

Software Startups

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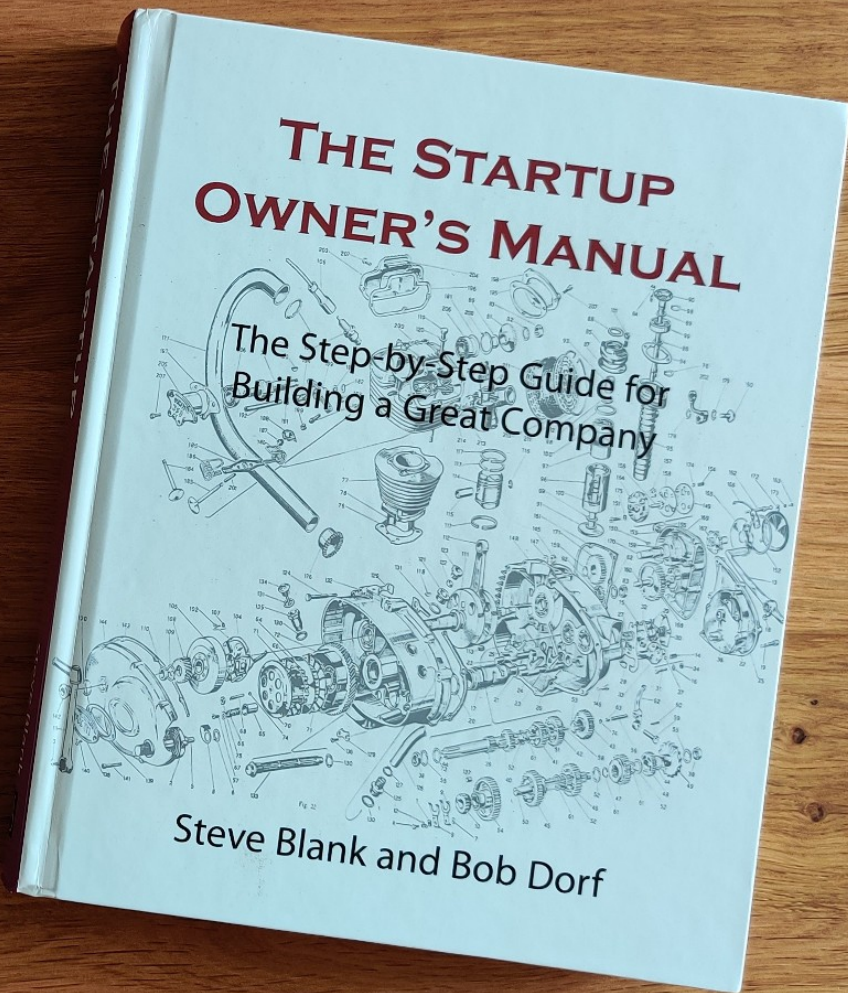
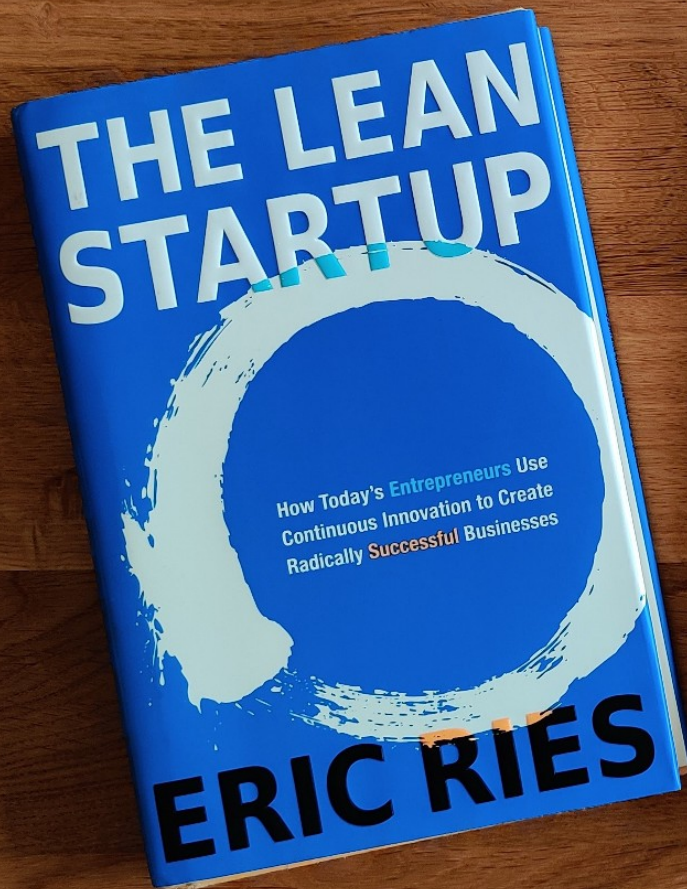
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Agenda

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

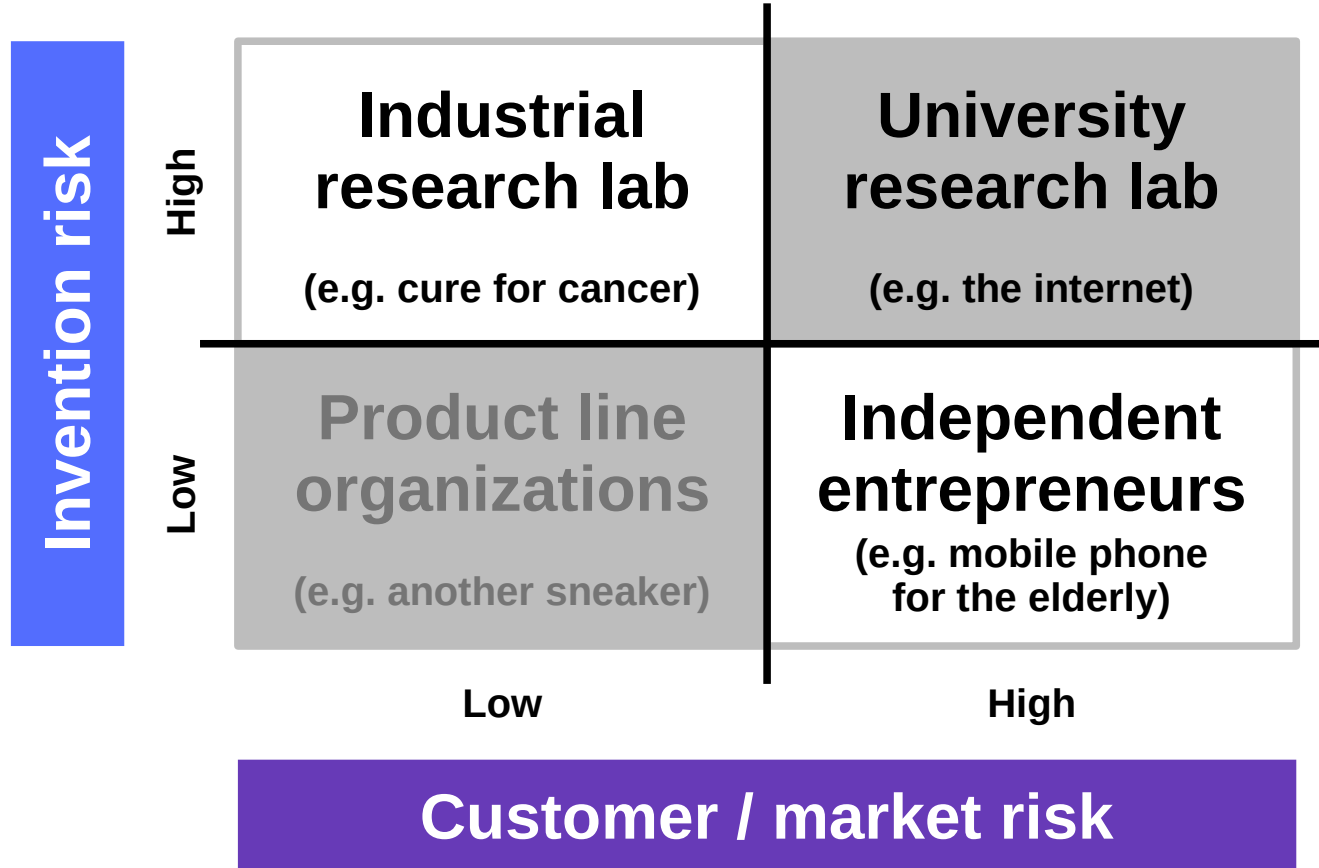


1. Startup Definition

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. 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

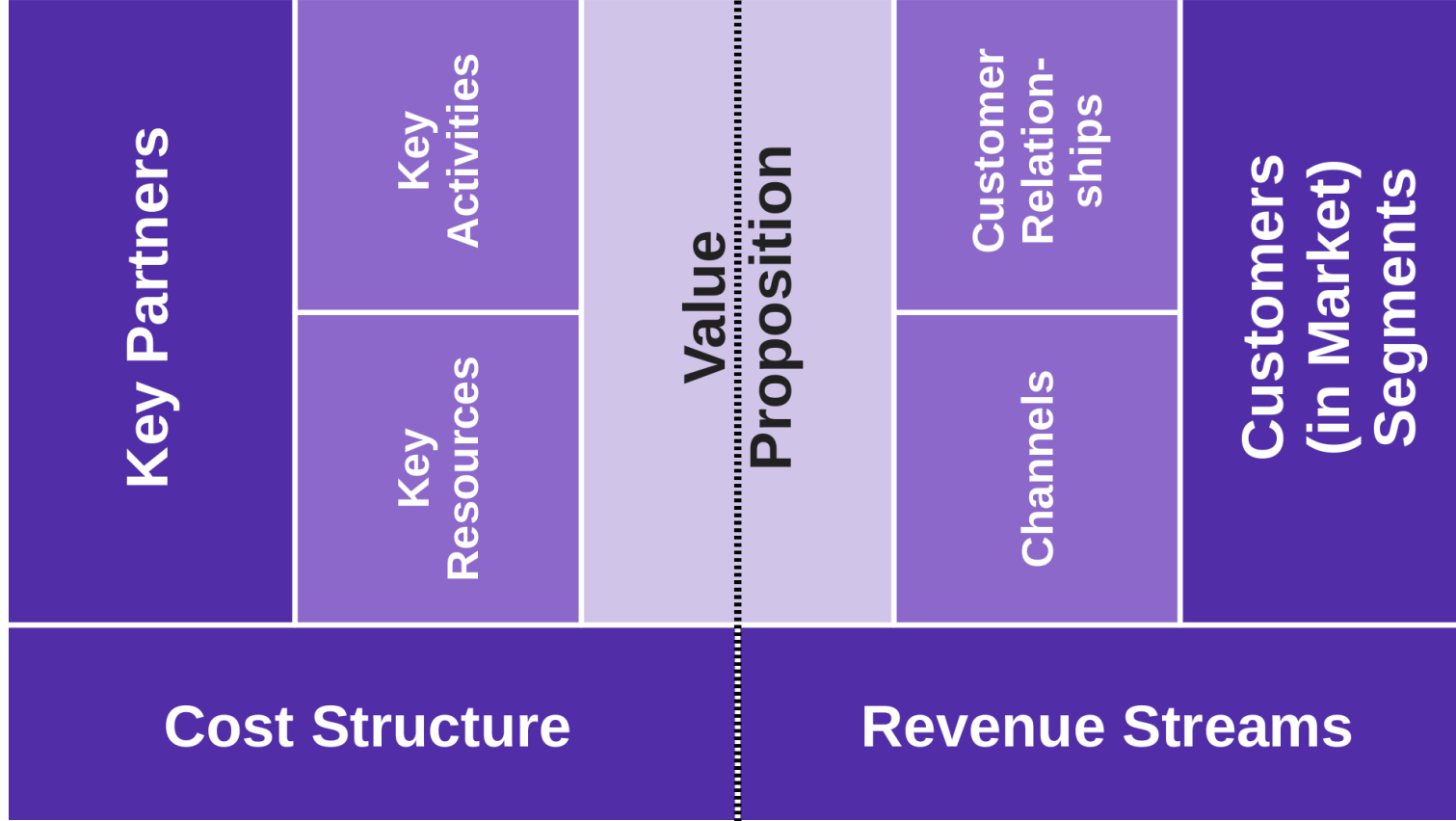
How to Avoid Failure

- Establish and follow a structured process of incremental “validated learning” where
 - A structured process is a process of incrementally discovering your business model
 - And learning is a process of creating, 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)**

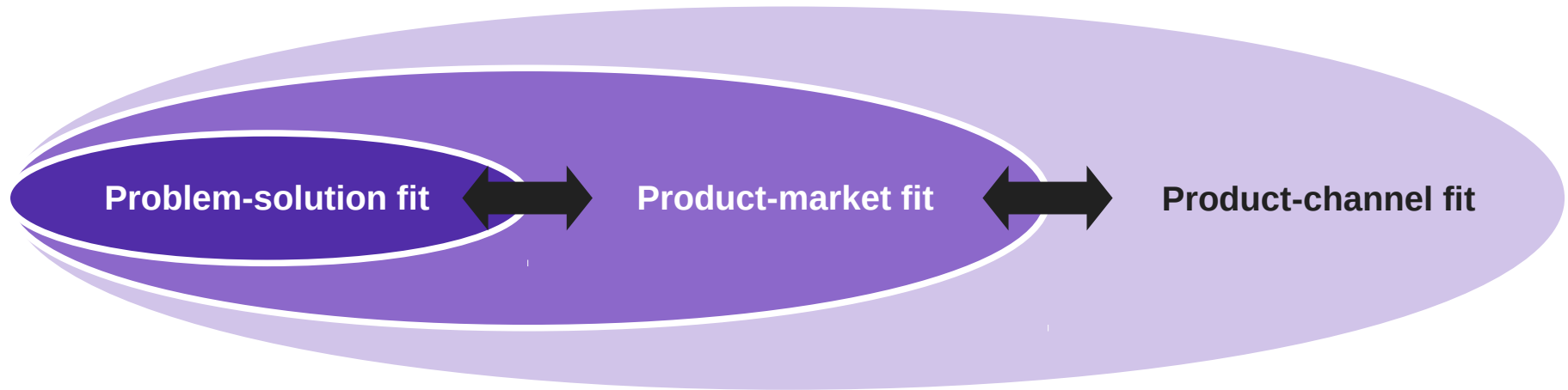
The Role of the Business Model Canvas in the Search

**Operations and
production**



The Three Stages of the Search Process

- The business model achieves
 1. **Problem-solution fit**
 2. **Product-market fit**
 3. **Product-channel fit**



The Two Activities of Each Stage of the Search Process

1. Business model building

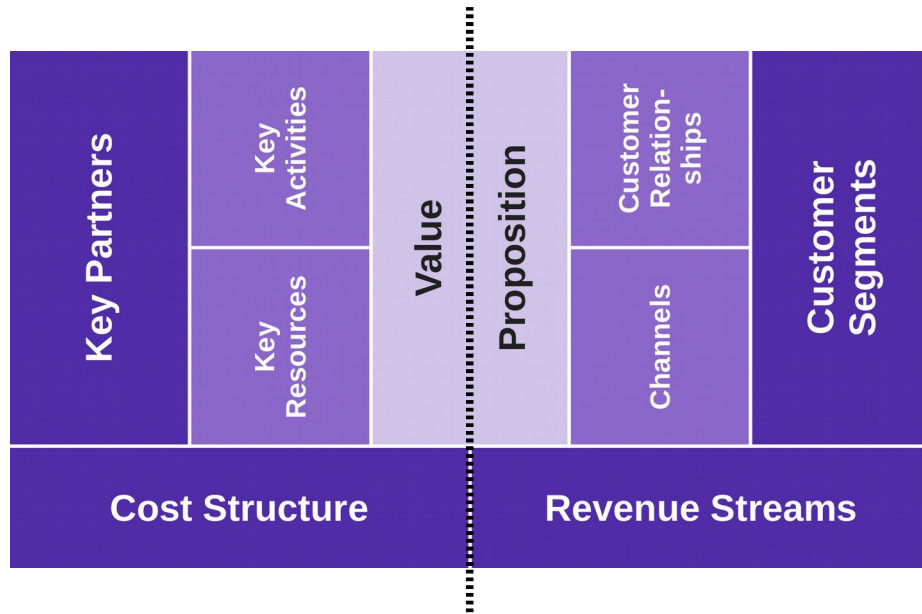
- Creating coherent sets of hypotheses (descriptive statements) about the business

2. Business model validation

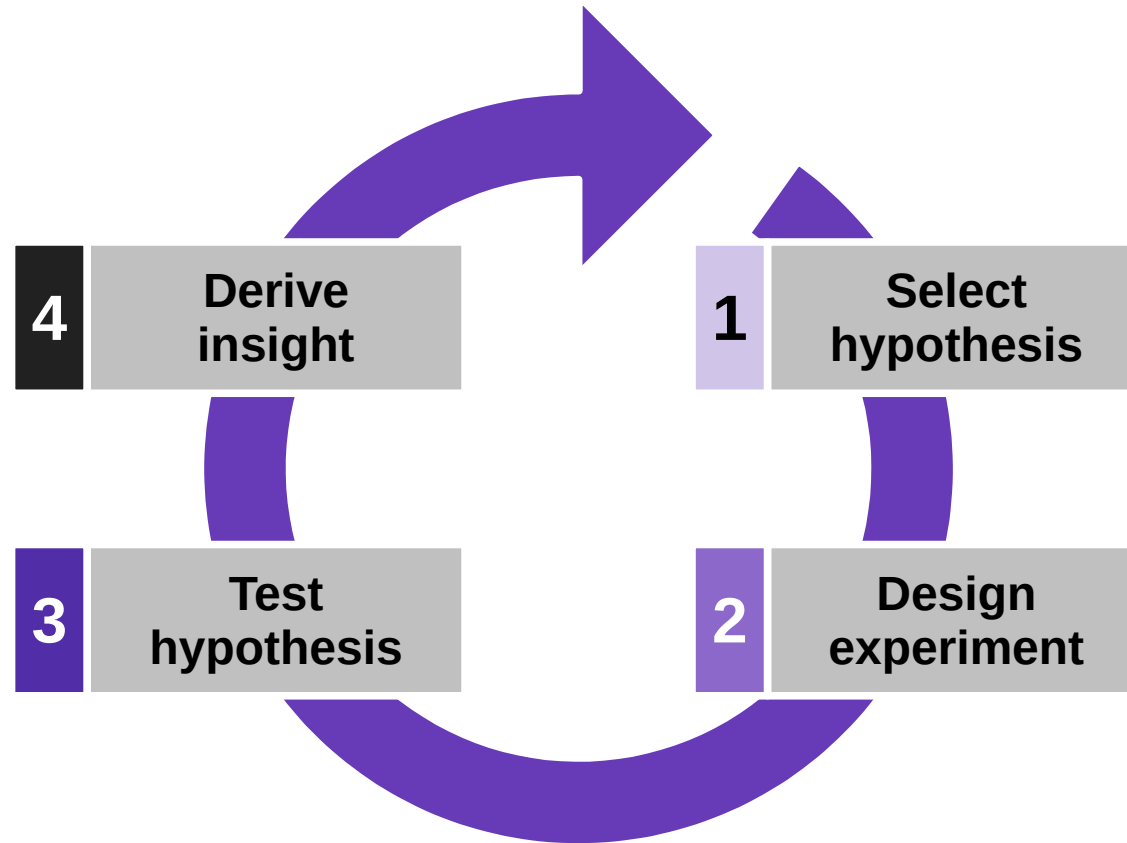
- Testing hypotheses from the business model to gather feedback

1. Business Model Building as Hypothesis Creation

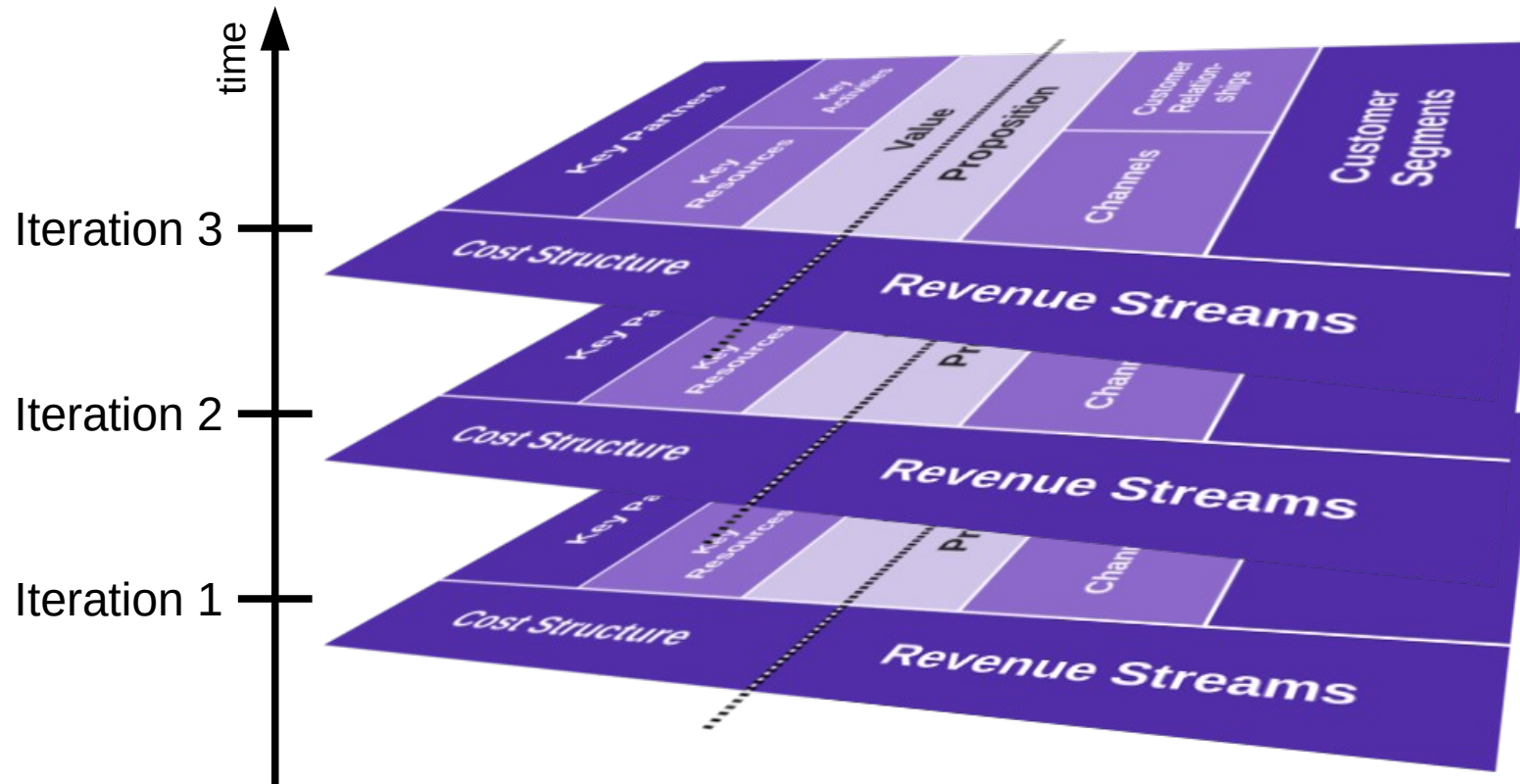
- Create hypotheses from introspection and feedback
 - Introspection provides the initial potentially disruptive ideas
 - Experimental feedback guides incremental refinement



2. Business Model Validation Using Hypothesis Testing



The Business Model Canvas Over Time



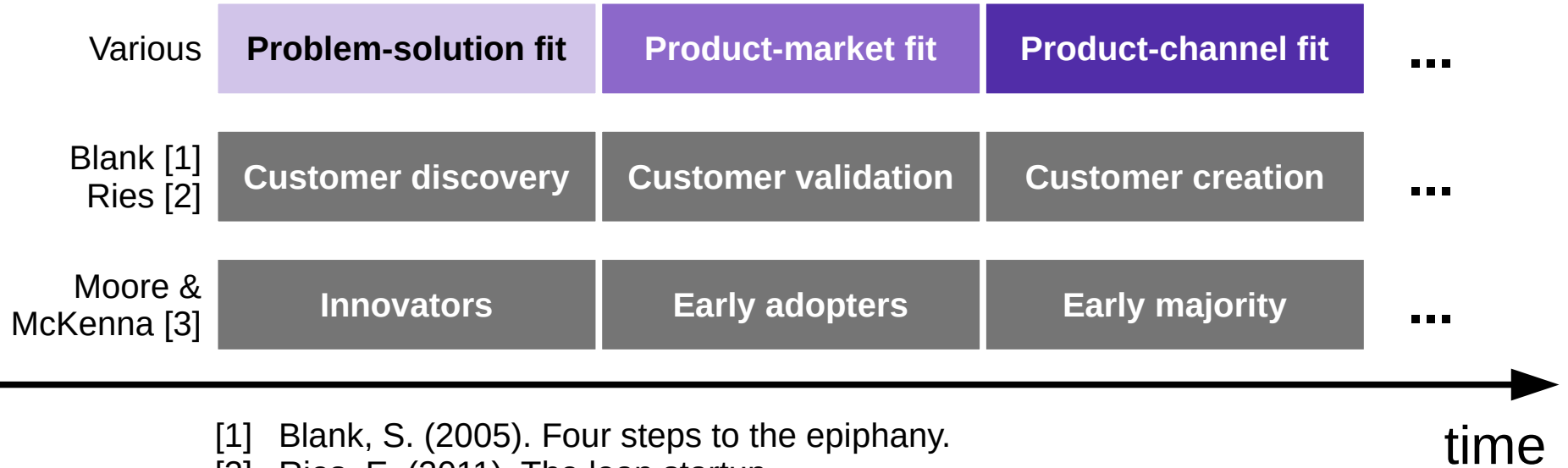
Pivot or Proceed

- 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. (2005). Four steps to the epiphany.

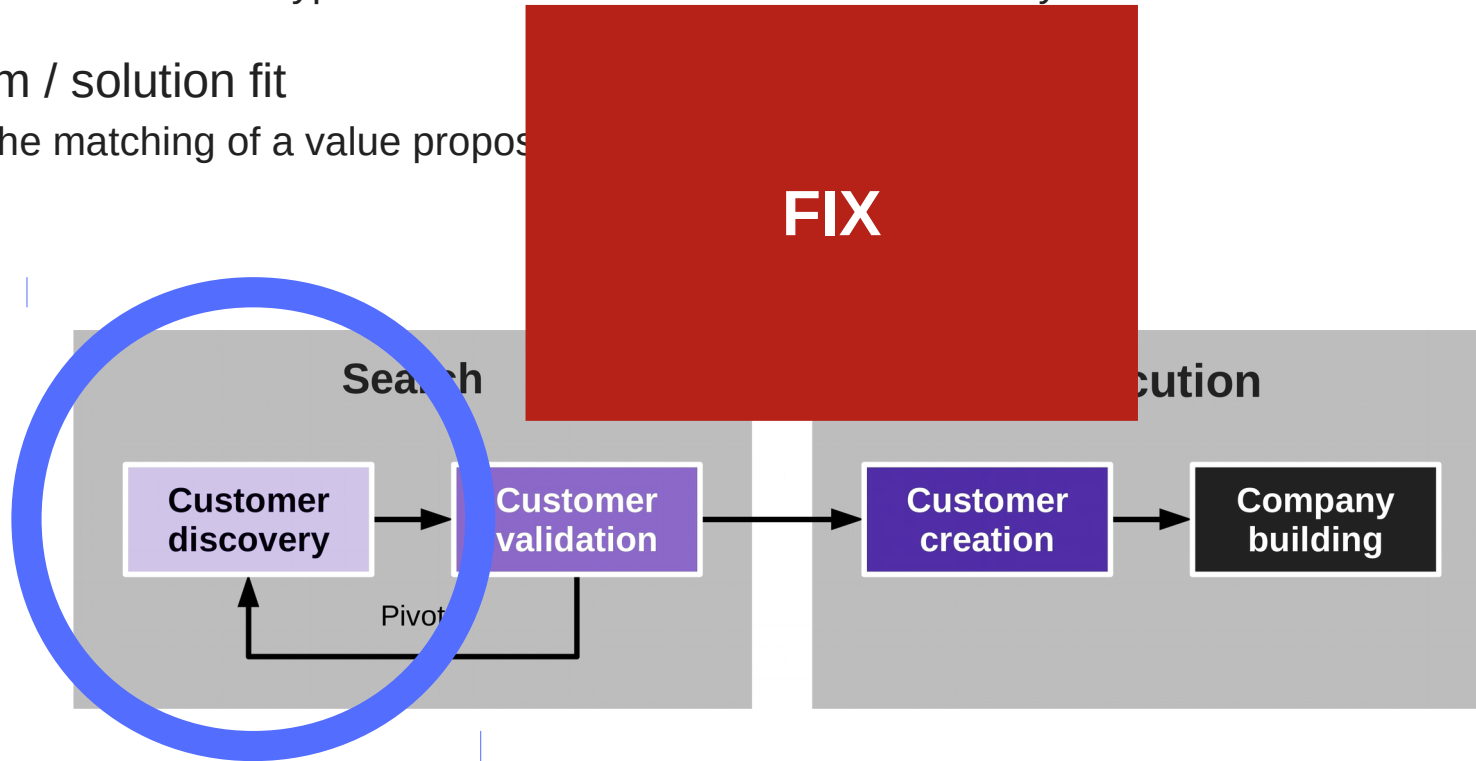
[2] Ries, E. (2011). The lean startup.

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

3. Problem-Solution Fit

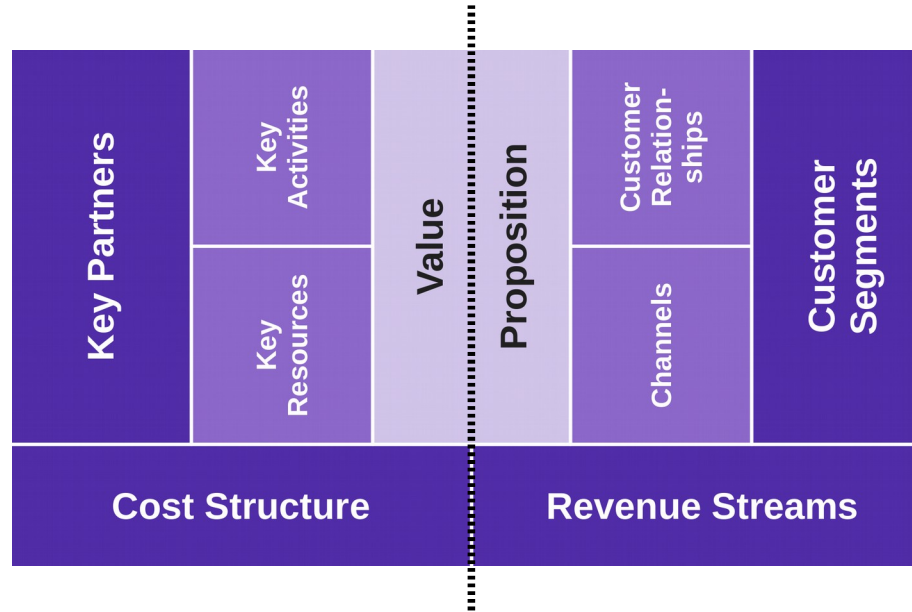
Finding Problem-Solution Fit with Customer Discovery

- 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



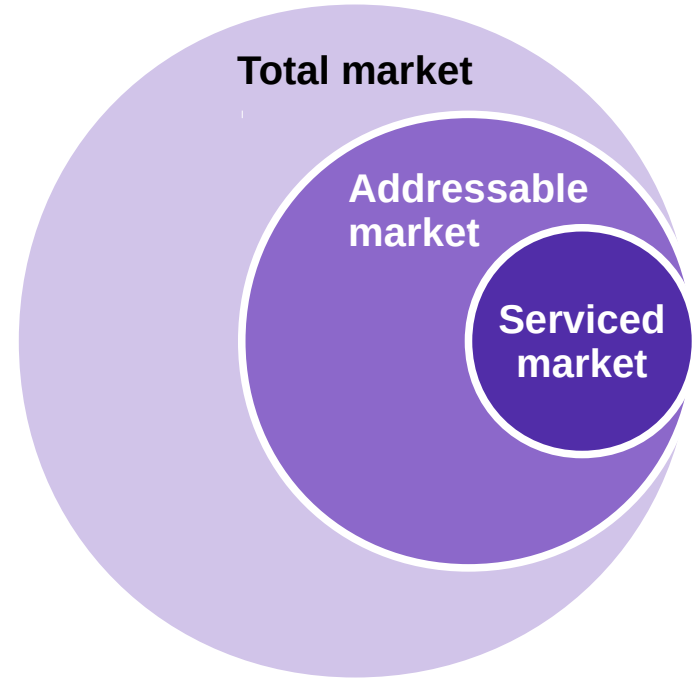
From Product Vision to Business Model

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

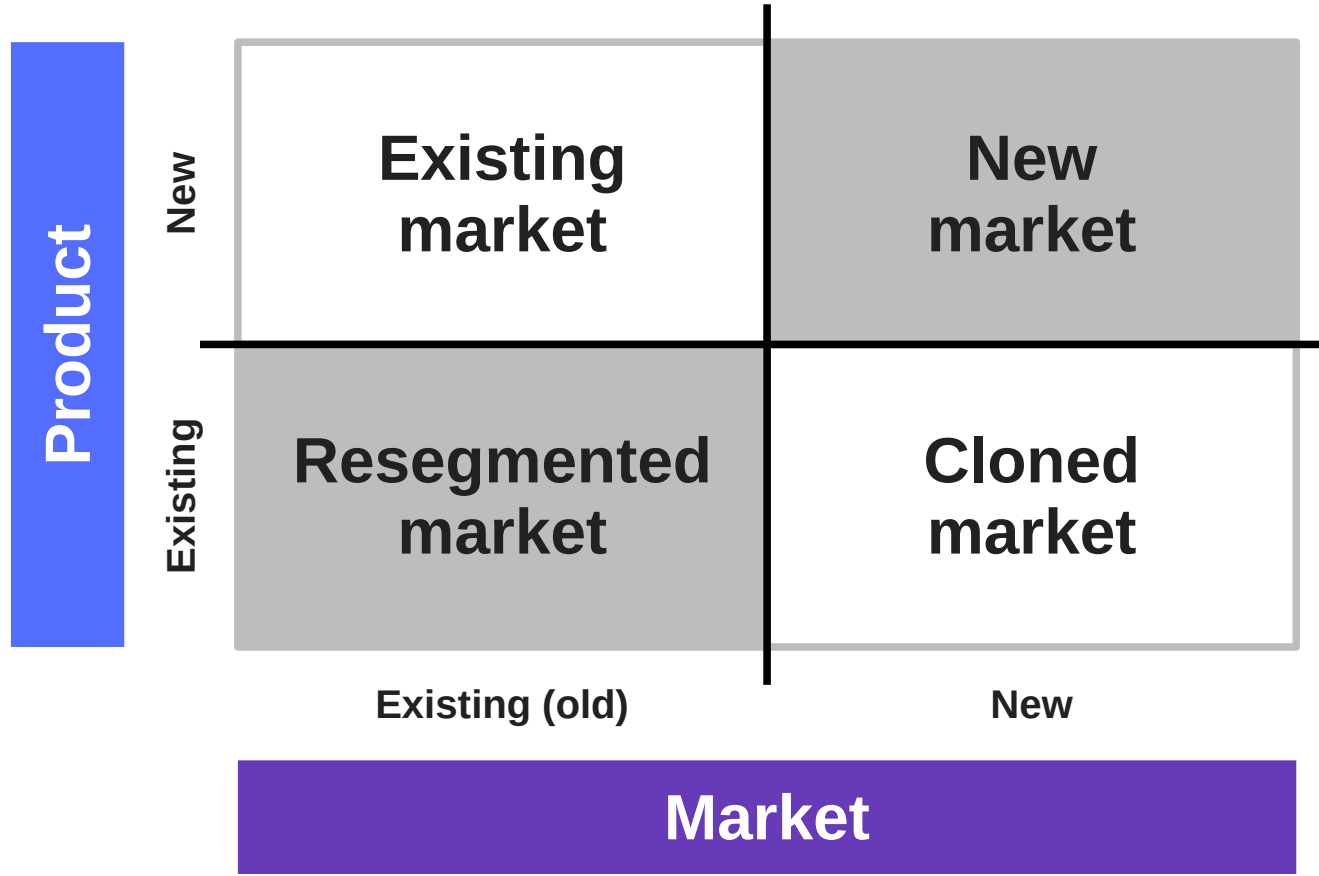


Start the Search with Market Sizing

- 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



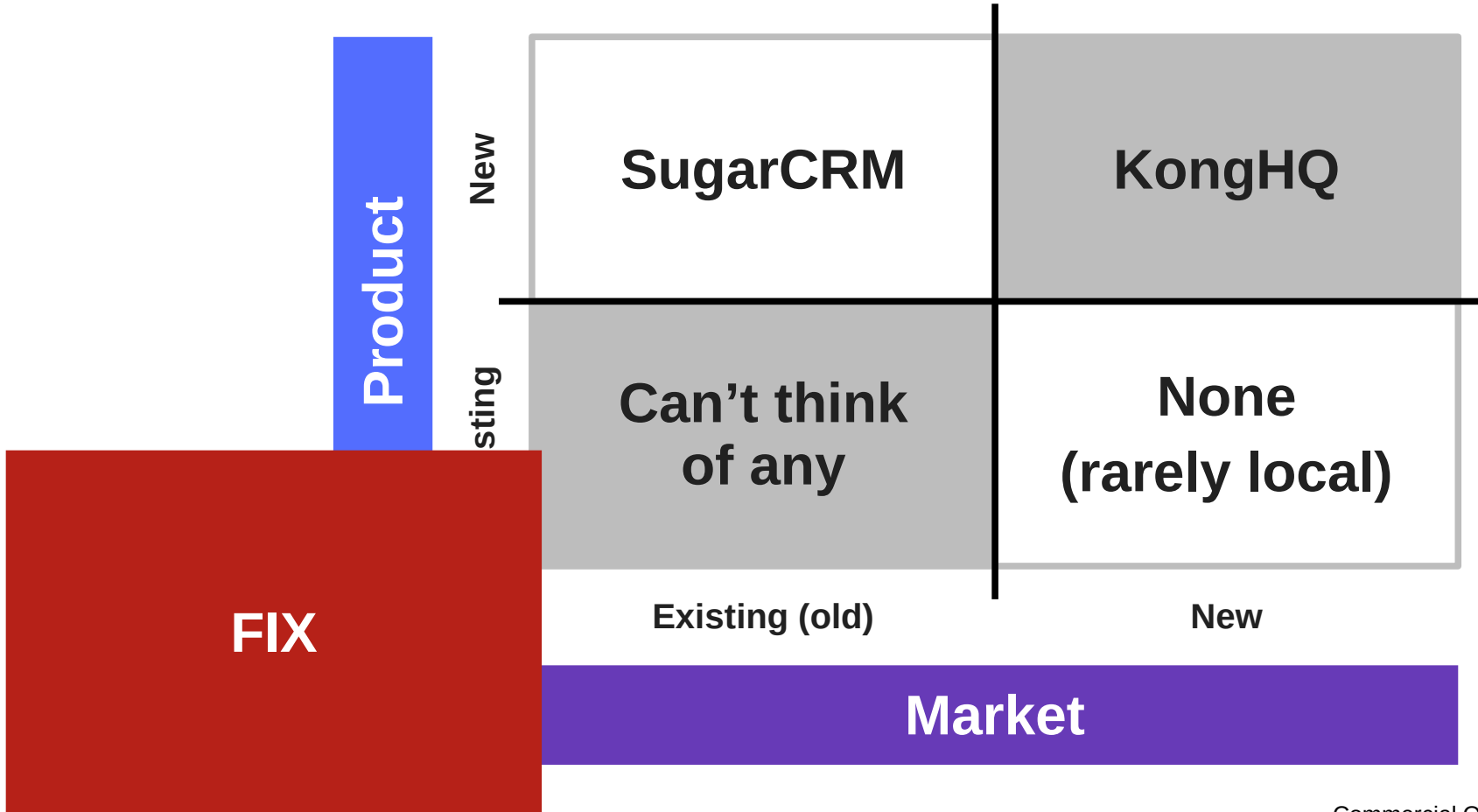
Market Types and Business Models



The Impact of Different Market Situations

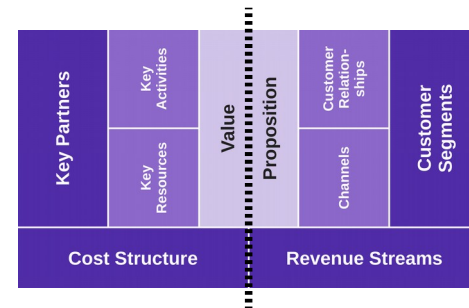
- A new product in an existing market
 - Market is known, little uncertainty
 - Product has efficiency gains
- A new product for a new market
 - No market yet; evangelism needed
 - Breakthrough product
- Resegmenting an existing market
 - Market is known, little uncertainty
 - Product focus on low-cost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

Market Types (Commercial Open Source)

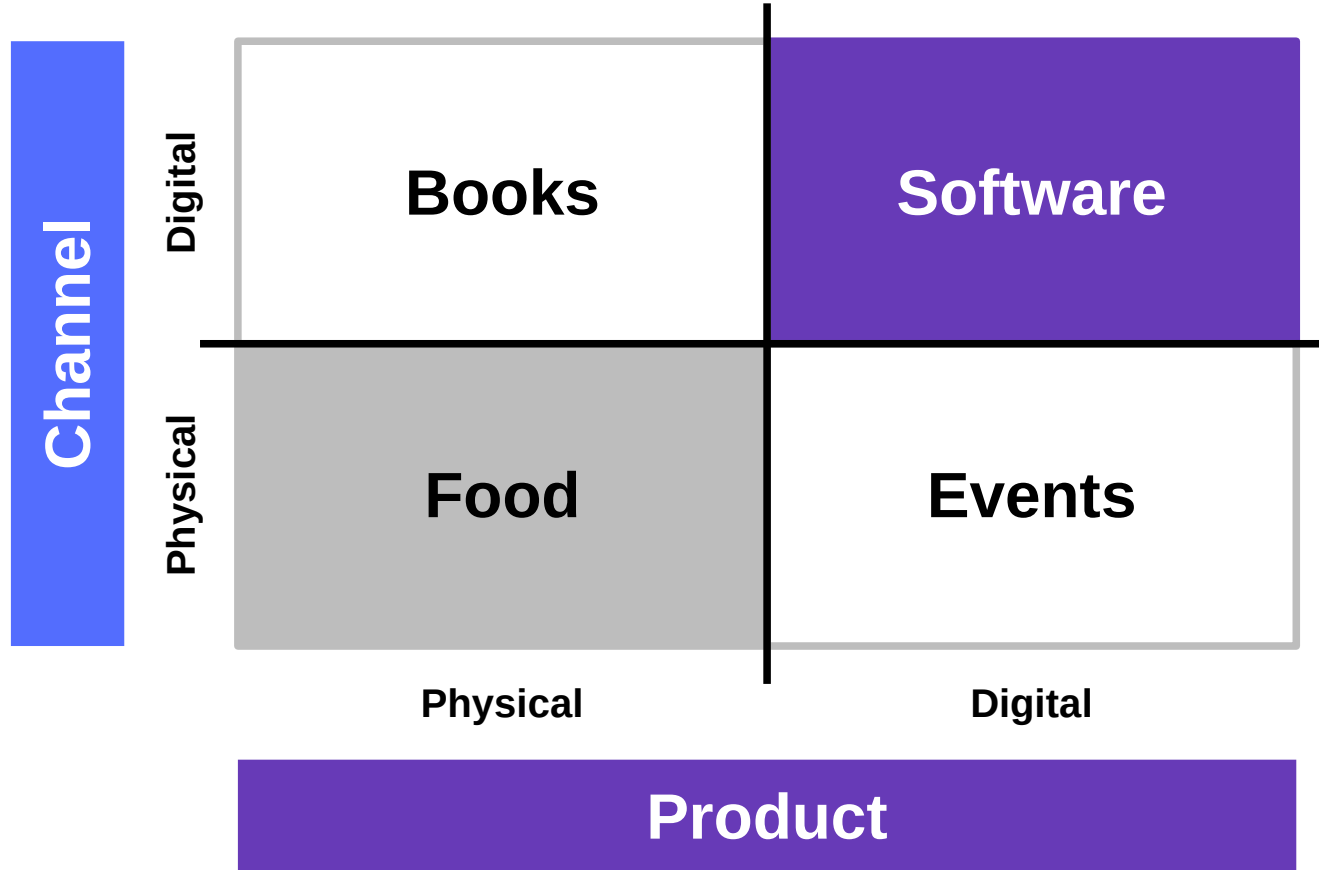


1. Create Hypotheses (Problem-Solution Fit)

- 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	MS Describe <ul style="list-style-type: none">• Market segments• Customer wants/needs• (Customer) personas
	KR By category, ask <ul style="list-style-type: none">• What you need• How much• Where to find them• At what cost		CH Describe <ul style="list-style-type: none">• How the product gets from company to customer	
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			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	

Create Hypotheses (the Open Source Way)

- Listen to the community for insights and ideas

2. Design Experiment (Problem-Solution Fit)

- 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 MVP	<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 (Problem-Solution Fit)

- 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 (Problem-Solution Fit)

- 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

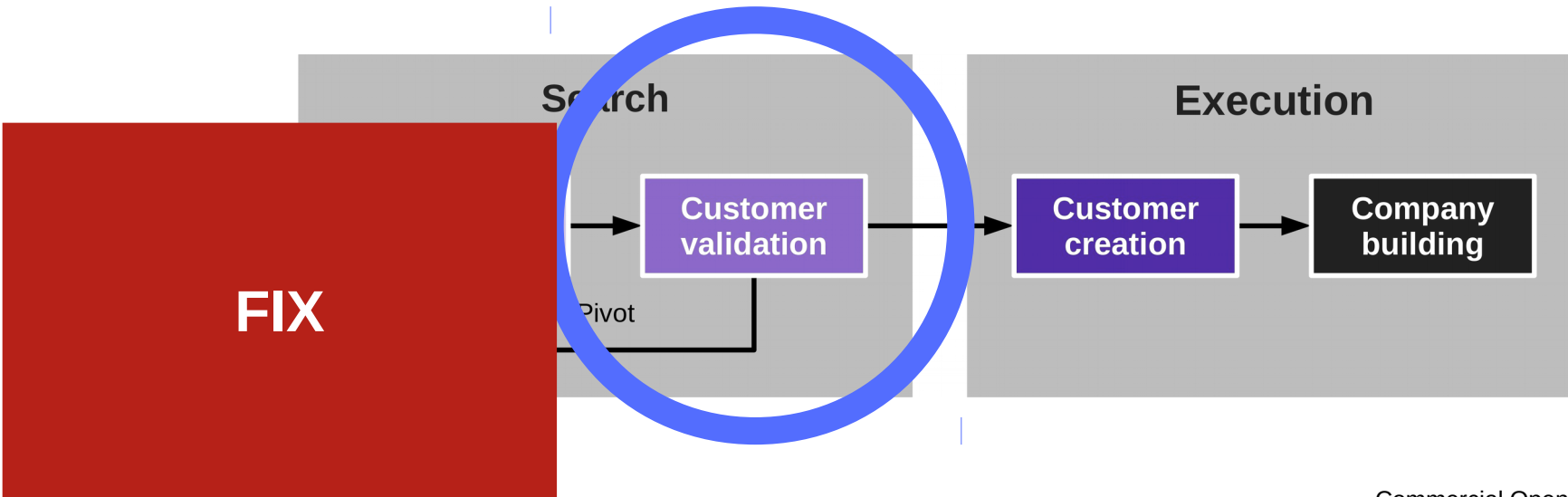
Pivot or Proceed?

- 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 market 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?



FIX

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 market 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:
work

FIX

revise business model
n 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

6. Product-Channel Fit

Product-Channel Fit

- Product-channel fit
 - Is when the product fits your channel, that is, the product's features are optimized for
 - Growth (initially)
 - Throughput (later)



FIX

6. 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. Product-channel fit
6. Startup metrics

Thank you! Questions?

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