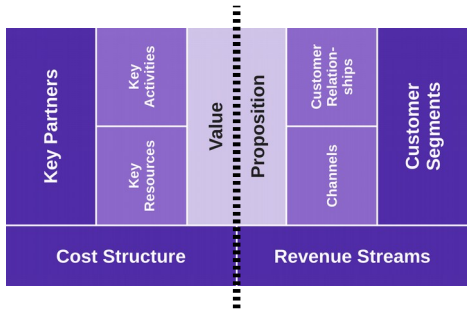


The Impact of Different Market Situations

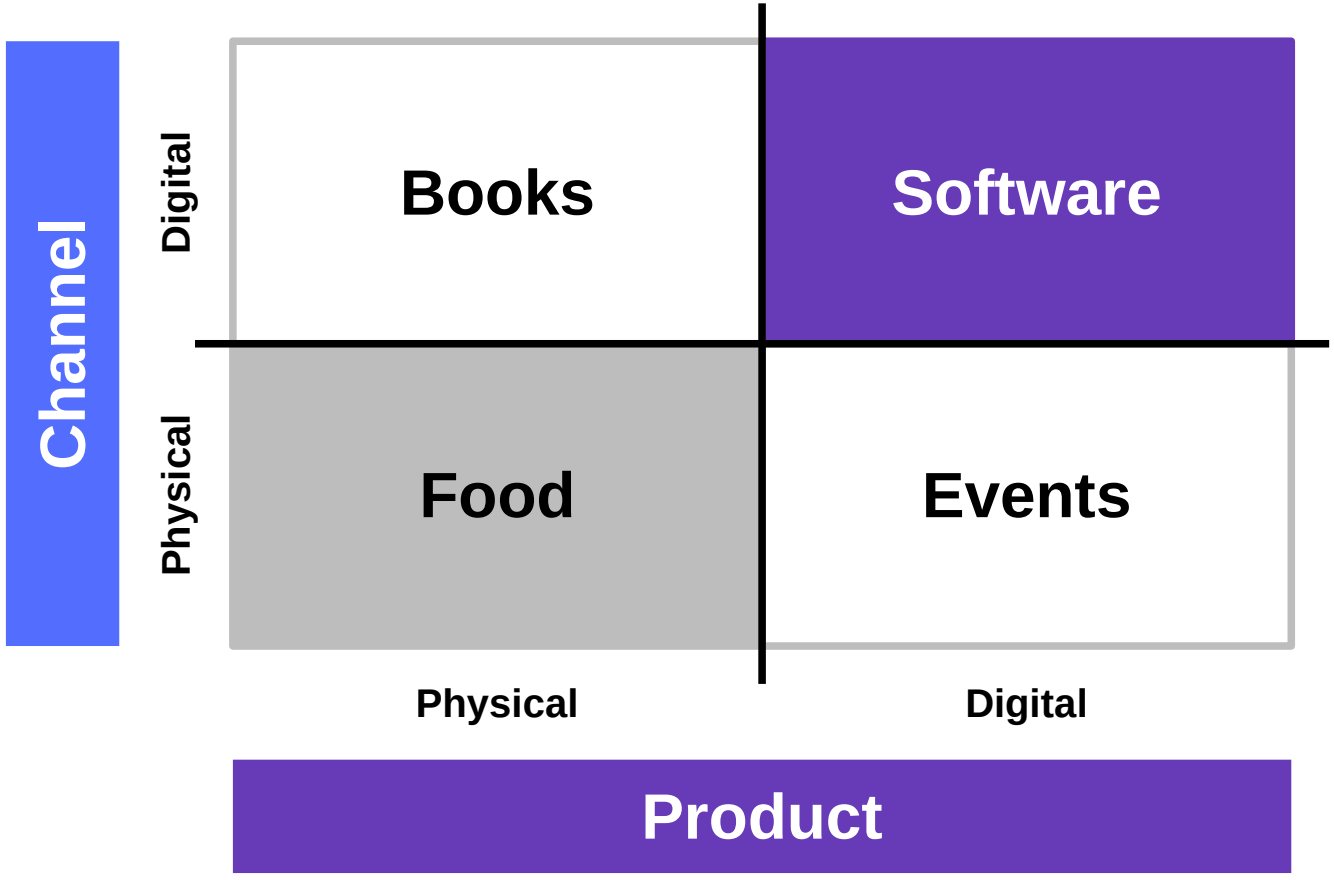
- A new product in an existing market
  - Market is known, little uncertainty
  - Product has efficiency gains
- A new product for a new market
  - No market yet; evangelism needed
  - Breakthrough product
- Resegmenting an existing market
  - Market is known, little uncertainty
  - Product focus on 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
- Who they are
- What they provide
- What you provide

KA

Ask, what
- Capabilities and
- Activities you need

KR

By category, ask
- What you need
- How much
- Where to find them
- At what cost

VP

Describe
- The market you are in
- The competition you face

Describe
- How to fulfill wants/needs
- A minimum viable product

CR

Describe your
- Customer acquisition
- Retention, and
- Growth strategy

Channels

Describe
- How the product gets from company to customer

CS

Describe
- Market segments
- Customer wants/needs
- (Customer) personas

C$

Describe
- Fixed costs
- Variable costs per unit
- Assumed economics
  - Of scale
  - Of scope

R$

Of product sold, describe
- Expected quantities
- At what prices

Assess
- 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	• Build lo-fi MVP • Drive a little traffic to MVP	• Test customer problem/need • Assess significance
Low-fidelity problem test	• Slowly increase acquisition • Closely study customer behavior • Meet customers face-to-face	• Understand problem/need • Learn how to explain problem • Keep assessing significance
High fidelity problem test	• Increase customer acquisition • Monitor speed of acquisition	• Test solution (do customers buy?) • Determine early evangelists
Customer acquisition optimization	• Scale up customer acquisition	• 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

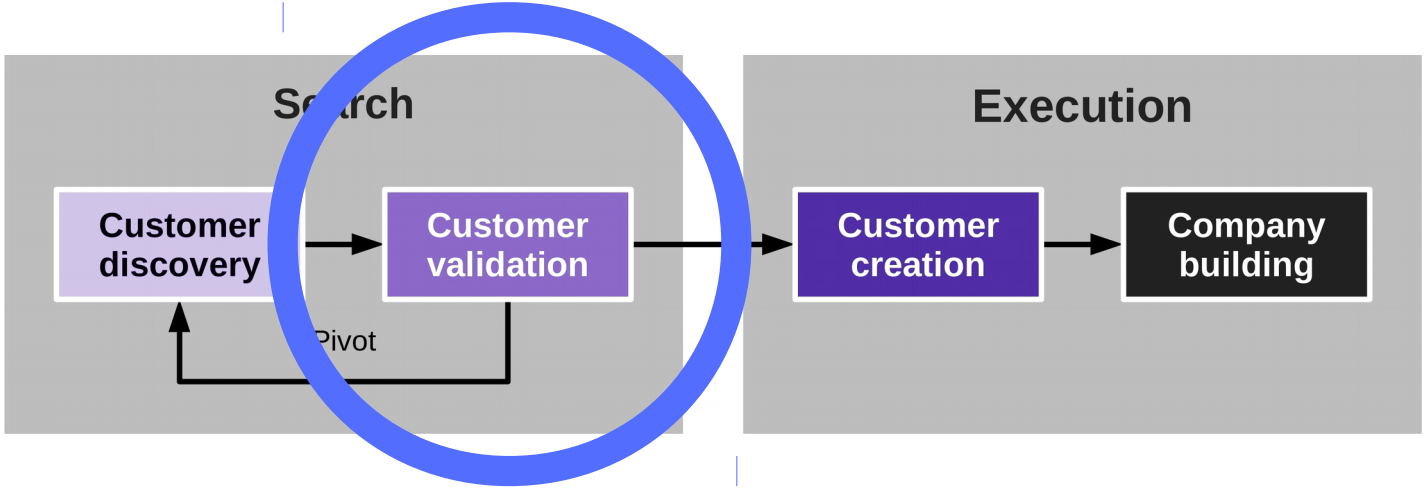
Pivot or Proceed?

- Based on analysis, decide whether to pivot or proceed

5. Product / Market Fit

Finding Product / Market Fit with 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 >> 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. The search process
3. Problem / solution fit
4. Product / market fit
5. Startup metrics

Thank you! Questions?

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