

CS7CS6: 100% Continuous Assessment

Allocate to Groups & Assign Seed Project

Business model, hypotheses, test with possible customers

Report and get Feedback – Repeat

Innovation Ethics

Present Lessons Learned and Go/No Go



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

CS7CS2 – Innovation Methods: Introduction: Business Modelling and Customer Development

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With thanks to:
Steve Blank, Jon Feiber, Jon Burke, Liam Cronin
Based on <http://i245.stanford.edu/>
And icorps : https://www.nsf.gov/news/special_reports/i-corps/

Who am I?

SCSS Assoc Prof: ~~G.38 CRI~~, Head of AI Discipline

Research areas: Semantic Web, Data Management, Data Protection, Data Ethics

Associate Director of ADAPT Centre, industry collaborative research

www.adaptcentre.ie

Represent Ireland at International Standards on Trustworthy AI



Previously:

- Taught similar course to MSc and Computing & Business UG
- Director of Knowledge and Data Engineering Group
- UK Rep for UH Communication, Danish startup based on network management software licensed from group at UCL



Why Research and Innovation Methods?

Independence

Self
Realisation

Impact

Innovation Methods

THE FOUR STEPS TO THE EPIPHANY

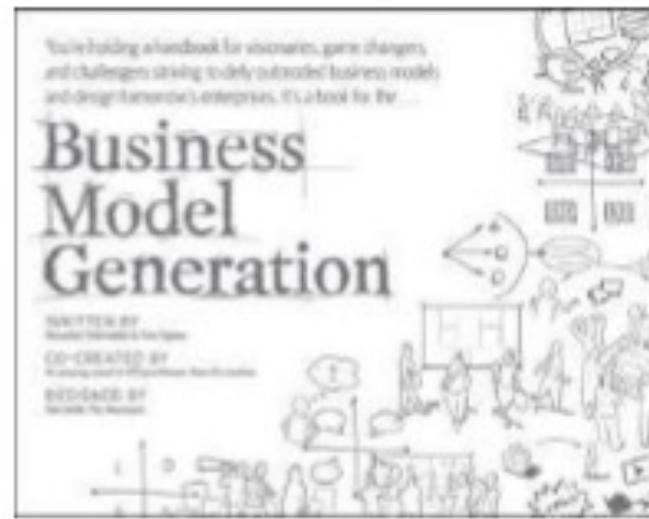
Successful Strategies
for Products that Win

The book that launched
the Lean Startup revolution

Steve Blank

<https://steveblank.com/>

https://www.nsf.gov/news/special_reports/i-corps/



<https://strategyzer.com/>

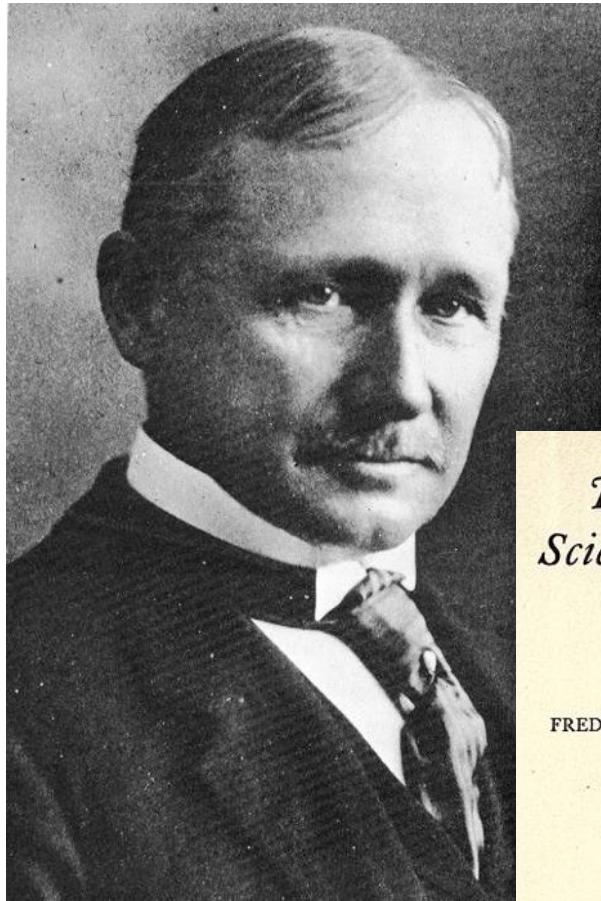
Today

- 1. Why we teach Innovation Methods this way**
- 2. Customer development and business model generation**
- 3. Techniques for getting out of the building and finding customers**



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Why do we need methods for Innovation? Business Models and Customer Development for Start-ups

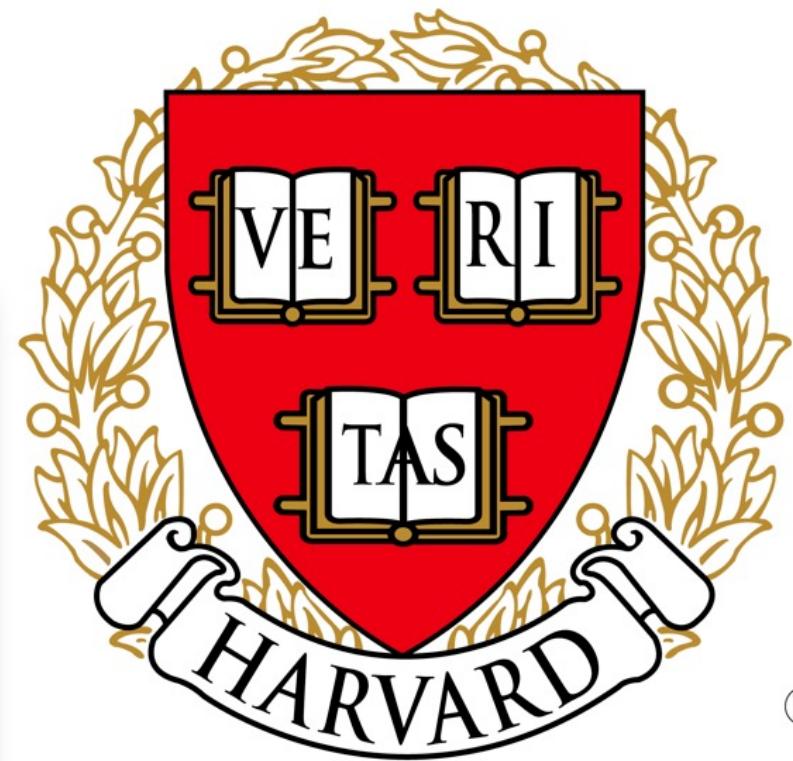


*The Principles of
Scientific Management*

BY
FREDERICK WINSLOW TAYLOR, M.E., Sc.D.
PAST PRESIDENT OF THE AMERICAN SOCIETY OF
MECHANICAL ENGINEERS



HARPER & BROTHERS PUBLISHERS
NEW YORK AND LONDON
1919



1908 MBA

Tools for the 20th Century

“Century of the Corporation”

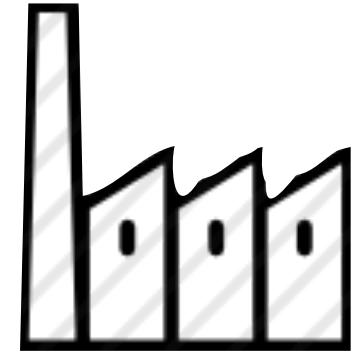
definition of “company”

A organization which sells
a product or service in
exchange for revenue and
profit

... but what about startups?



**Core Idea or
Technology**



**Core Idea or
Technology**

Company



**Startups are a Smaller Version
of a Large Company**

**Startups lack
something
Companies have**

Business Model

**Startups Search
Companies Execute**

I-Corps definition of “startup”

a **temporary** organization
designed to search
for a **repeatable** and **scalable**
business model

Startups



**Business
Model**

Companies



**Product/
Service**

**We were wrong about
how to create a startup**

How to create a startup (before 2010) ...

Write A Business Plan



Create Financial Statements



Make a FIVE YEAR Forecast

14960,92	24707,45	22261,00	11231,22	12594,03	12793,01	226678,74	31231,22	24707,45	11231,22	12594,03	11996,10	23076,28	12593,03	1279,00	9695,90	23473,81	13071,40	111,00	8871,50	23871,34	13638,57	9,00	8871,50	24268,87	25595,70	12,00	24266,40	14960,97	8871,50	24707,45	11231,22	12595,03	11996,10	25063,94	31231,22	24707,45	25063,94																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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**What we know now
(and have known **all**
along)...**

Business Plans

are

FICTION

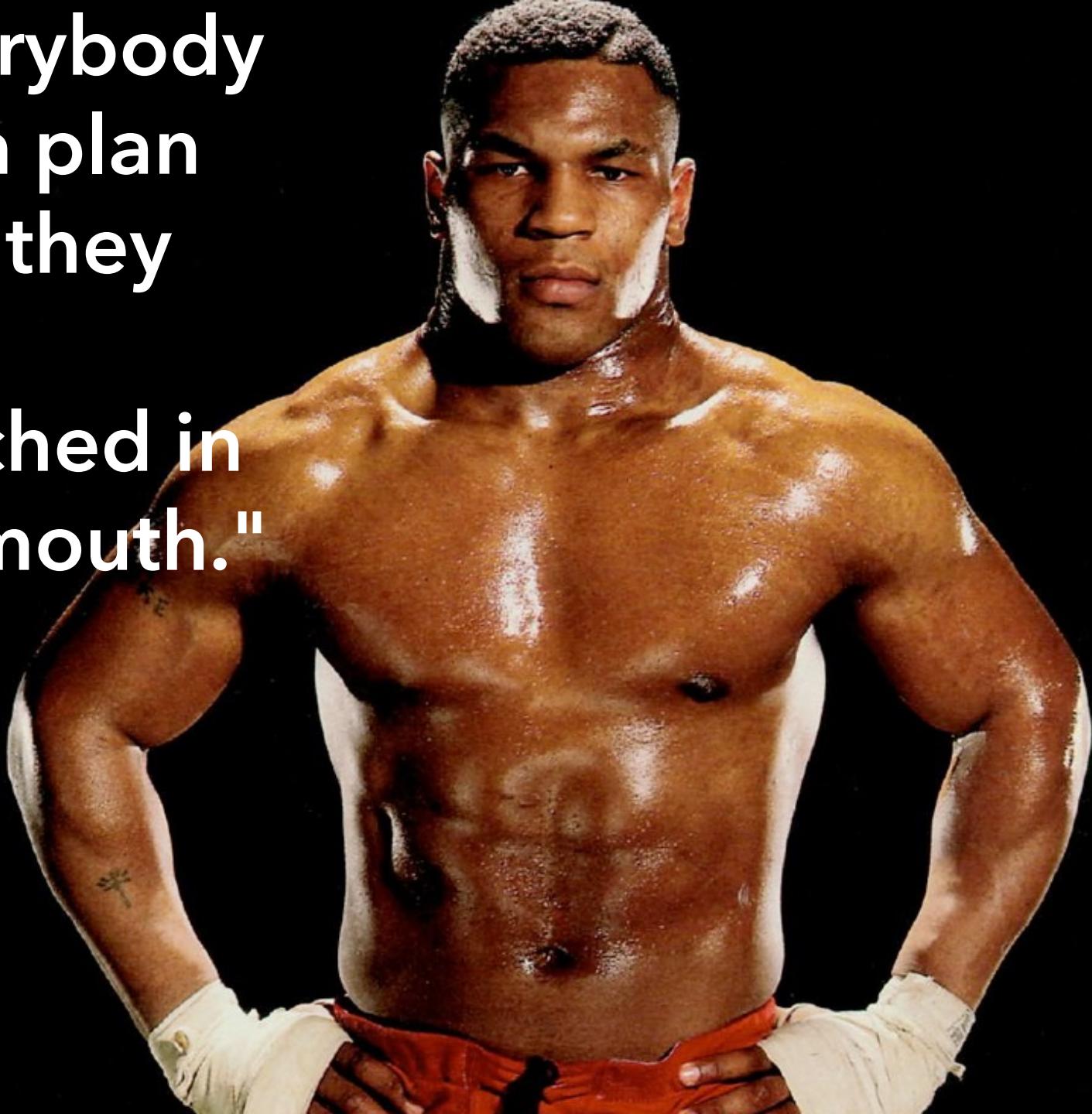
**“We always ask for them.
We never read them.”**

- KPCB



Tyson's Law

"Everybody
has a plan
until they
get
punched in
the mouth."



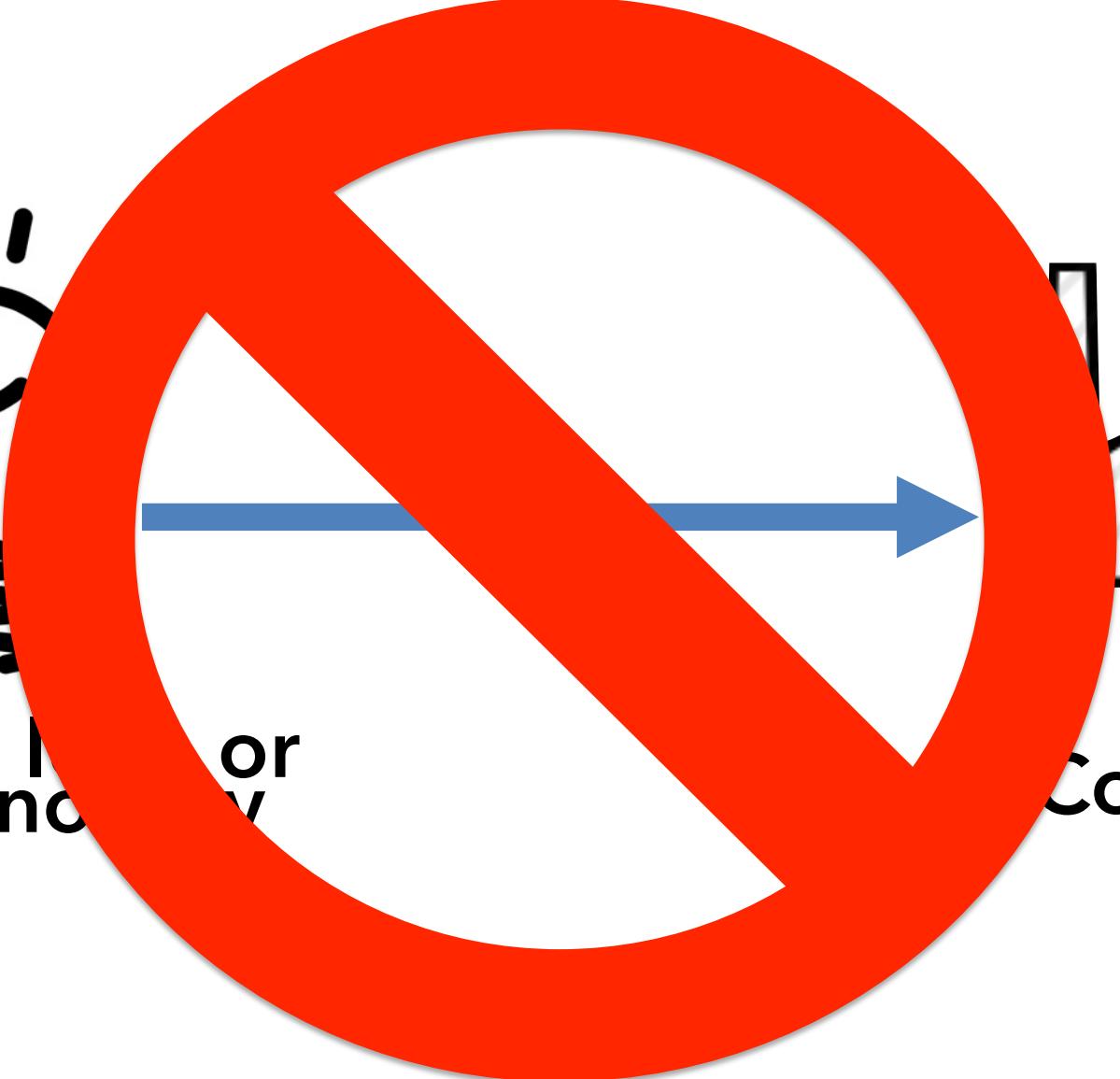
A	B	C	D	E	G	H	I	J	K	L	M	N	
Balance Sheet													
										Year			
Assets										1999	2000	2001	2002
Cash and cash equivalents*										\$4.27	\$6.38	\$7.62	\$8.83
Accounts receivable*										\$20.58	\$24.39	\$28.77	\$34.11
Inventories*										\$26.73	\$30.45	\$36.75	\$43.27
Deferred income taxes*										\$0.00	\$0.00	\$0.00	\$0.00
Total current assets										\$51.58	\$61.22	\$73.14	\$86.21
Fixed assets													
Cost*										\$331.64	\$423.92	\$503.87	\$613.28
Accumulated Depreciation*										\$98.72	\$105.09	\$112.40	\$122.26
Net fixed assets										\$232.92	\$318.83	\$391.47	\$491.02
Total assets										\$284.50	\$380.05	\$464.61	\$577.23
Liabilities													
Accounts payable*										\$31.83	\$63.43	\$83.84	\$94.41
Current debt*										\$30.86	\$43.03	\$64.85	\$79.49
Total current liabilities										\$62.69	\$106.46	\$148.69	\$173.90
Long-term debt*										\$40.00	\$46.92	\$53.41	\$73.57
Other long-term liabilities*										\$0.00	\$0.00	\$0.00	\$0.00
Total liabilities										\$102.69	\$153.38	\$202.10	\$247.47
Shareholders' equity													
Common Stock and Additional Paid in Capital*										\$90.00	\$130.00	\$160.00	\$220.00
Retained Earnings*										\$91.81	\$96.67	\$102.51	\$109.76
Total Shareholders' Equity										\$181.81	\$226.67	\$262.51	\$329.76
Total Liabilities and shareholders' Equity										\$284.50	\$380.05	\$464.61	\$577.23

A	B	C	D	E	G	H	I	J	K	L	M	N	
Year													
							1999	2000	2001	2002			
Assets													
Cash and cash equivalents*							\$4.37	\$6.61	\$7.62	\$8.83			
Accounts receivable*							\$1.07	\$1.01	\$28.77	\$34.11			
Inventories*							\$1.73	\$1.45	\$6.75	\$43.27			
Deferred income taxes*							\$0.00	\$0.00	\$0.00	\$0.00			
Total current assets*							\$51.58	\$61.04	\$14.14	\$86.21			
Fixed assets*													
Less accumulated depreciation*								\$98.72	\$105.09	\$112.40	\$122.26		
Goodwill*							\$21.12	\$13.83	\$10.02	\$5.02			
Intangible assets*							\$0.00	\$0.00	\$0.00	\$0.00			
Other assets*							\$0.00	\$0.00	\$0.00	\$0.00			
Total assets							\$23.40	\$80.00	\$46.61	\$117.23			
Liabilities													
Accounts payable*								\$31.83	\$63.43	\$83.84	\$94.41		
Current debt*								\$30.86	\$43.03	\$64.85	\$79.49		
Total current liabilities								\$62.69	\$106.46	\$148.69	\$173.90		
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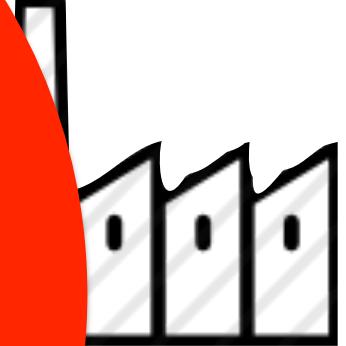
Five year forecast?

MAGICAL THINKING

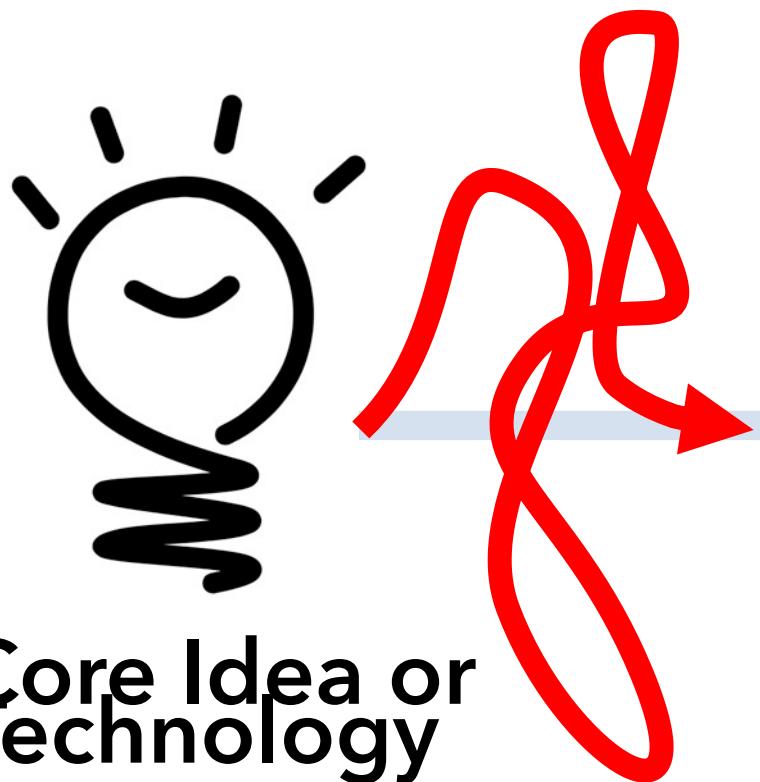




Core
Technology



Company



**Core Idea or
Technology**

Company



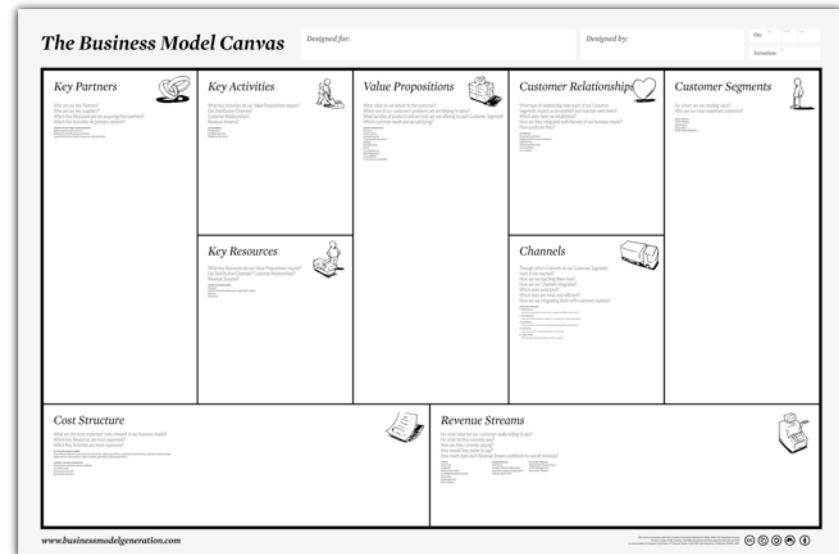
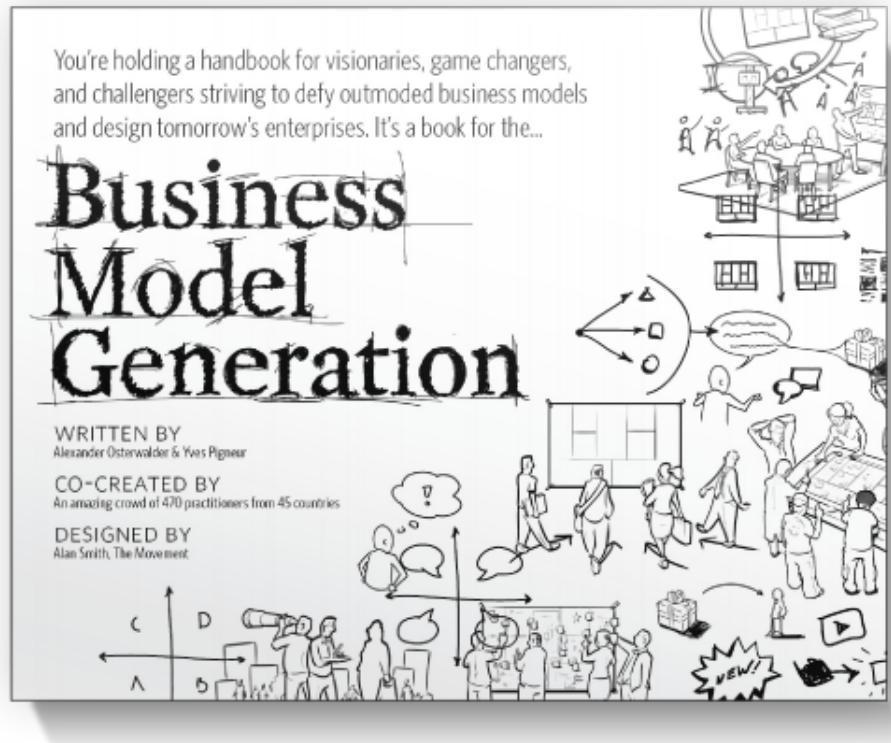
Core Idea or
Technology



Company

2010

Business Model Generation

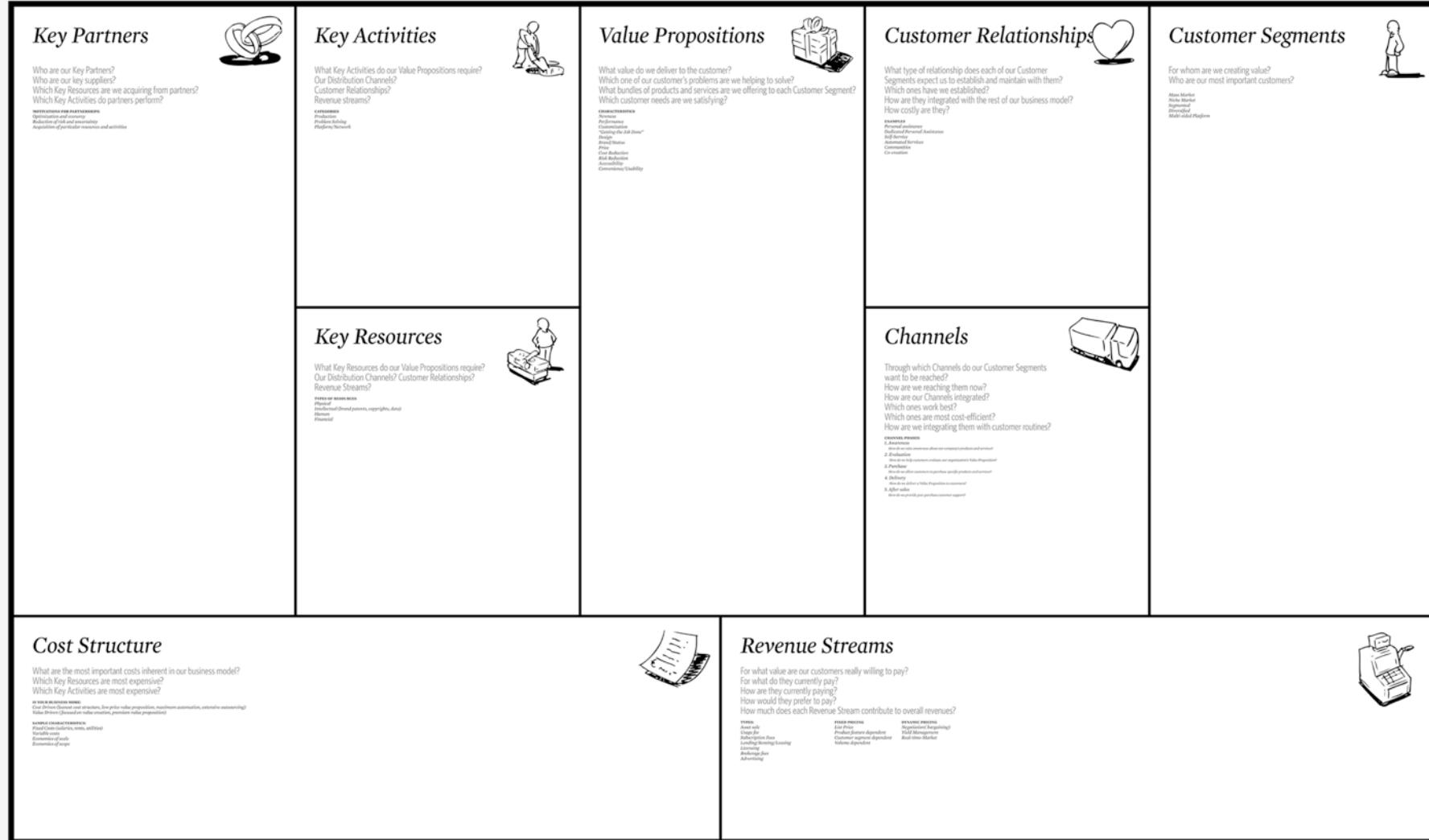


The Business Model Canvas

Designed for:

Designed by:

On: Day Month Year
Iteration: No.



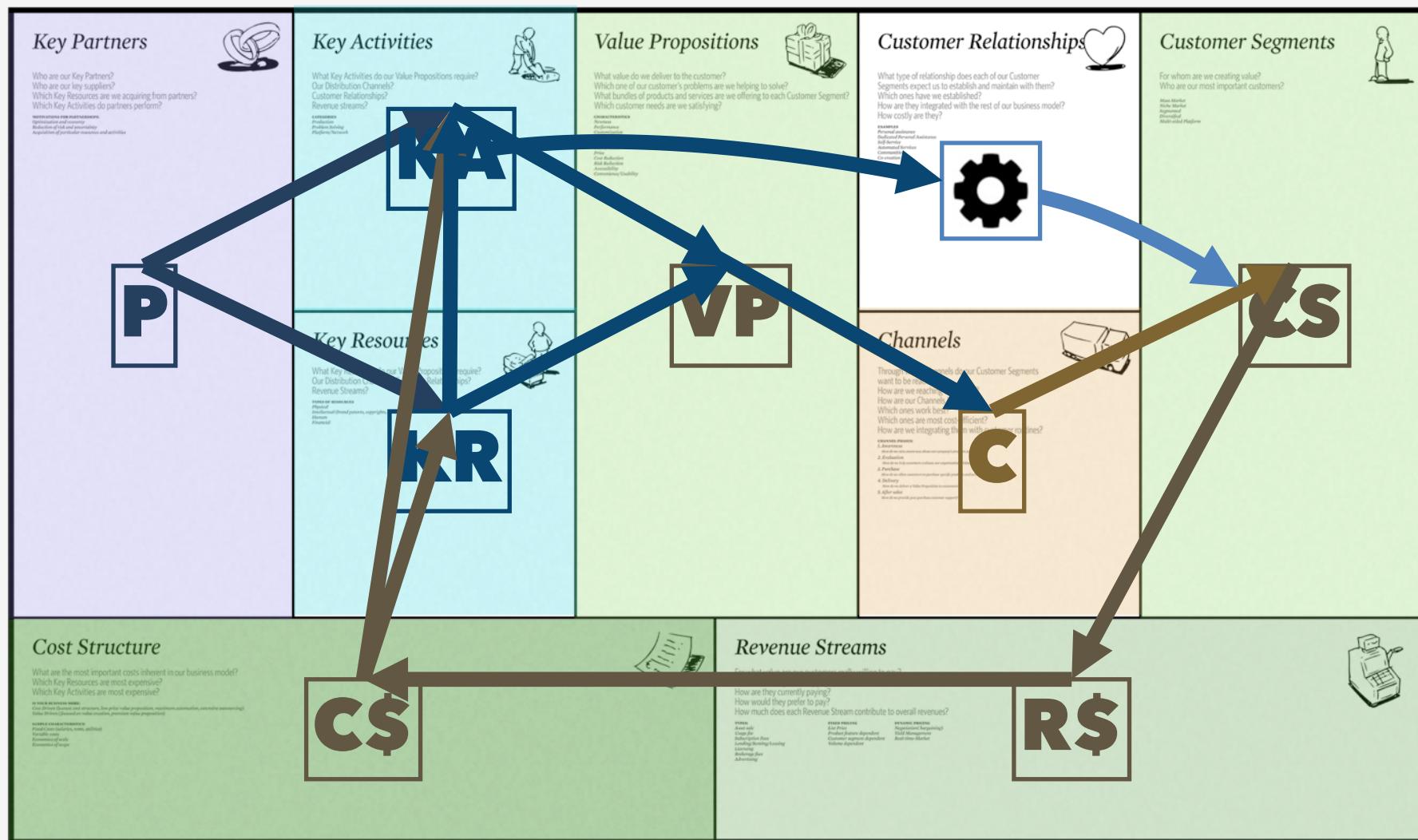
The Business Model Canvas

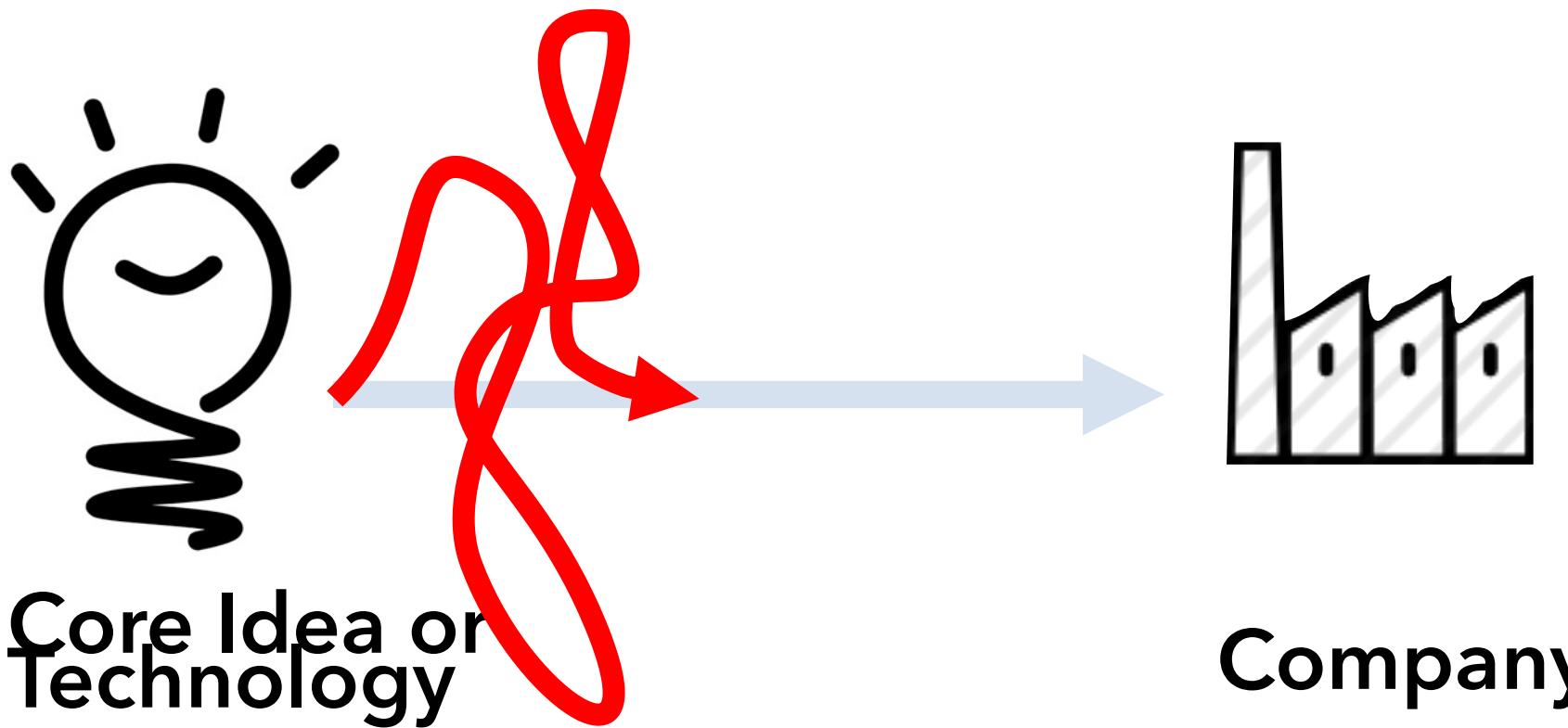
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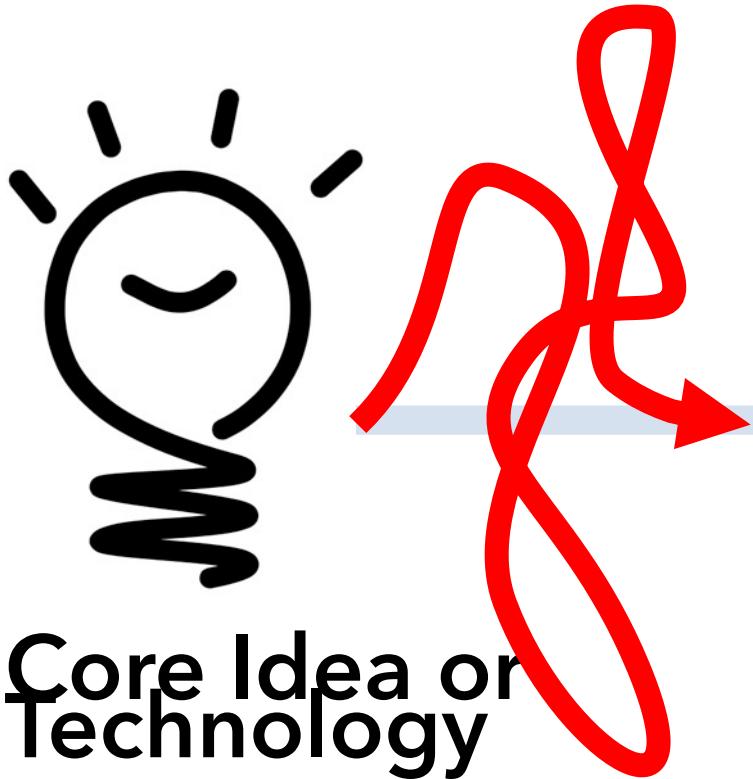
Designed by:

On: Day Month Year

Iteration: No.

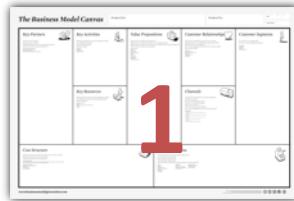


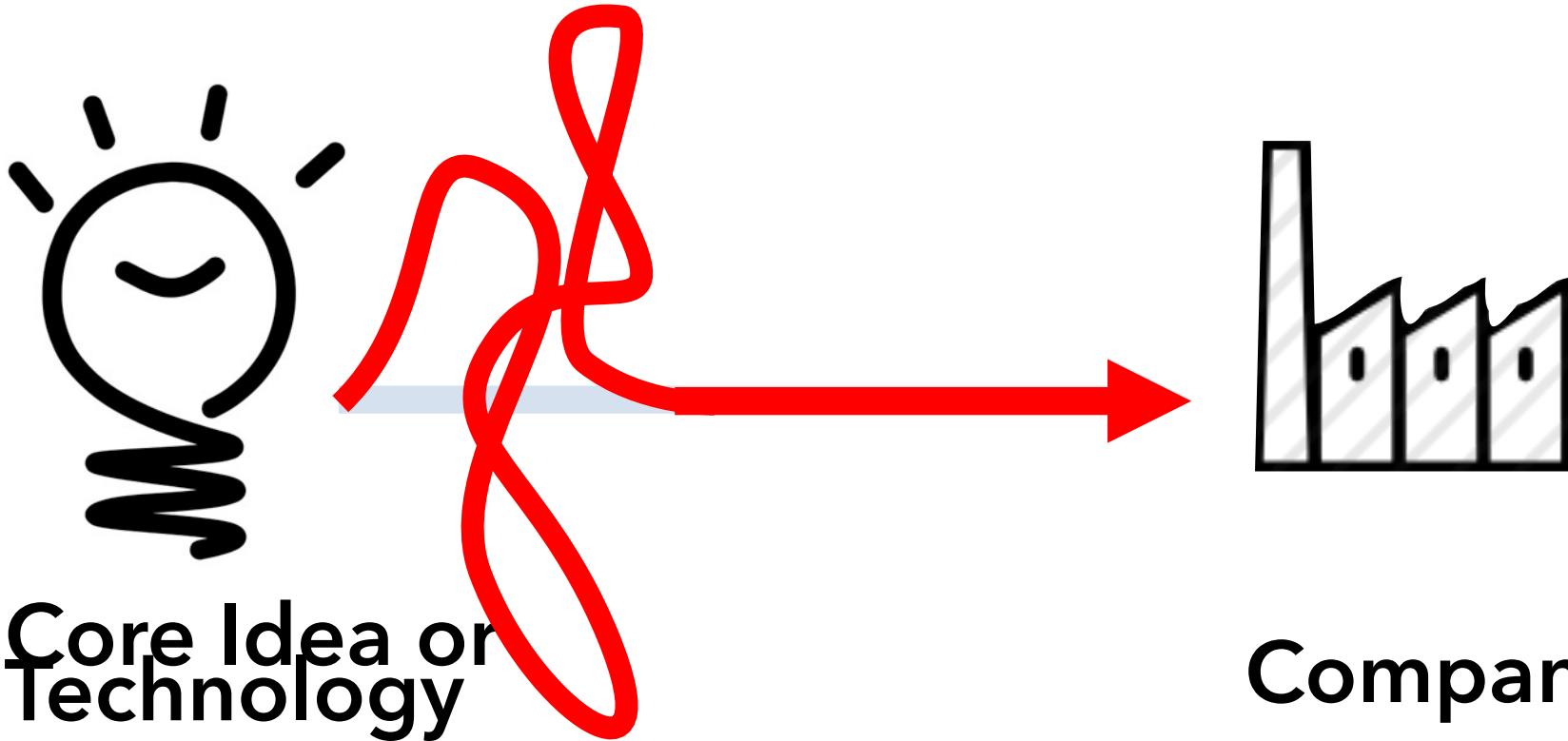




Core Idea or
Technology

Company



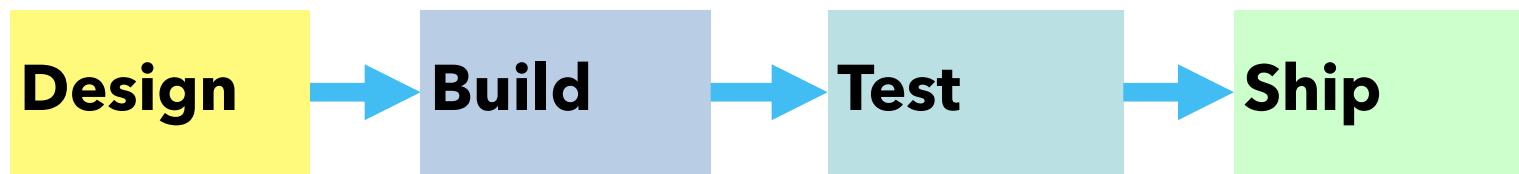


**We were wrong about
what a startup does**

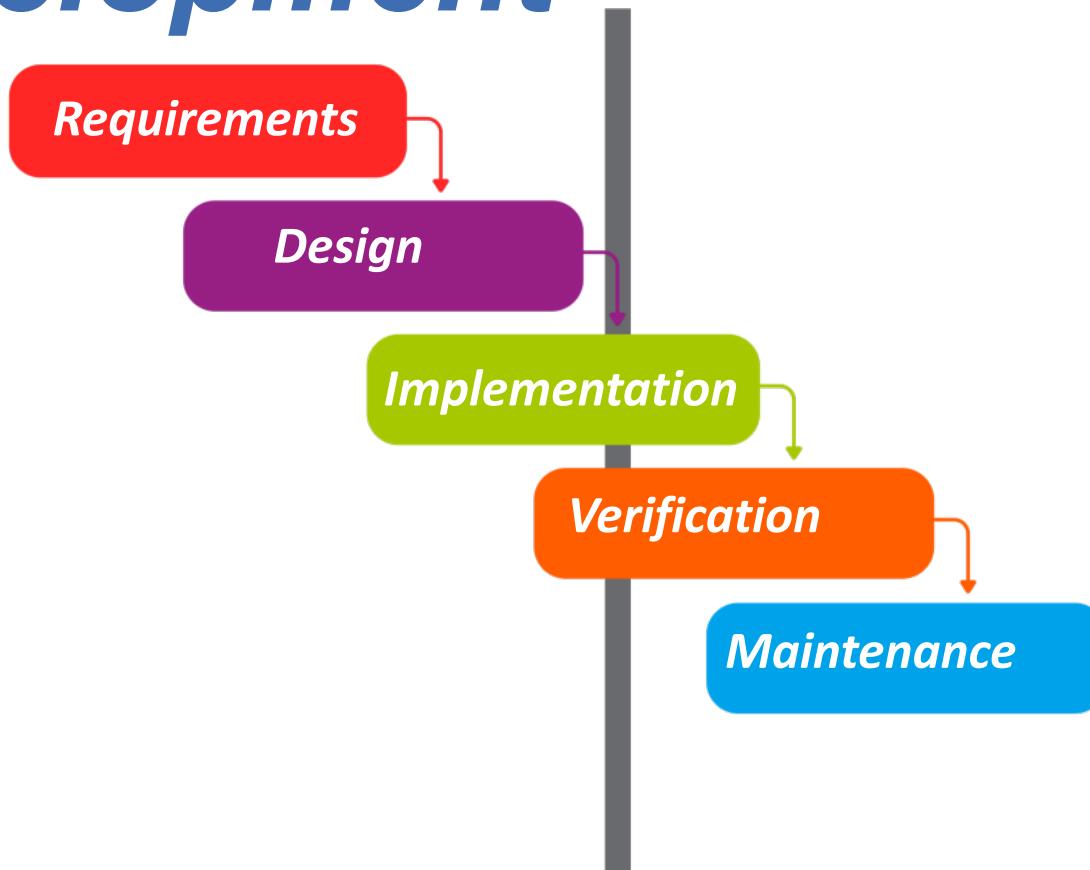
Design & Build Product

Go To Market

Product Introduction Model

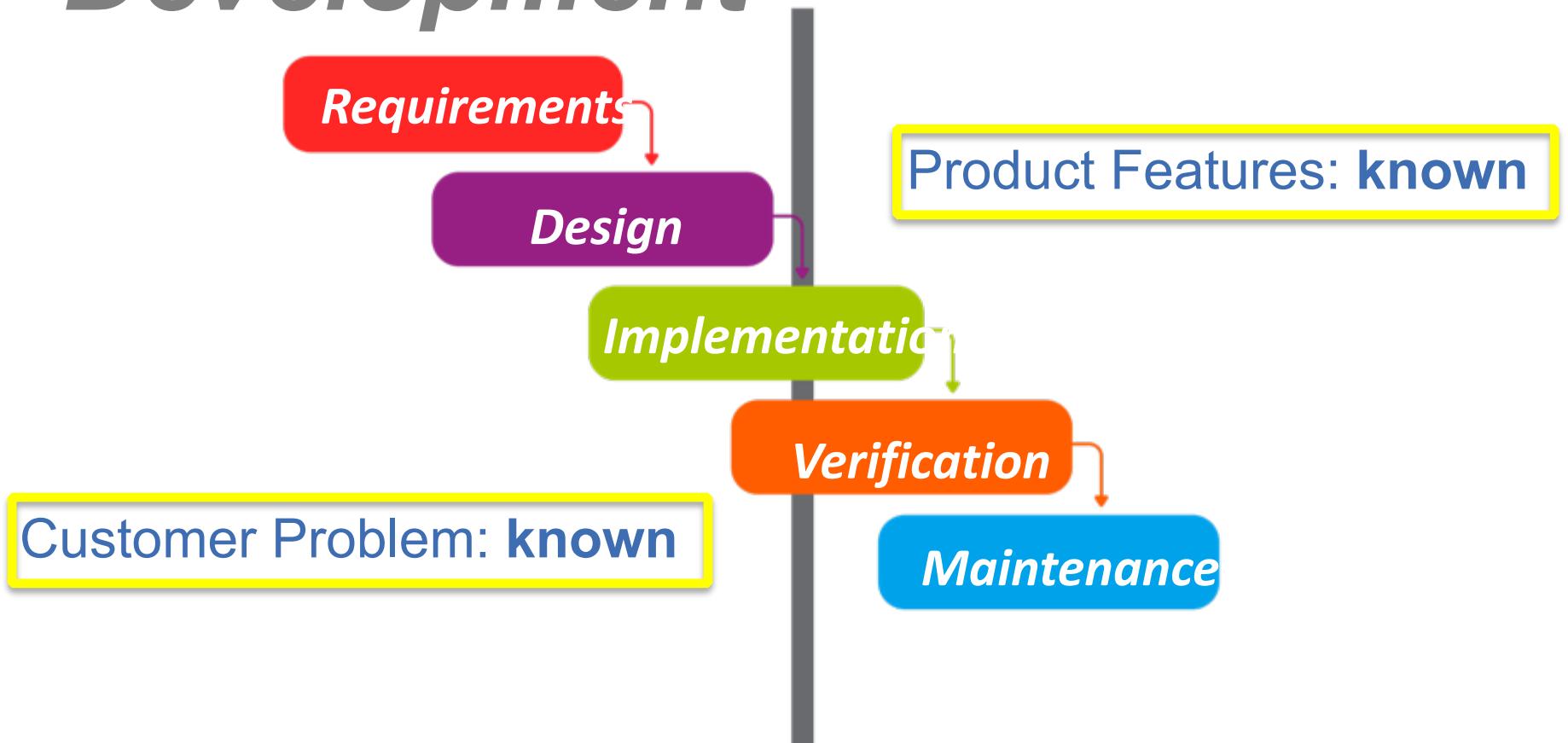


Software Waterfall Development



Source: Eric Ries
<http://startuplessonslearned.blogspot.com>

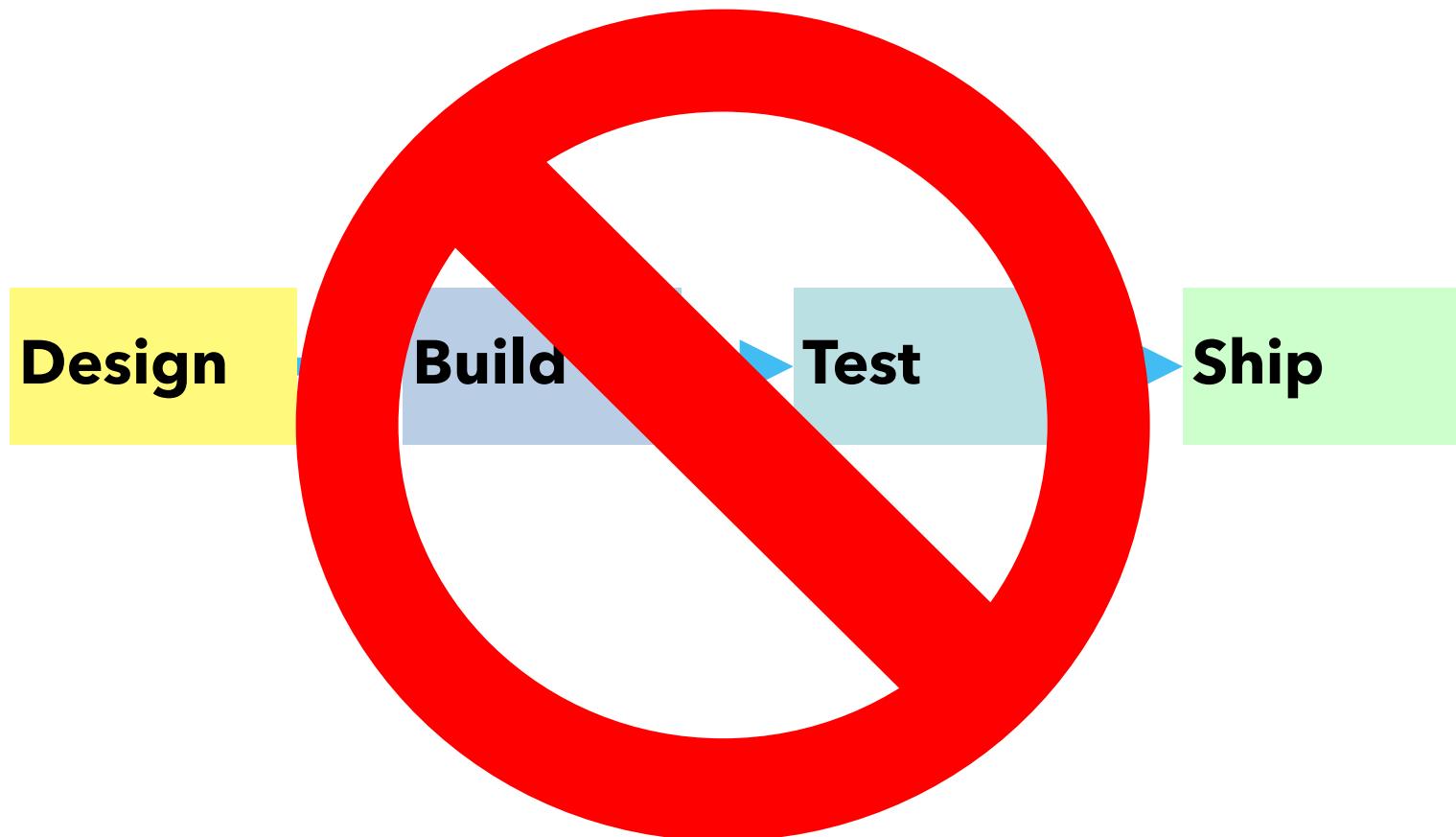
Software Waterfall Development



Source: Eric Ries

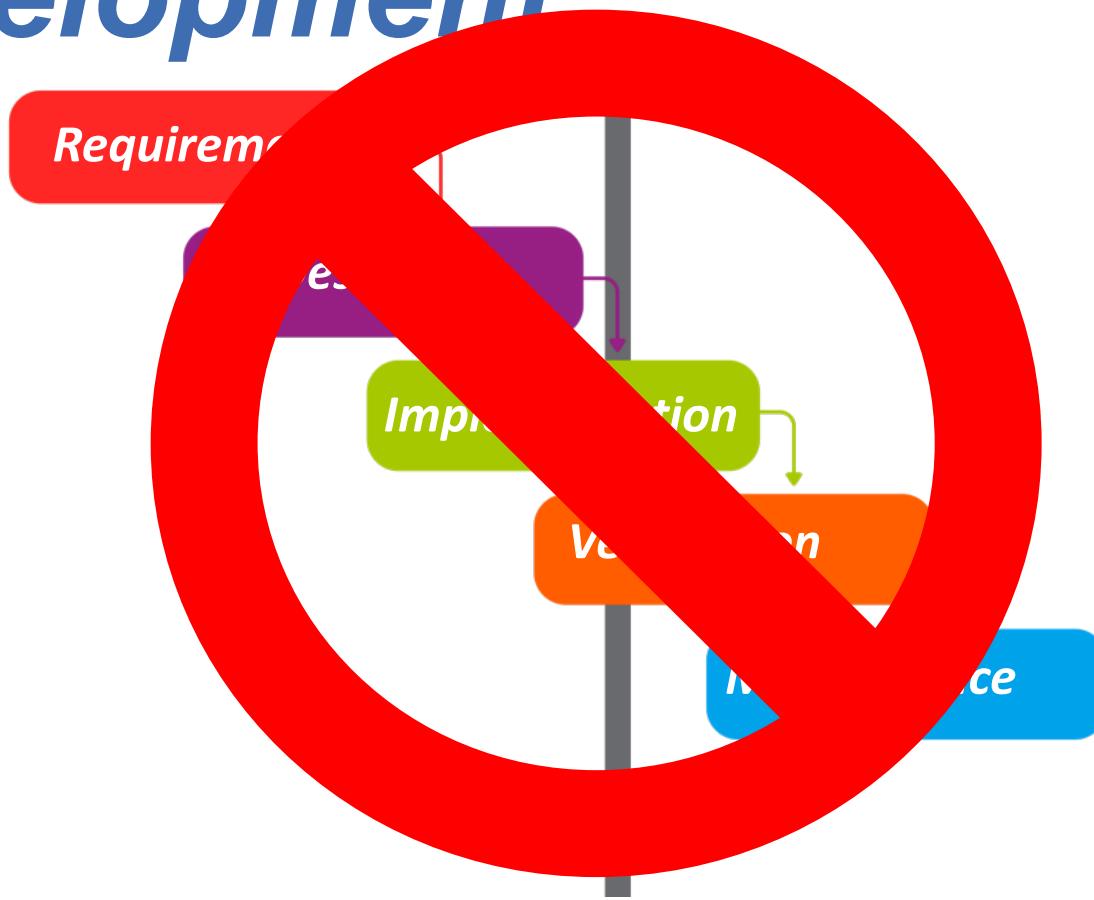
<http://startuplessonslearned.blogspot.com>

Product Introduction Model



Software Waterfall

Development



Source: Eric Ries
<http://startuplessonslearned.blogspot.com>

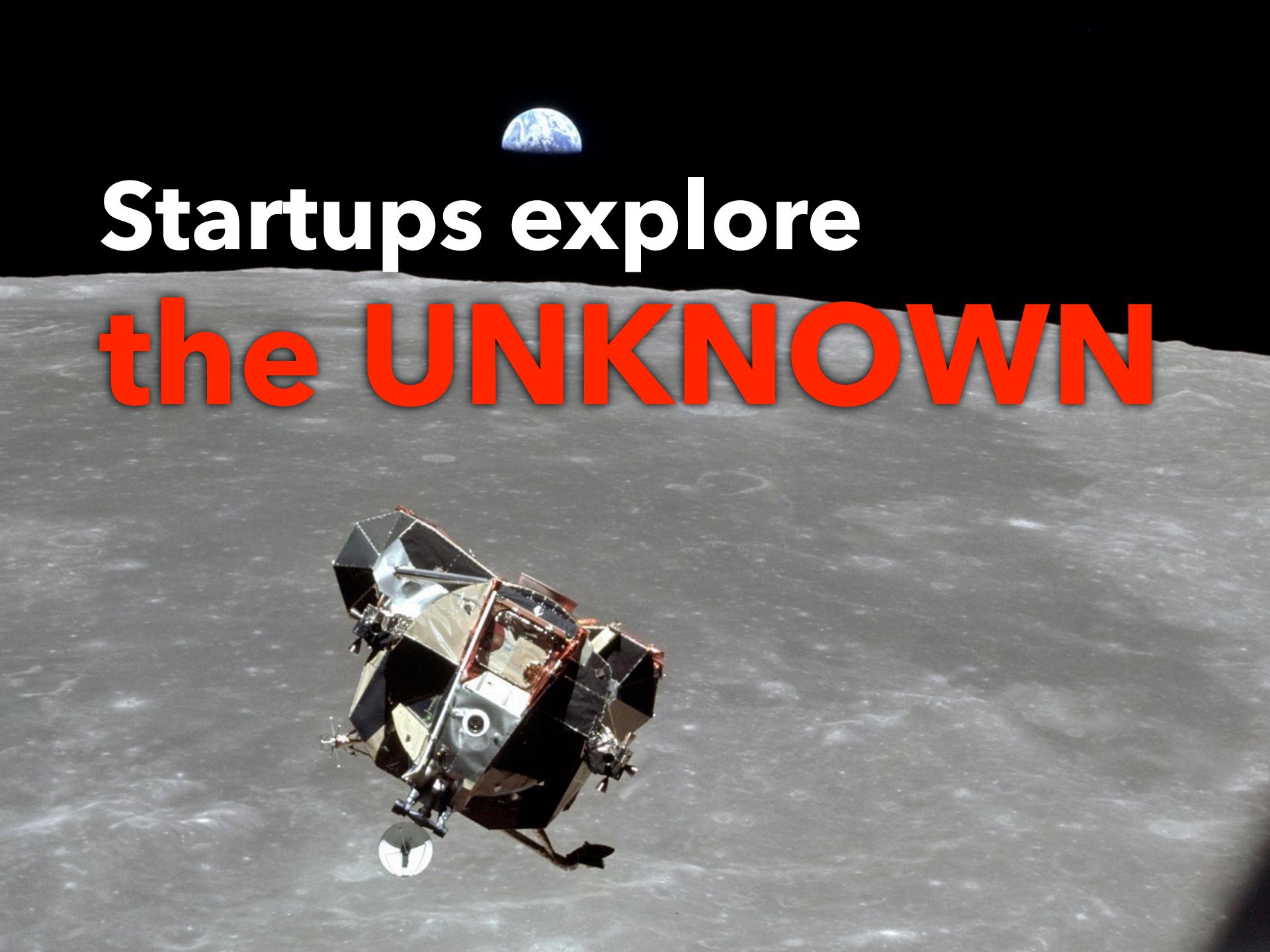
**"There are known knowns;
there are things we know we know.**

**We also know there are known
unknowns; that is to say we know
there are some things we do not know.**

**But there are also unknown unknowns
– the ones we don't know we don't
know."**

- Donald Rumsfeld

**Startups are in
SEARCH
mode**

A photograph of a small satellite, likely a CubeSat, floating in the void of space. The satellite is dark with solar panels deployed. In the upper portion of the image, the Earth is visible as a blue and white sphere against the black of space.

Startups explore
the UNKNOWN

**the biggest
UNKNOWN for a
startup?**

the CUSTOMER.

Why do Startups **fail**?



1. Single Founder



2. Bad Location



3. Marginal Niche



4. Derivative Idea



5. Obstinacy



6. Hiring Bad Programmers



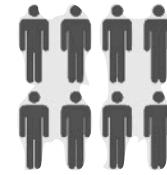
7. Choosing the Wrong Platform



8. Slowness in Launching



9. Launching Too Early



10. Having No Specific User in Mind



11. Raising Too Little Money



12. Spending Too Much



13. Raising Too Much Money



14. Poor Investor Management



15. Sacrificing Users to (Supposed) Profit



16. Not Wanting to Get Your Hands Dirty



17. Fights Between Founders



18. A Half-Hearted Effort



from
eponymous essay
by Paul Graham
<http://fnf.vc/PG-01>

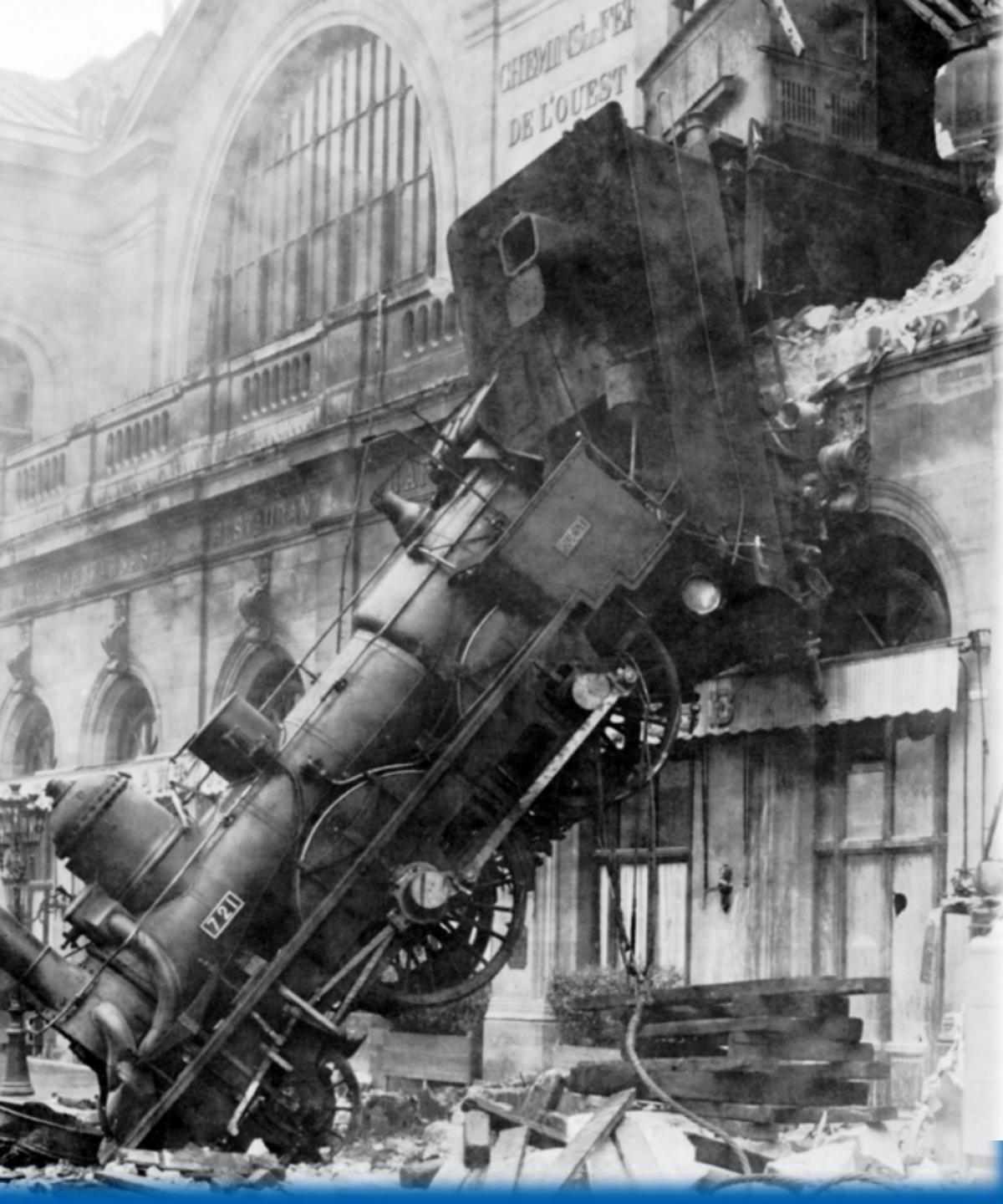
visualized by
Mark Vital

Build with [Analogy](#), icons made by [Freepik](#)

etc.

TOP 10 STARTUP MISTAKES





Startups don't fail
because they
fail to make
something.

Startups fail
because
they
fail to make
something
someone
wants to
buy
from them.

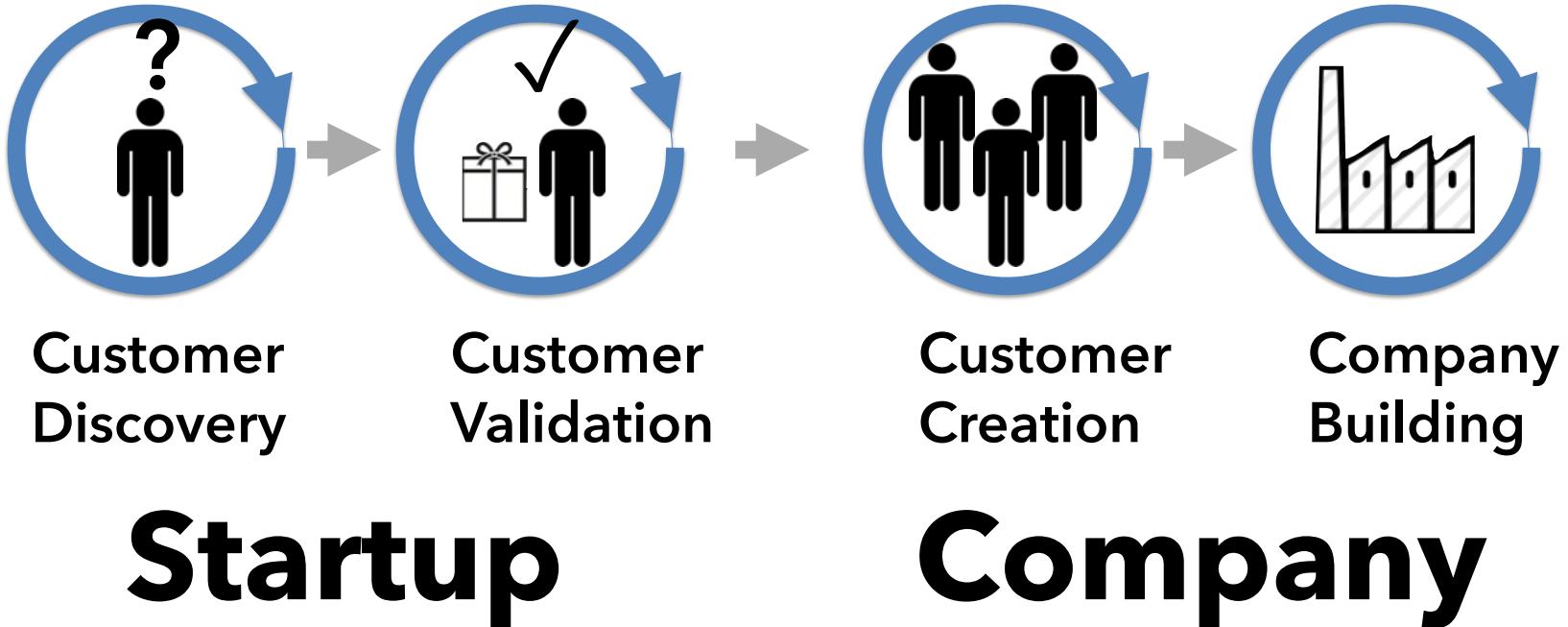
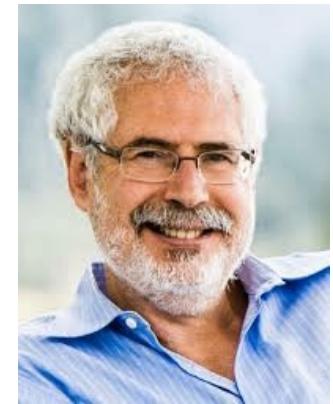


**You are already an expert in
the TECHNOLOGY**

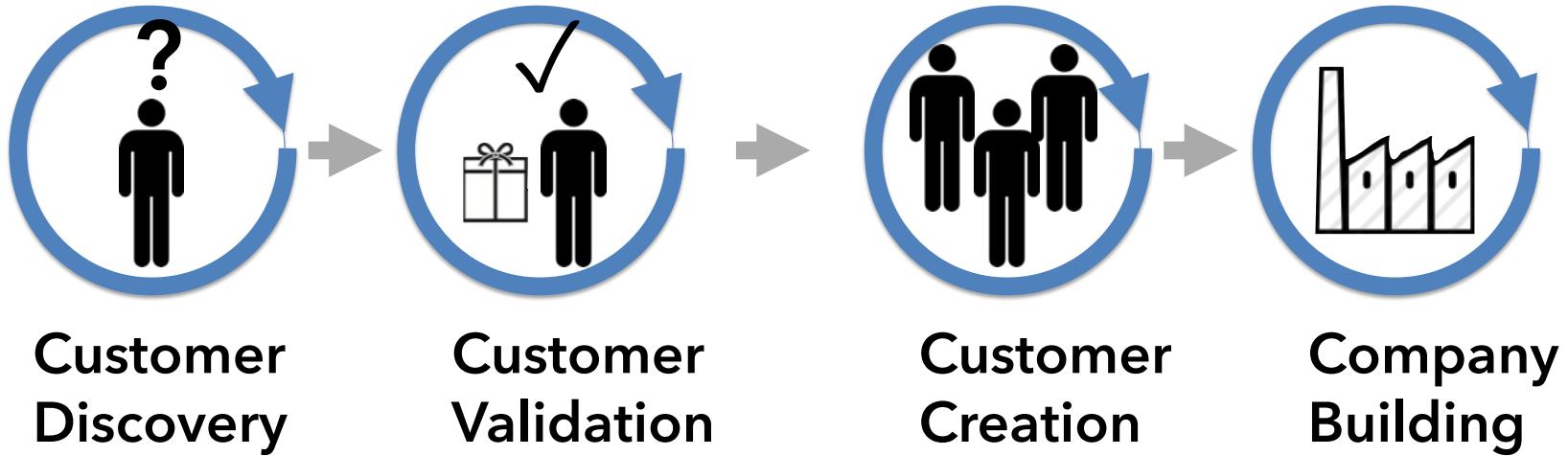
**You must now
become an expert in
the CUSTOMER**

Customer Development

Steve Blank



the *transformation*

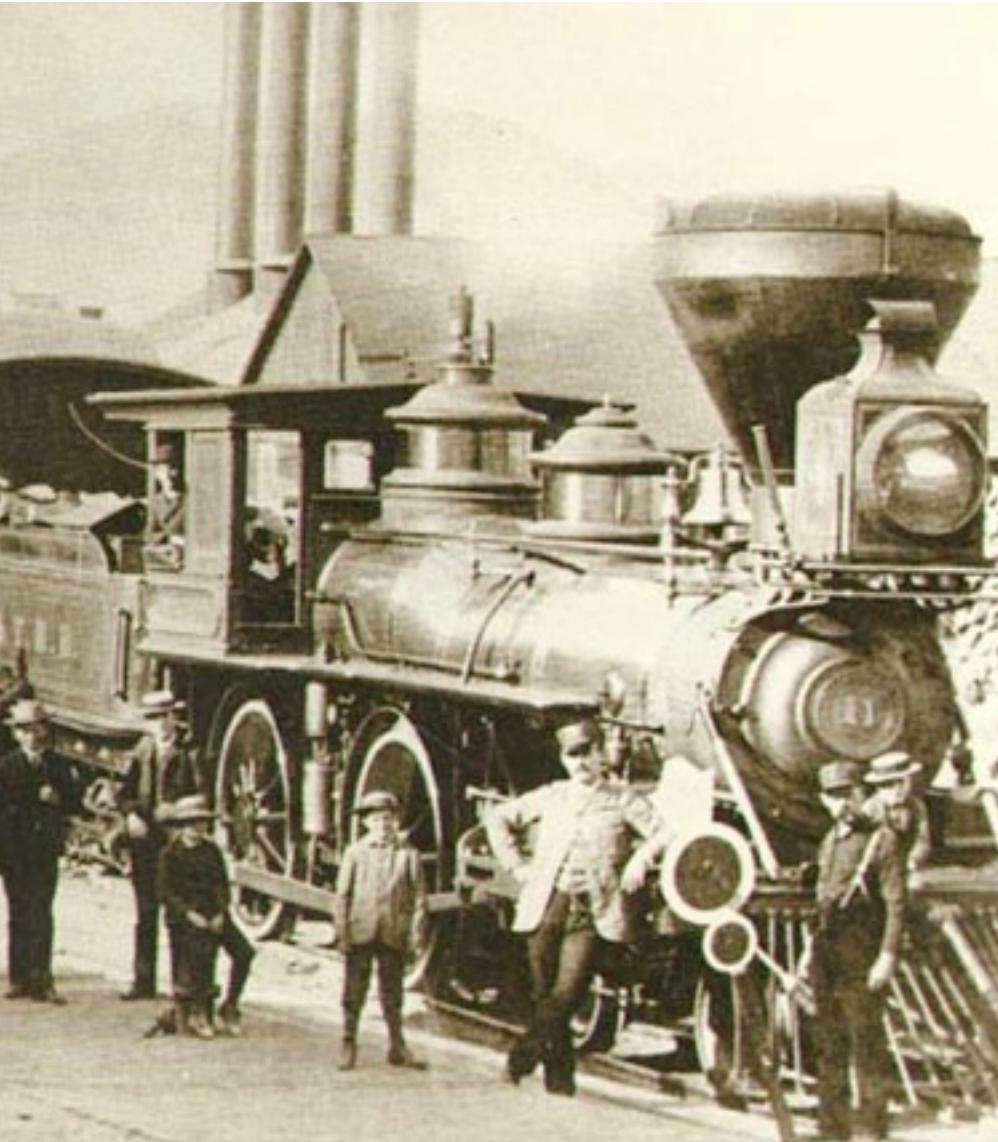


Startups
Search

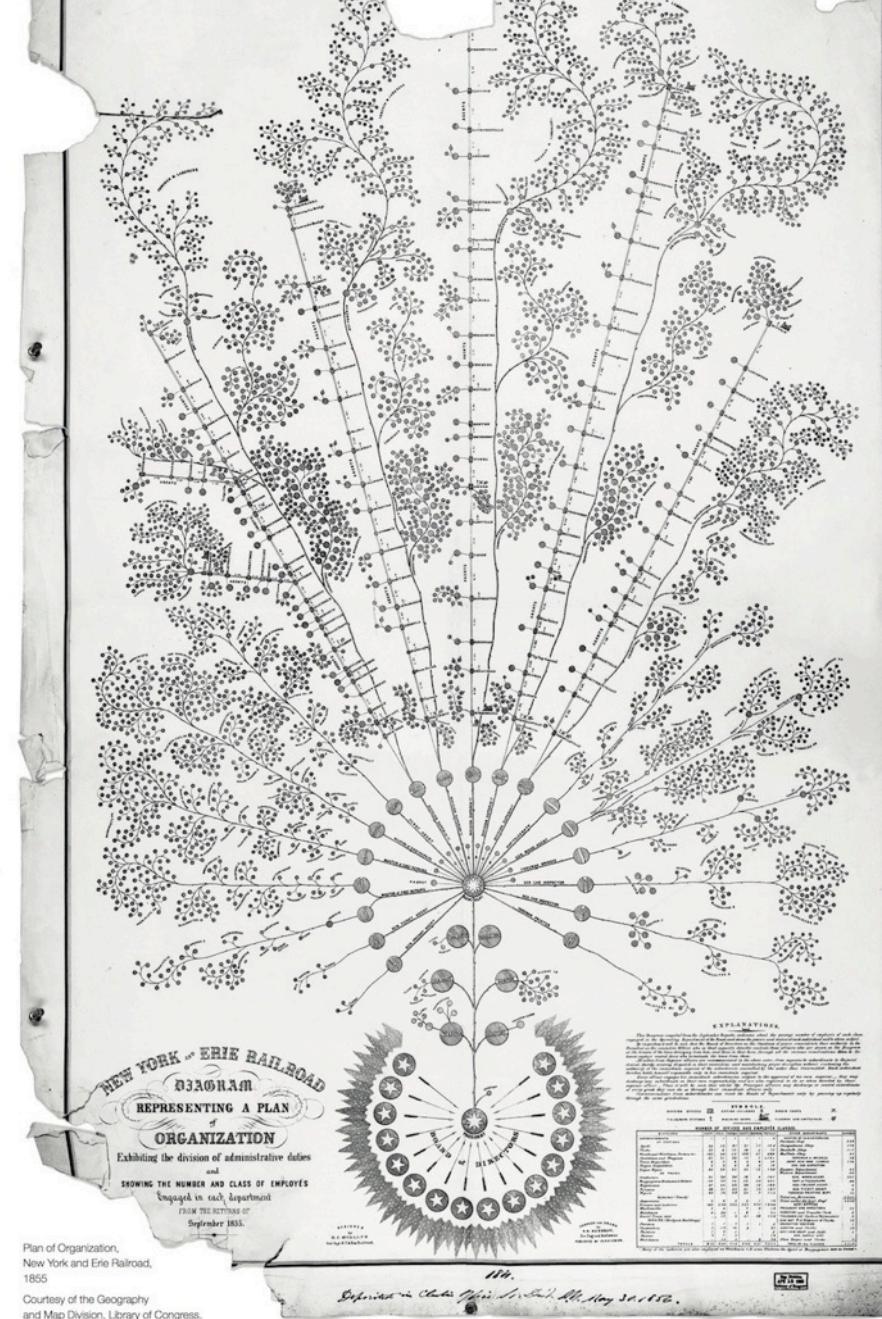
Companies
Execute

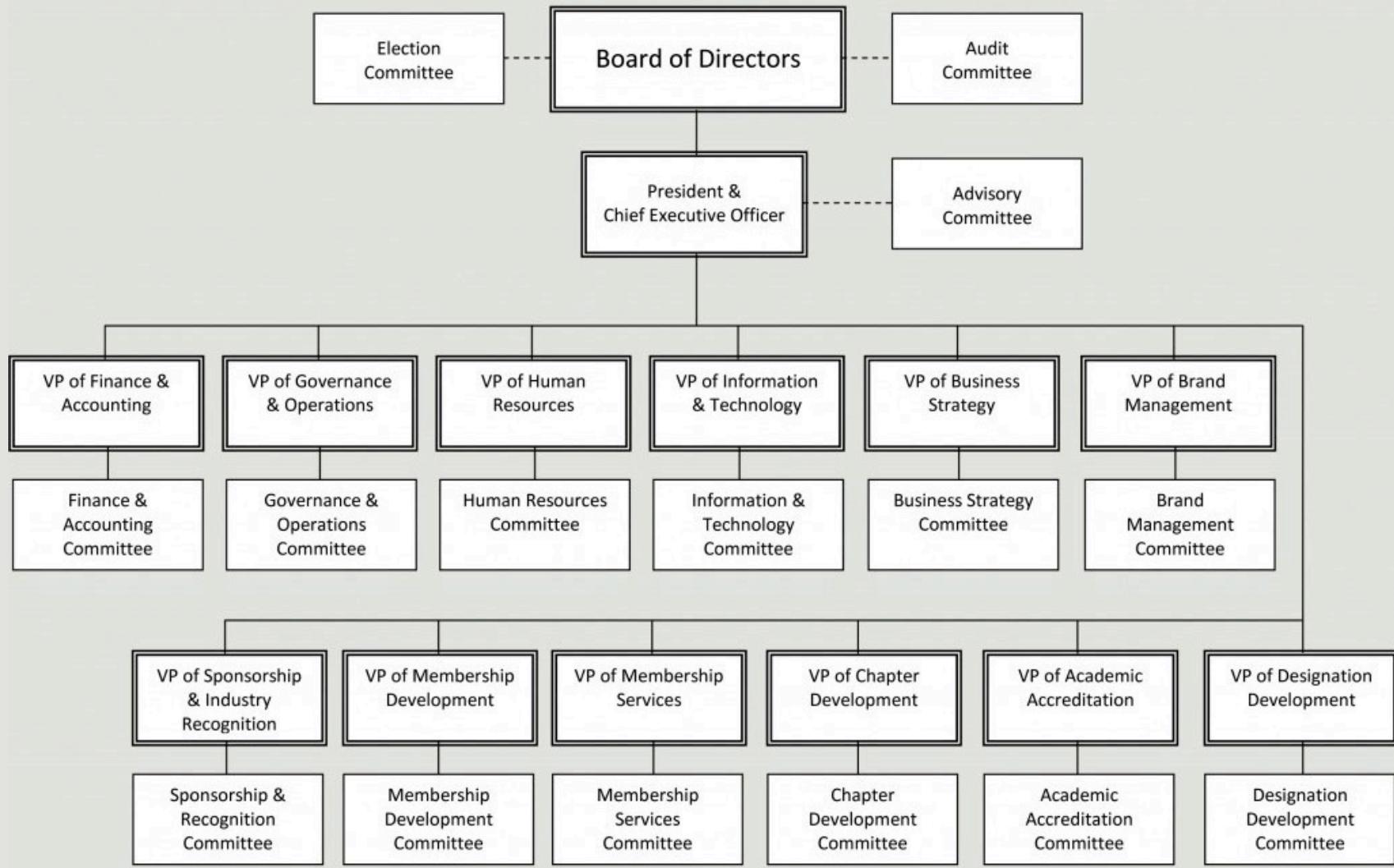
**We were wrong about
how to organize
a startup**

You should be
organized
by your business
model



1856 - First Org Chart





You should be
organized
by our business
model



**Startups don't have
a business model**

yet

You should be
organized
by the work to be
done

**Startups are in
SEARCH
mode**

EVERYONE is on the
SEARCH team

We were wrong about
how to teach
entrepreneurship

What We Taught

Organizational Behavior, HR
Mgmt,
Accounting, Modeling,
Strategy, Operations,
Leadership, Marketing,
Manufacturing

How it was Taught

Lectures
Case Studies
Business Plans

the newsflash?

The best way to
learn entrepreneurship is to

Start Your Own

The best way to
to begin to learn
entrepreneurship is to

Start with
Search

the new

What & How

What We Teach

Customer Discovery & Business Model Design

How We Teach?

Experiential Learning

&

Team Blogs & Presentations

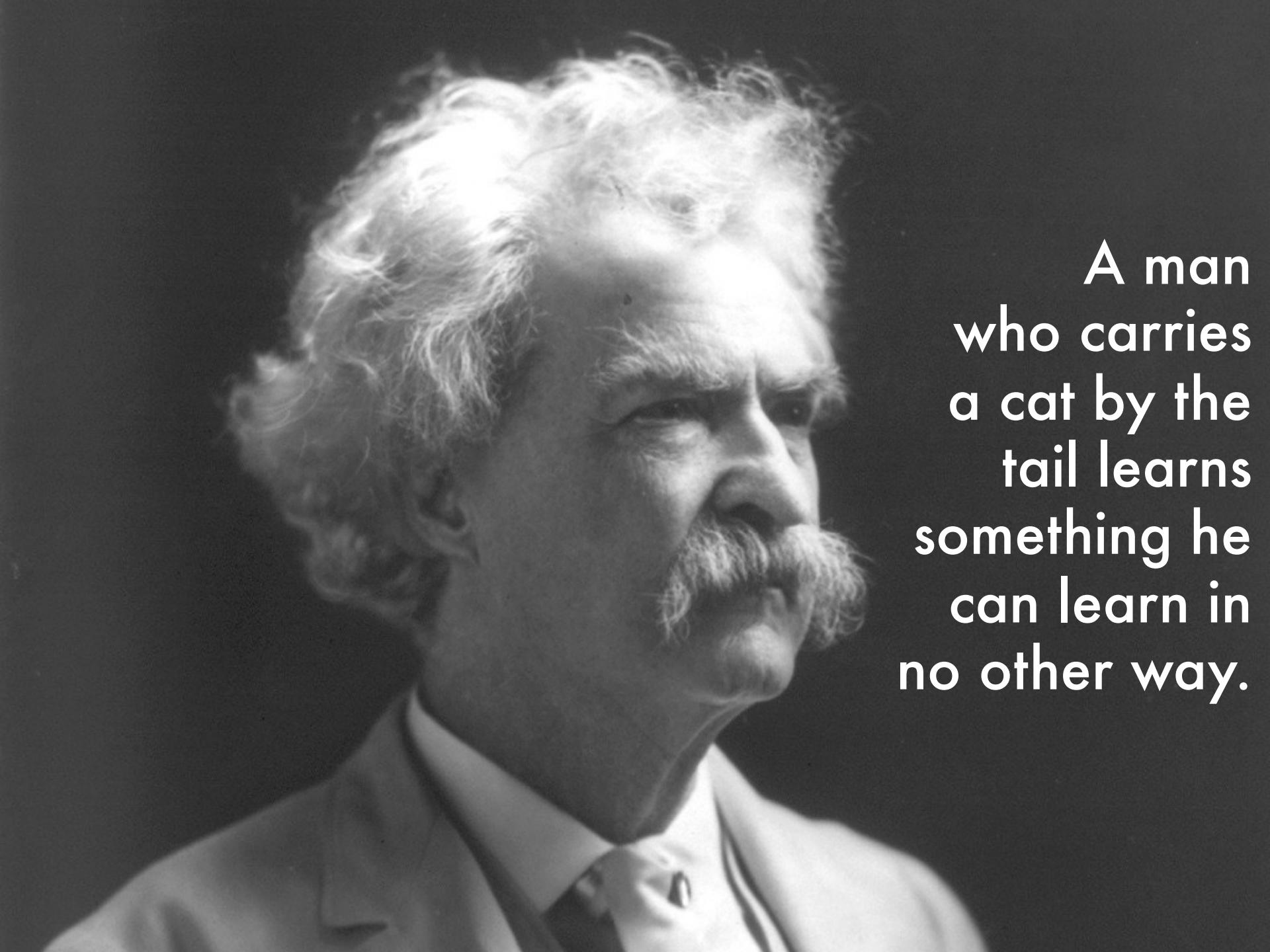
Entrepreneurship is a

**CONTACT
SPORT**

There are
NO FACTS
in the
building!

You must

**GET OUT OF
THE BUILDING**



A man
who carries
a cat by the
tail learns
something he
can learn in
no other way.

CS7CS6: 100% Continuous Assessment

Allocate to Groups & Assign Seed Project

Business model, hypotheses, test with possible customers

Report and get Feedback – Repeat

Innovation Ethics

Present Lessons Learned and Go/No Go

Everything via Blackboard

- Notes and video links
- Resources
- Group and individual coursework submission

The screenshot shows a Blackboard course interface. On the left, a sidebar lists course navigation options like Course Notes, Collaborate, Our Blogs, My Reactions, Groups, Resources, Tools, CS7CS2 Course Organizer, Getting Started, My Facilitator, My Grades, Help, and Announcements. The main content area is titled 'Course Notes' and displays a note titled 'Lecture 1: Intro: Lean Startup and Customer Development'. It includes an attached file 'Intro lean startup.pdf' (29.211 MB) and a list of short videos from Steve Blank's Udacity course. The videos are linked to Dropbox URLs.

Course Notes

Lecture 1: Intro: Lean Startup and Customer Development

Attached Files: [Intro lean startup.pdf](#) (29.211 MB)

Short videos from Steve Blank's Udacity course:

- History of corporation and the teaching of business management and why these didn't teach us how to do start-ups: https://www.dropbox.com/s/6pv881v87pht14w/02-History_Of_The_Corporation.flv?dl=0
- Start-ups search, large companies execute and start-ups are NOT smaller versions of large companies: https://www.dropbox.com/s/pa0396imkhsxo0m/03-Startups_Are_Not_Smaller_Versions_Of_Large_Companies.flv?dl=0
- We now know writing business plans are the wrong way to manage start-ups, instead we use the business model canvas to capture our guess about the business and to drive turning that into facts by talking to customers: <https://www.dropbox.com/s/pde4d3jjqd56ib9/04-Strategy.flv?dl=0>
- We use to try and run start-up by doing project development, plan marketing and sales, but we now know this is the wrong way to do it: <https://www.dropbox.com/s/36puaw7yvo8arm1/05-Process.flv?dl=0>
- Traditional waterfall development assumes you know the customer's problem/need, BUT in startups we don't know this, so many startups wasted time building things that customers didn't want: https://www.dropbox.com/s/0sa99t9nr2v1fpn/06-Waterfall_Development.flv?dl=0
- Startups fail most of the time because they built something that no customer wanted. Instead we now do Customer Discovery to search for that the customer wants: https://www.dropbox.com/s/u61xw3au9rx73iq/07-Customer_vs_Product_Development.flv?dl=0
- Startups don't need to copy the formal functional specialised role of larger companies, instead the founders must run the customer development team: <https://www.dropbox.com/s/kocuweo4m85eghu/10-Organization.flv?dl=0>
- So instead of teaching about the execution of product ideas, this entrepreneurial educating course focusses on the search skills needed for startup: https://www.dropbox.com/s/k8id6m26a2r0i5z/11-Entrepreneurial_Education.flv?dl=0

**We seed each group with a Technology
based on past MSc Dissertations**

**'Your' technology is one of the many critical pieces
necessary to build a company.
It is part of the "Value Proposition"**

What About My Technology?

But Remember

**Customers don't care about your technology
They are trying to *solve a problem or satisfy a need***



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Business Modelling for Startup: The Business Model Canvas

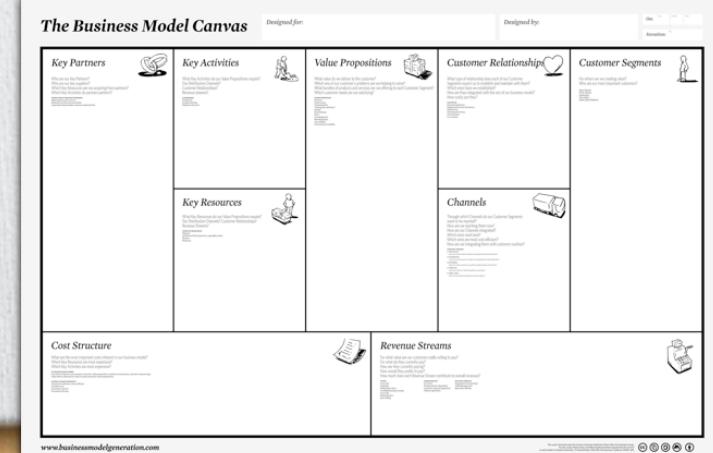
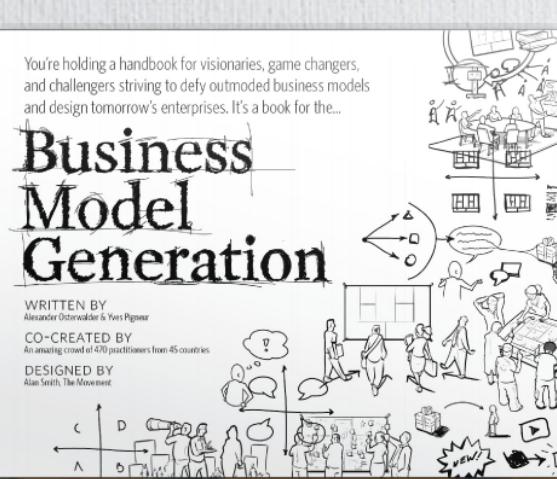
How to Build A Startup

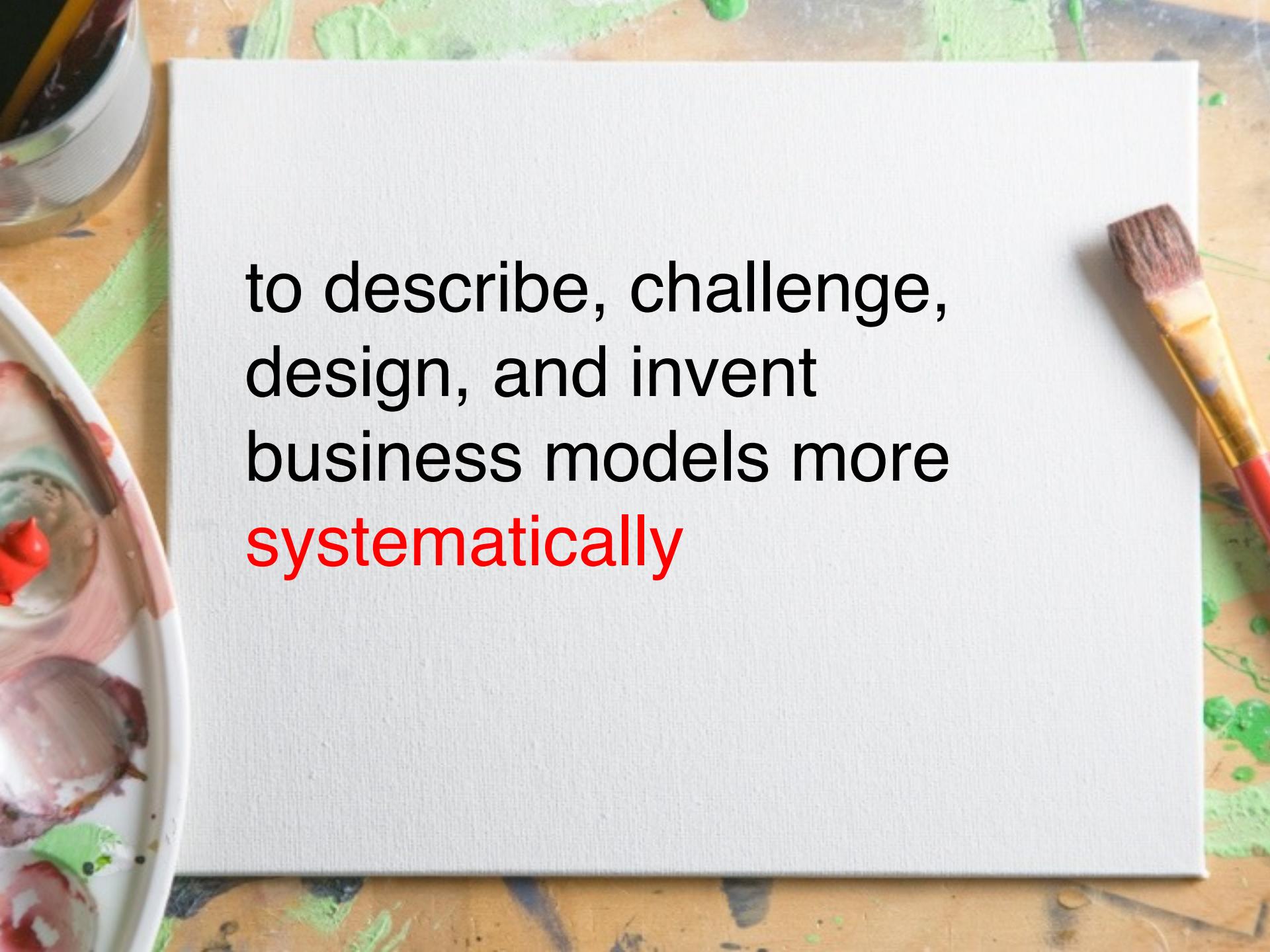
**Technology Idea
Business Model
Size Opportunity
Customer Development**



A business model describes **all**
the parts of the company
necessary to make money

Business Model Canvas

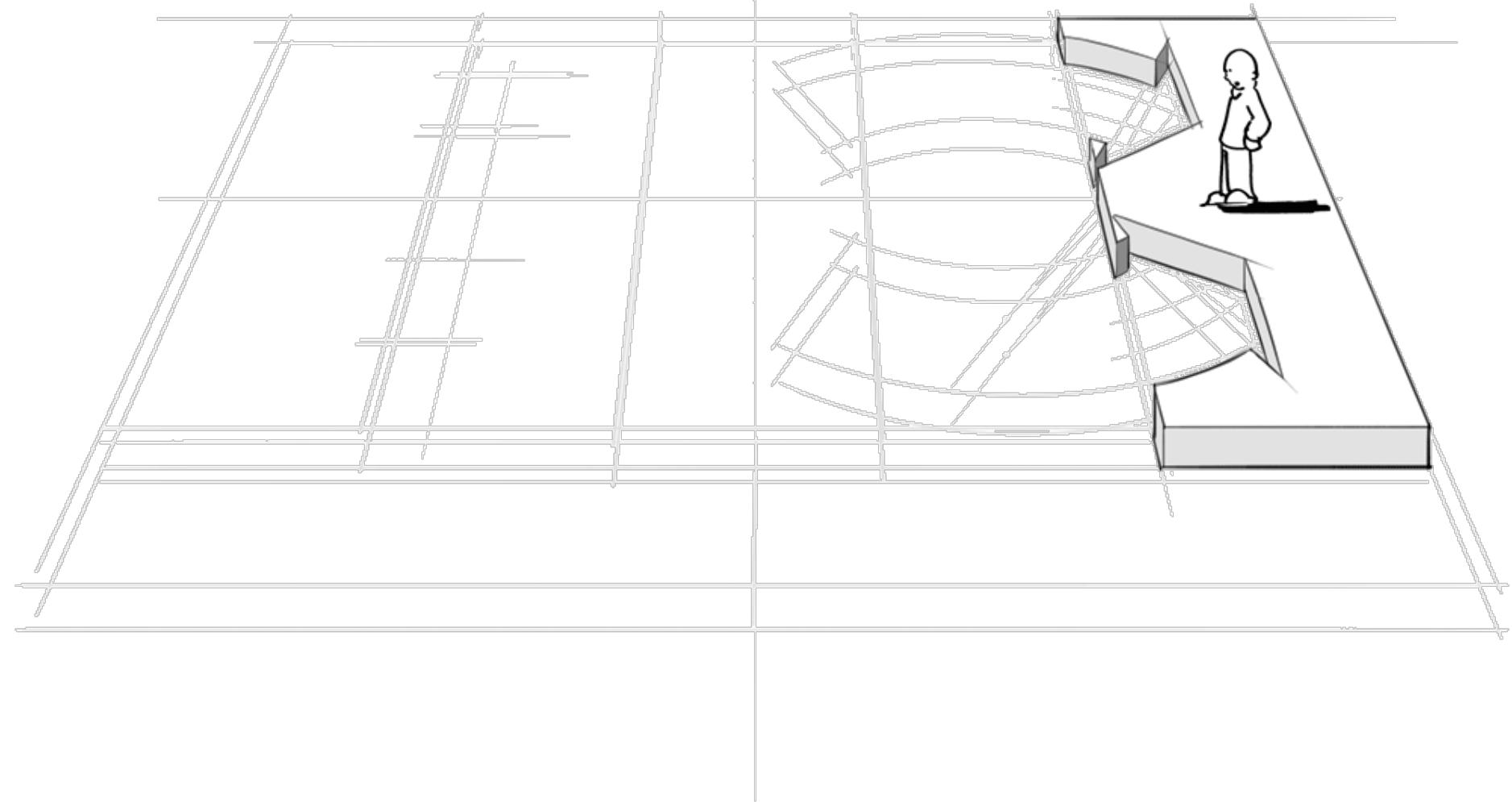




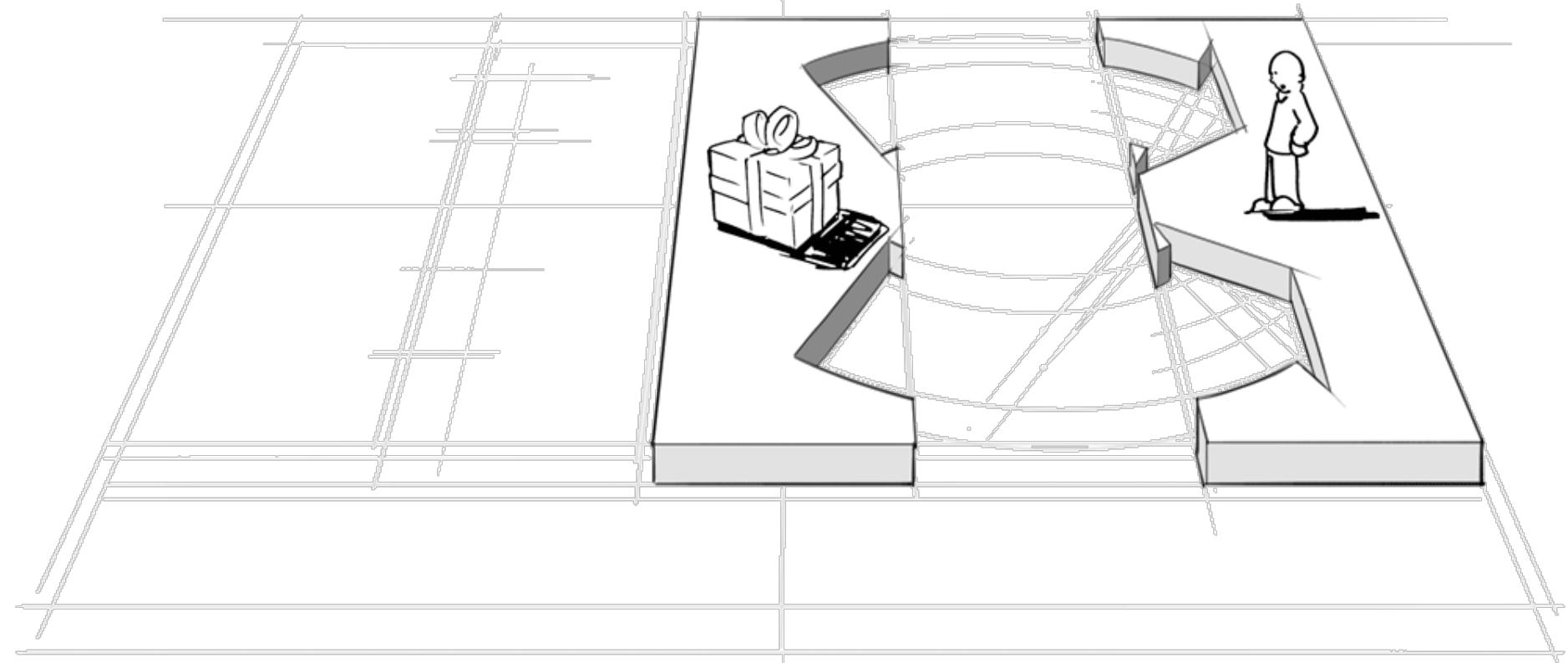
to describe, challenge,
design, and invent
business models more
systematically

9 building blocks

CUSTOMER SEGMENTS

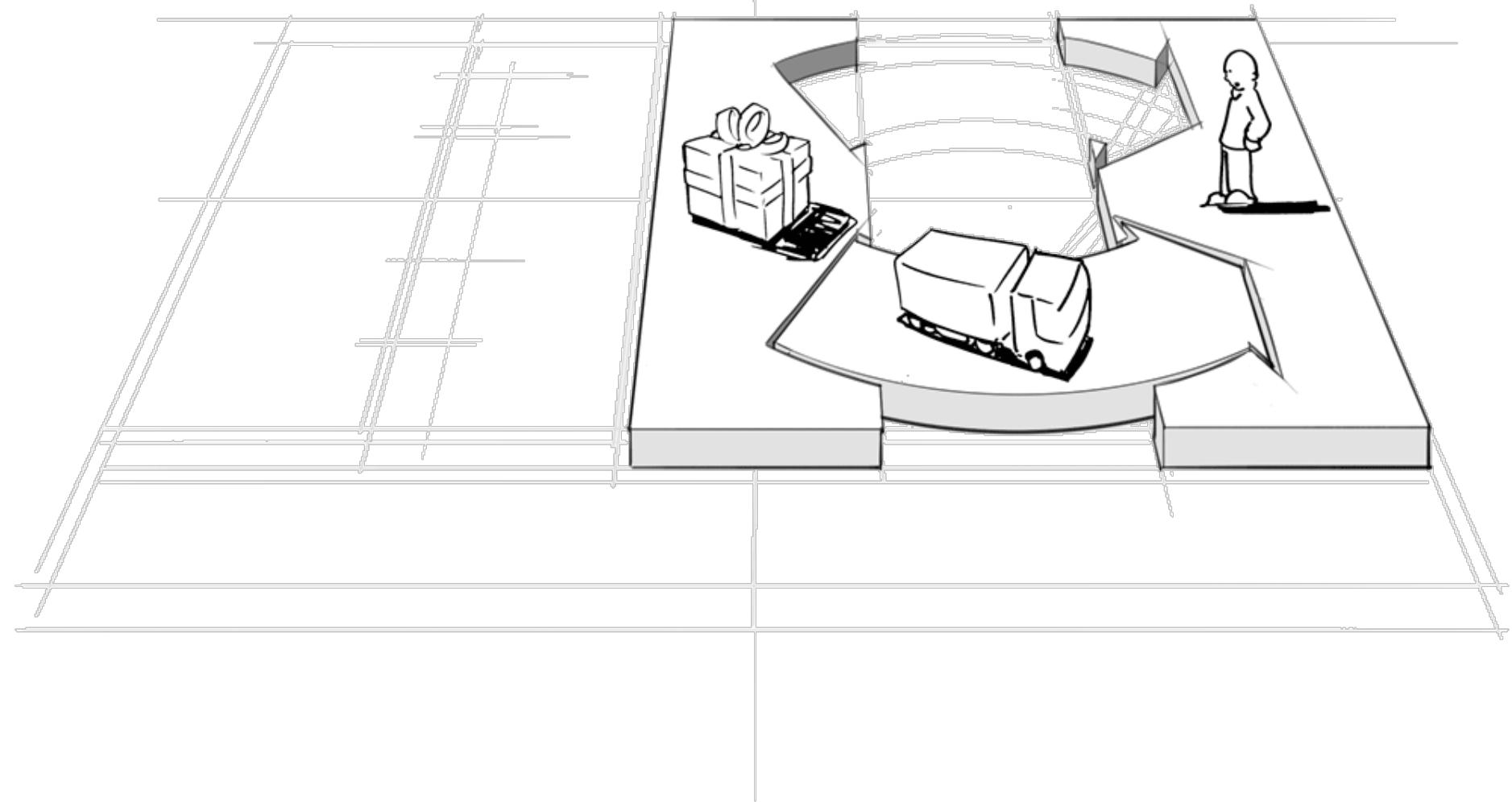


VALUE PROPOSITIONS

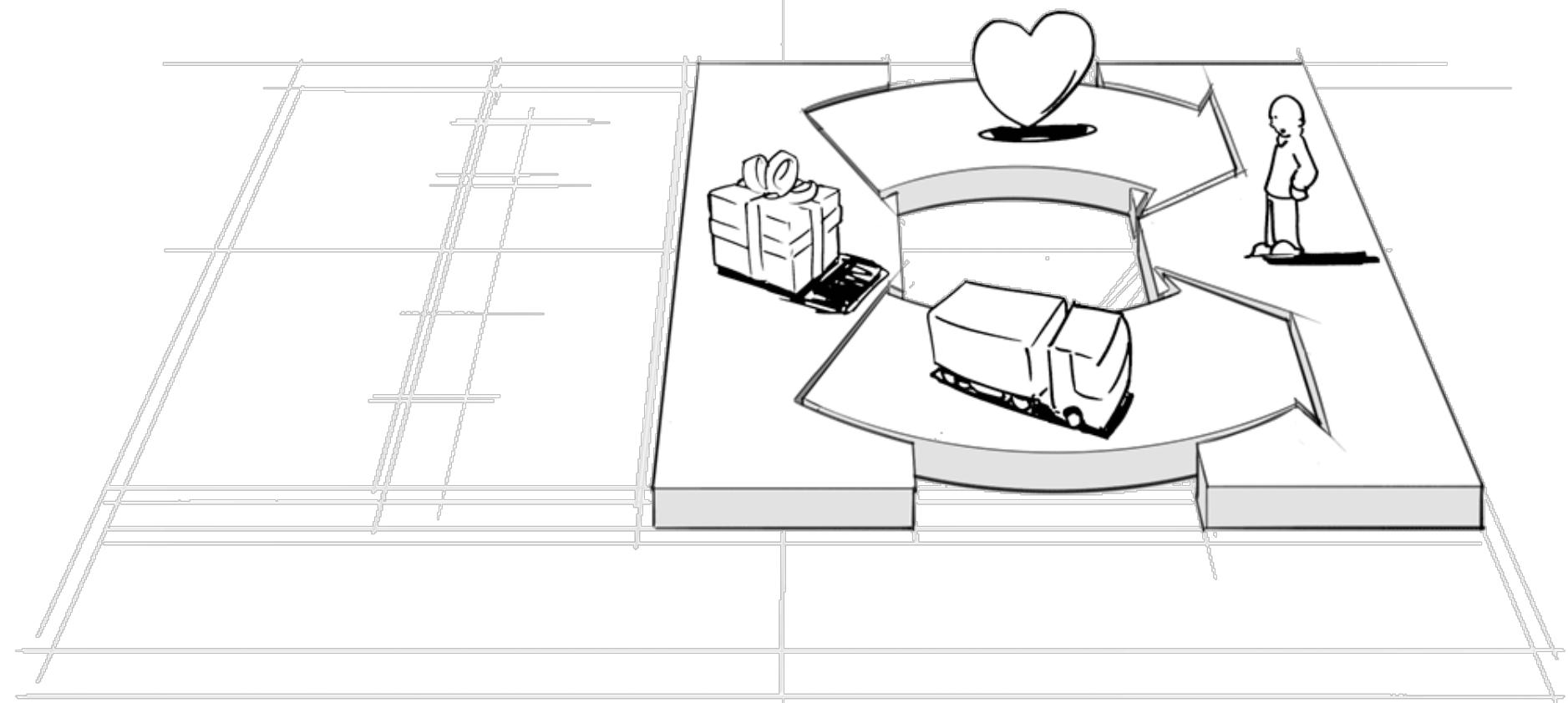


relationship between VPs and CSs is
Product Market Fit

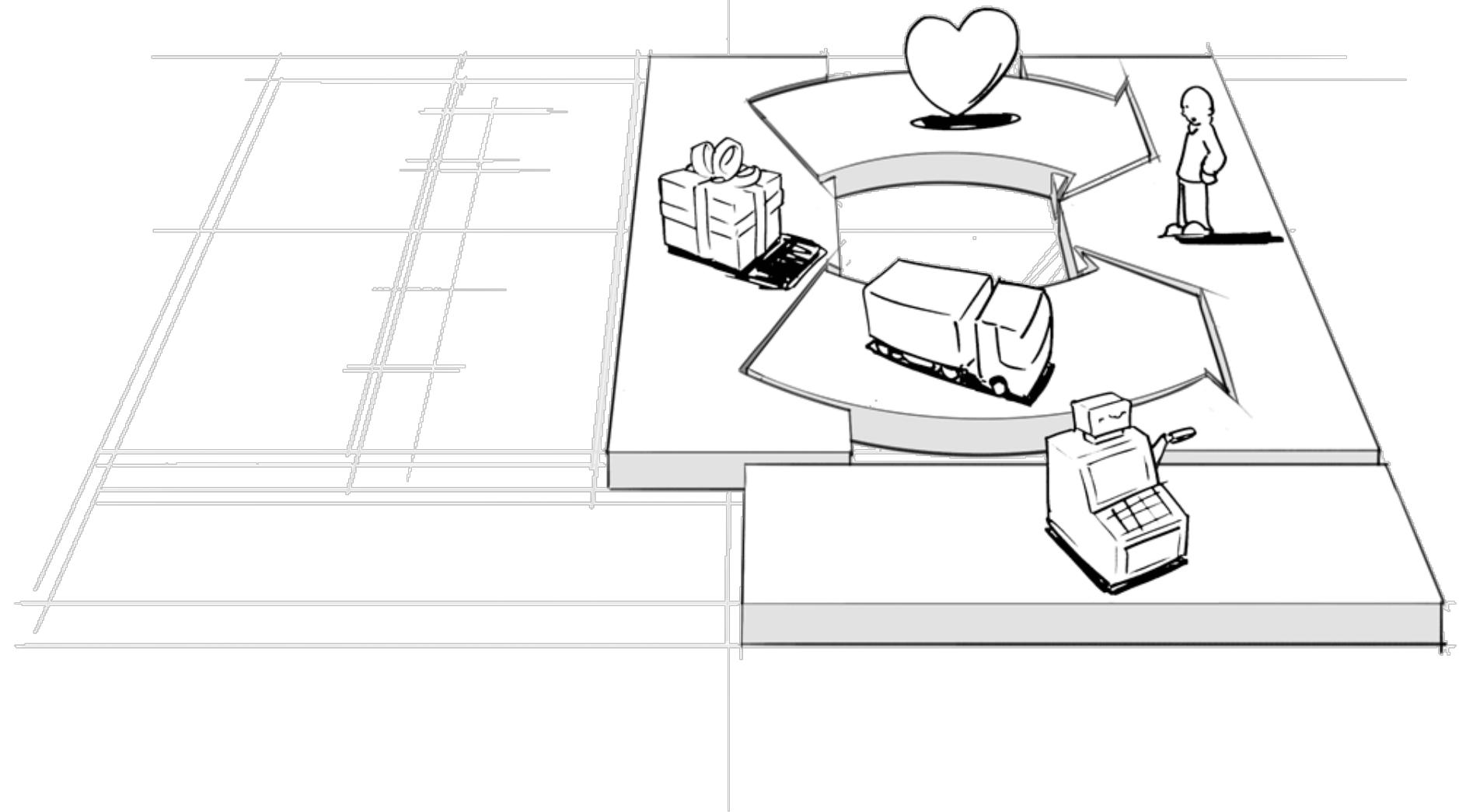
CHANNELS



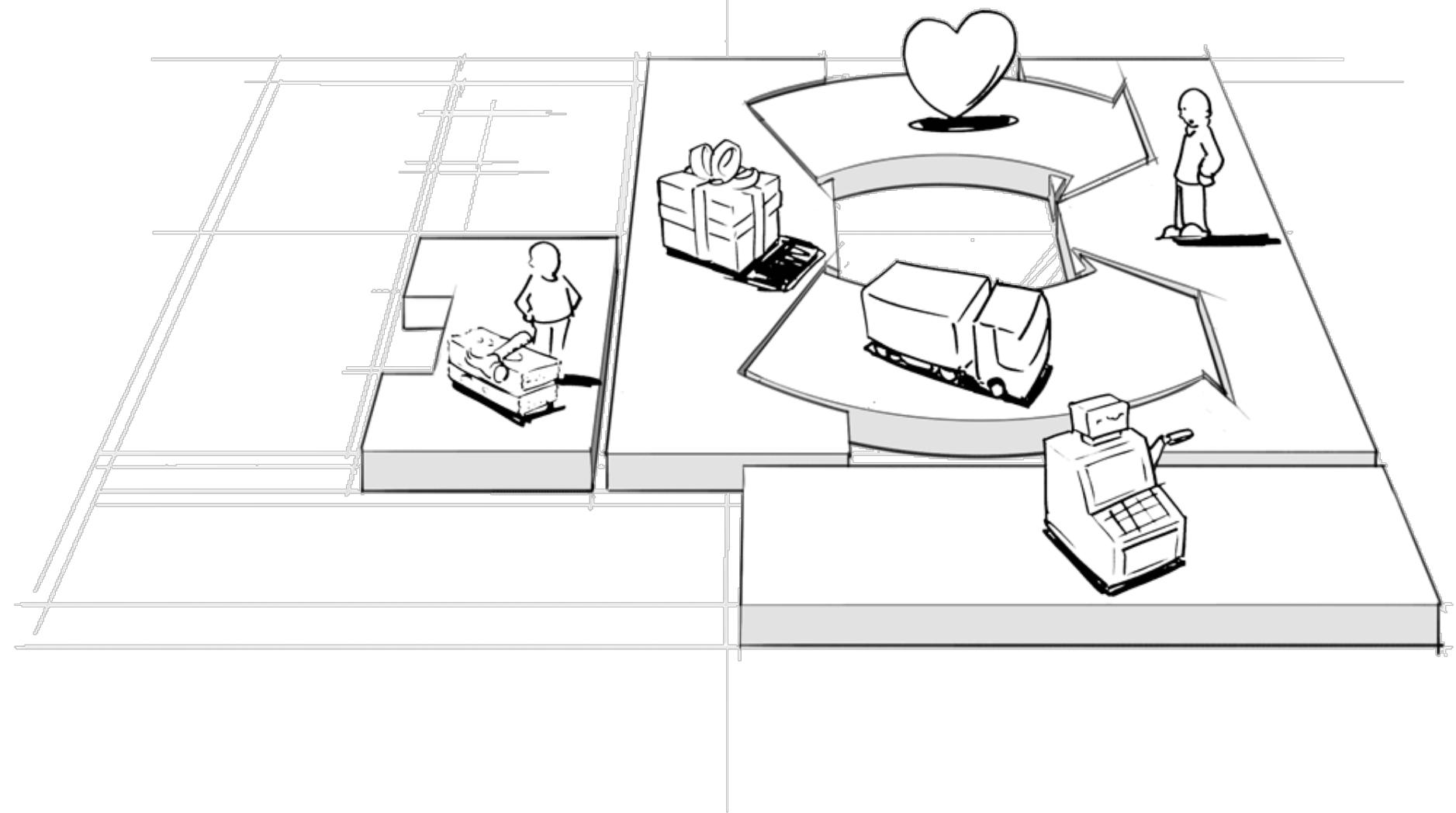
CUSTOMER RELATIONSHIPS



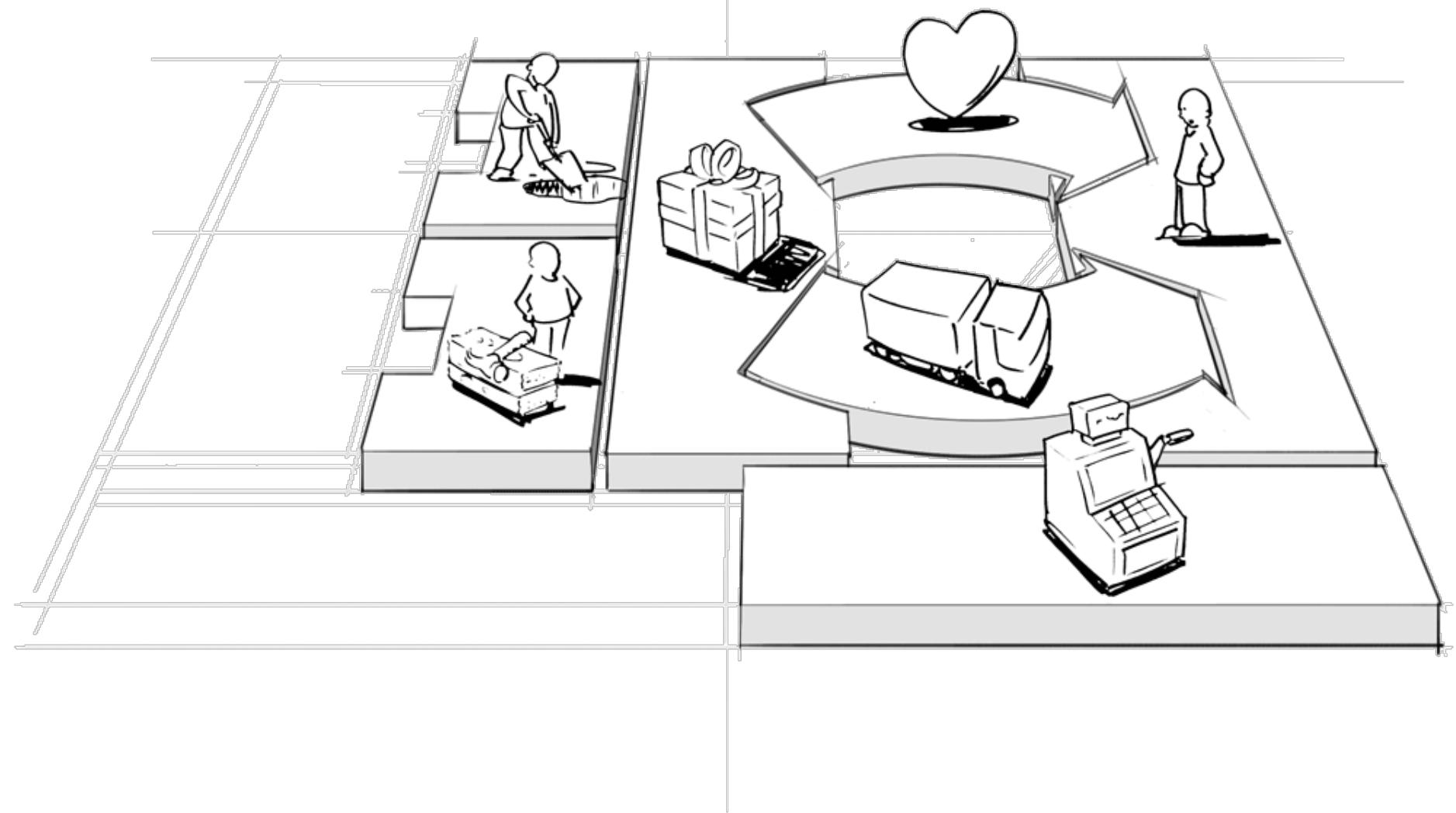
REVENUE STREAMS



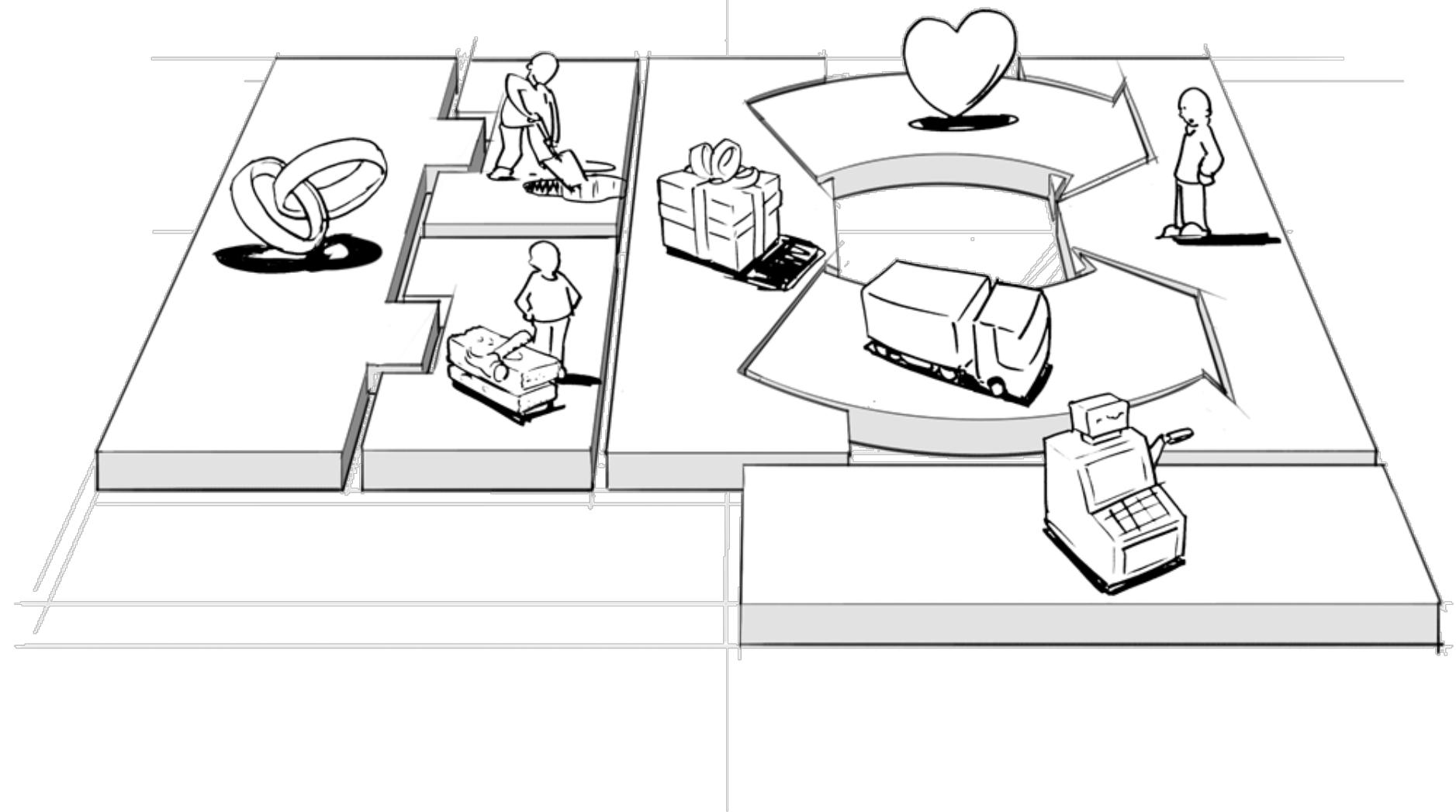
KEY RESOURCES



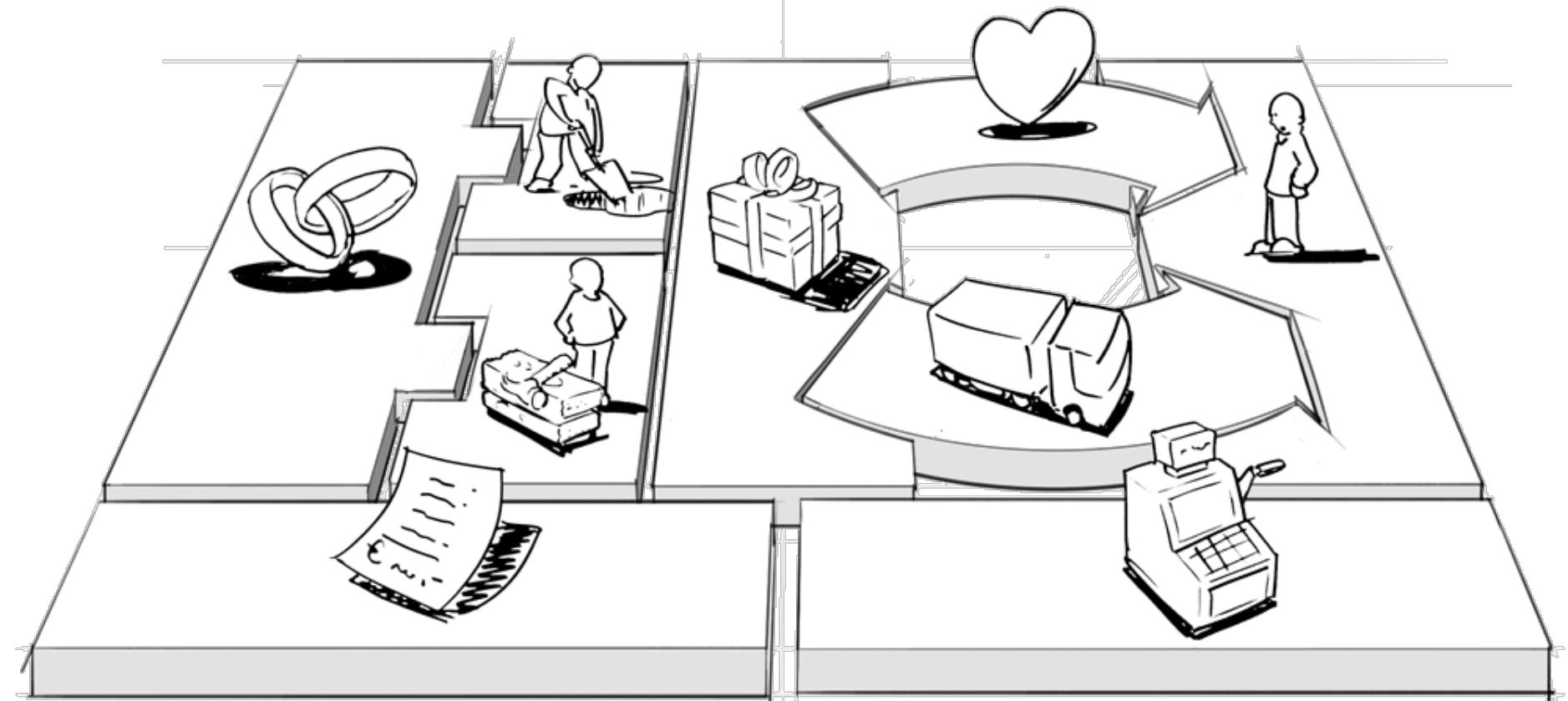
KEY ACTIVITIES



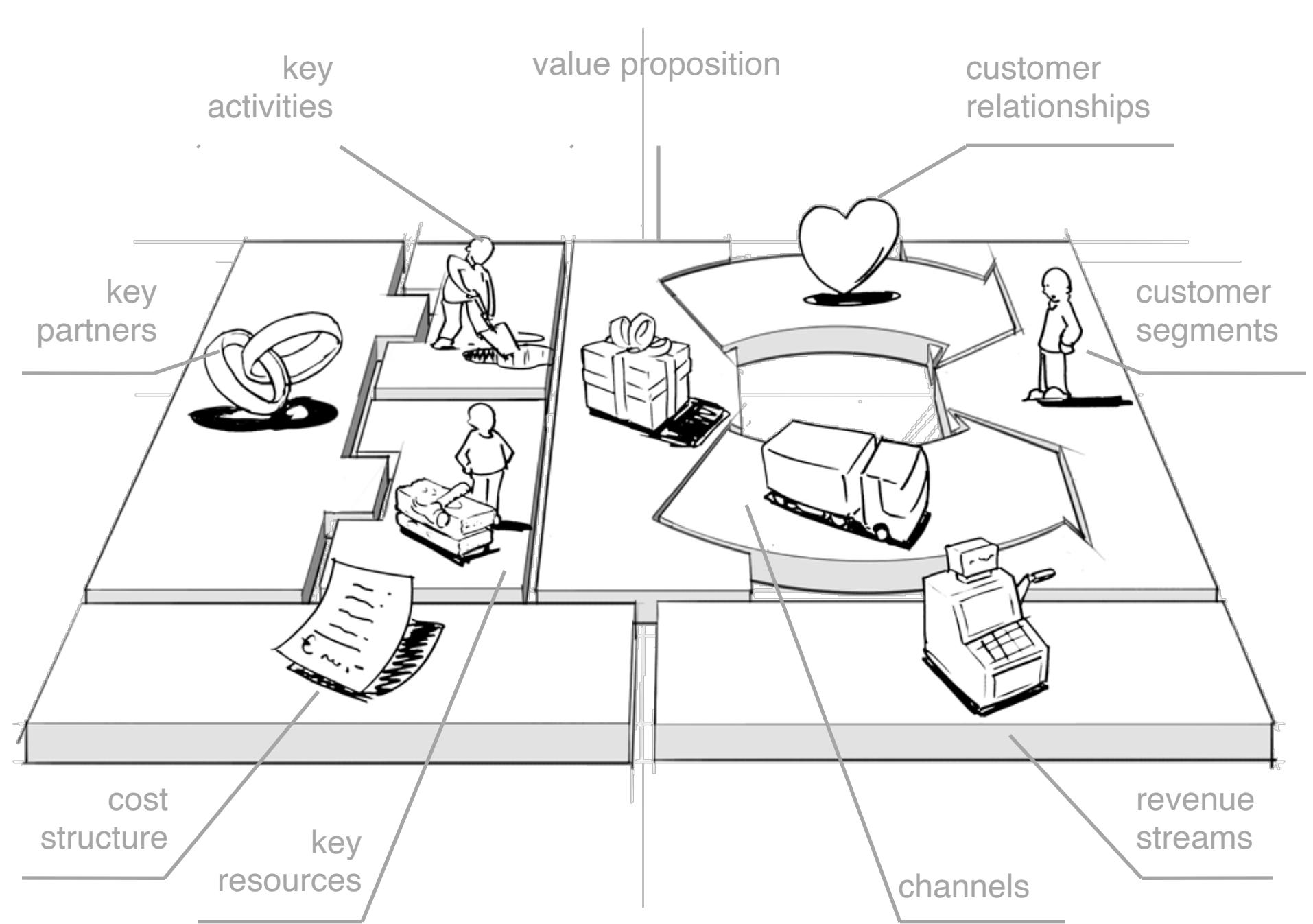
KEY PARTNERS

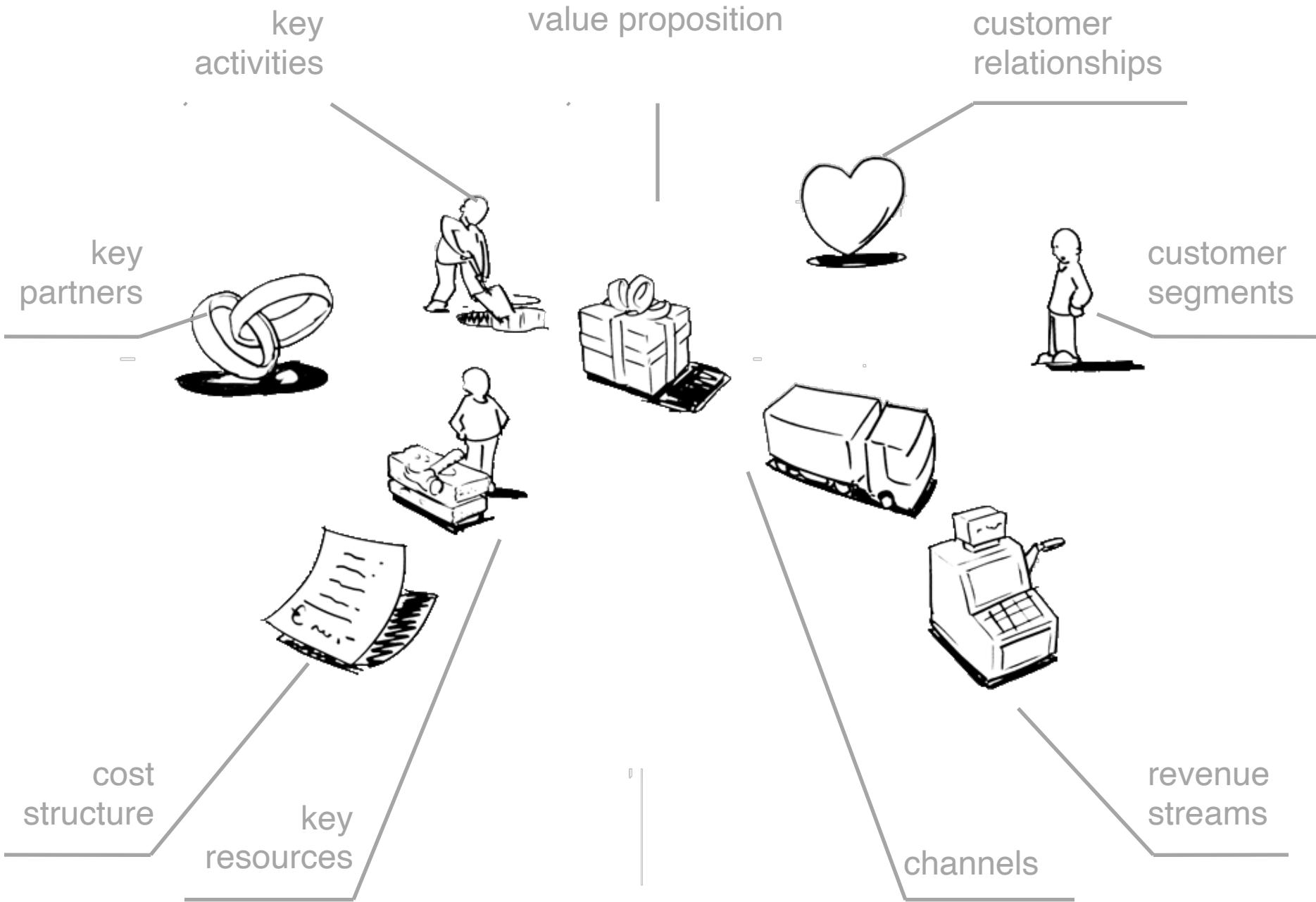


COST STRUCTURE

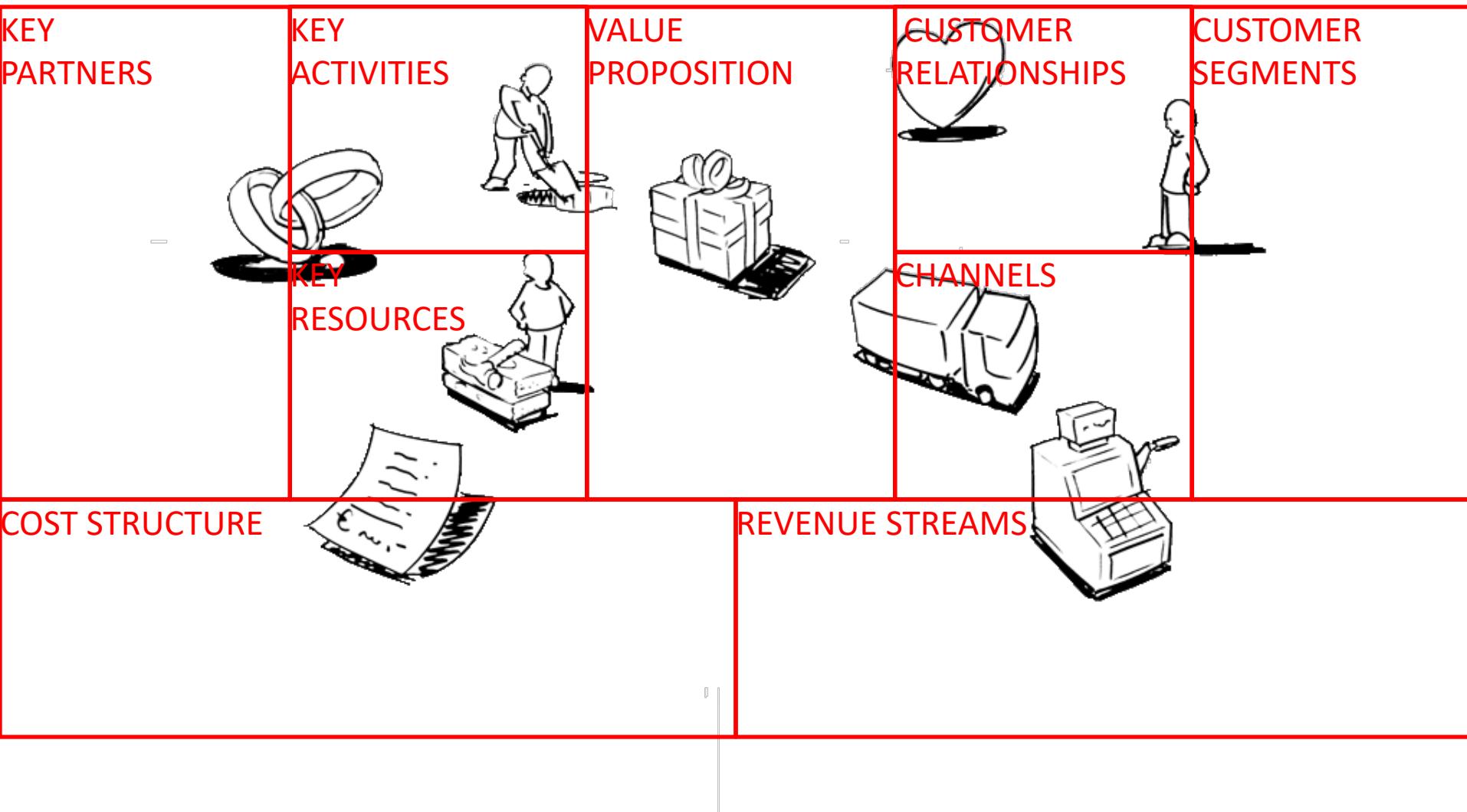


for success Cost < Revenue

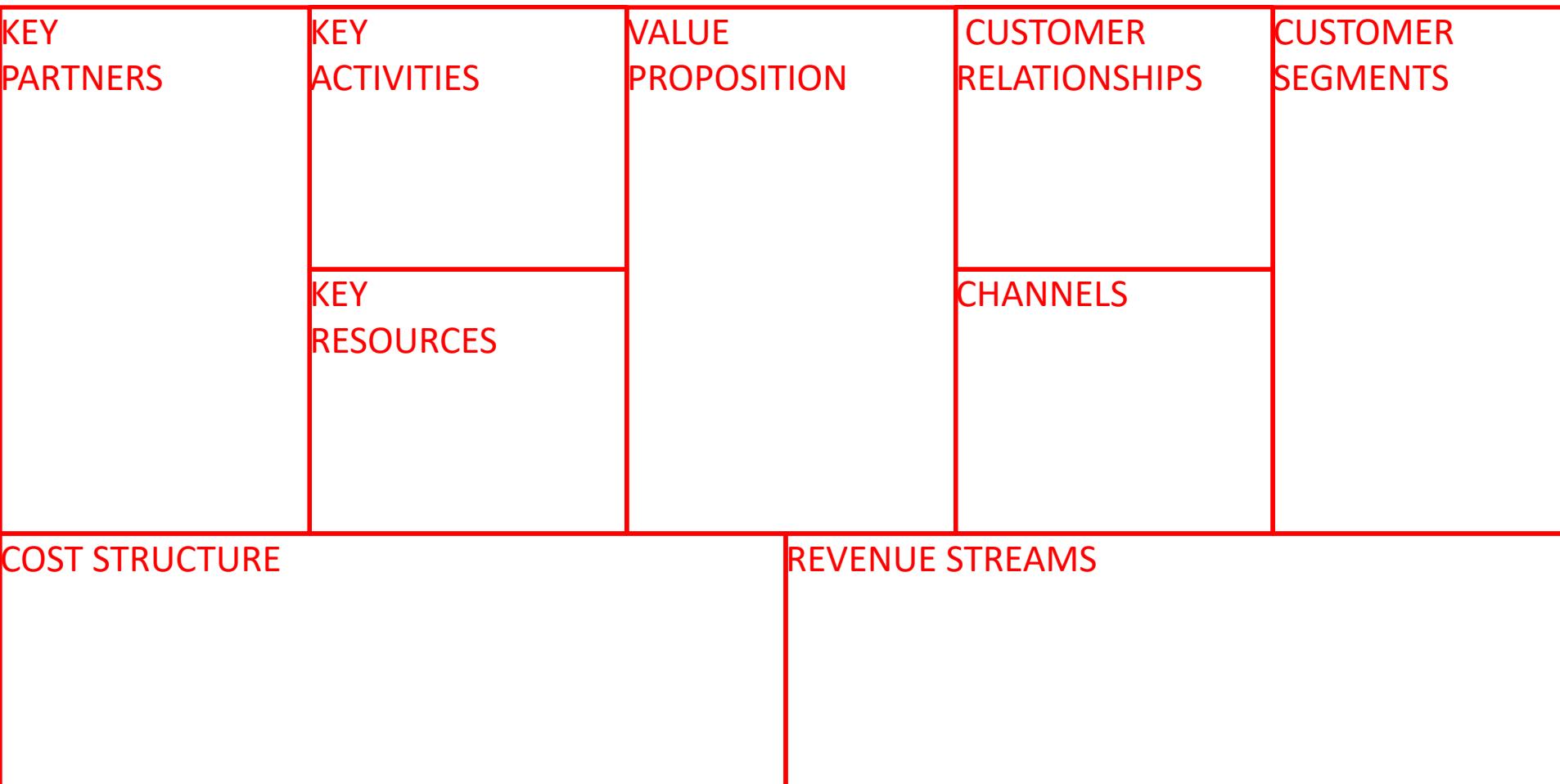




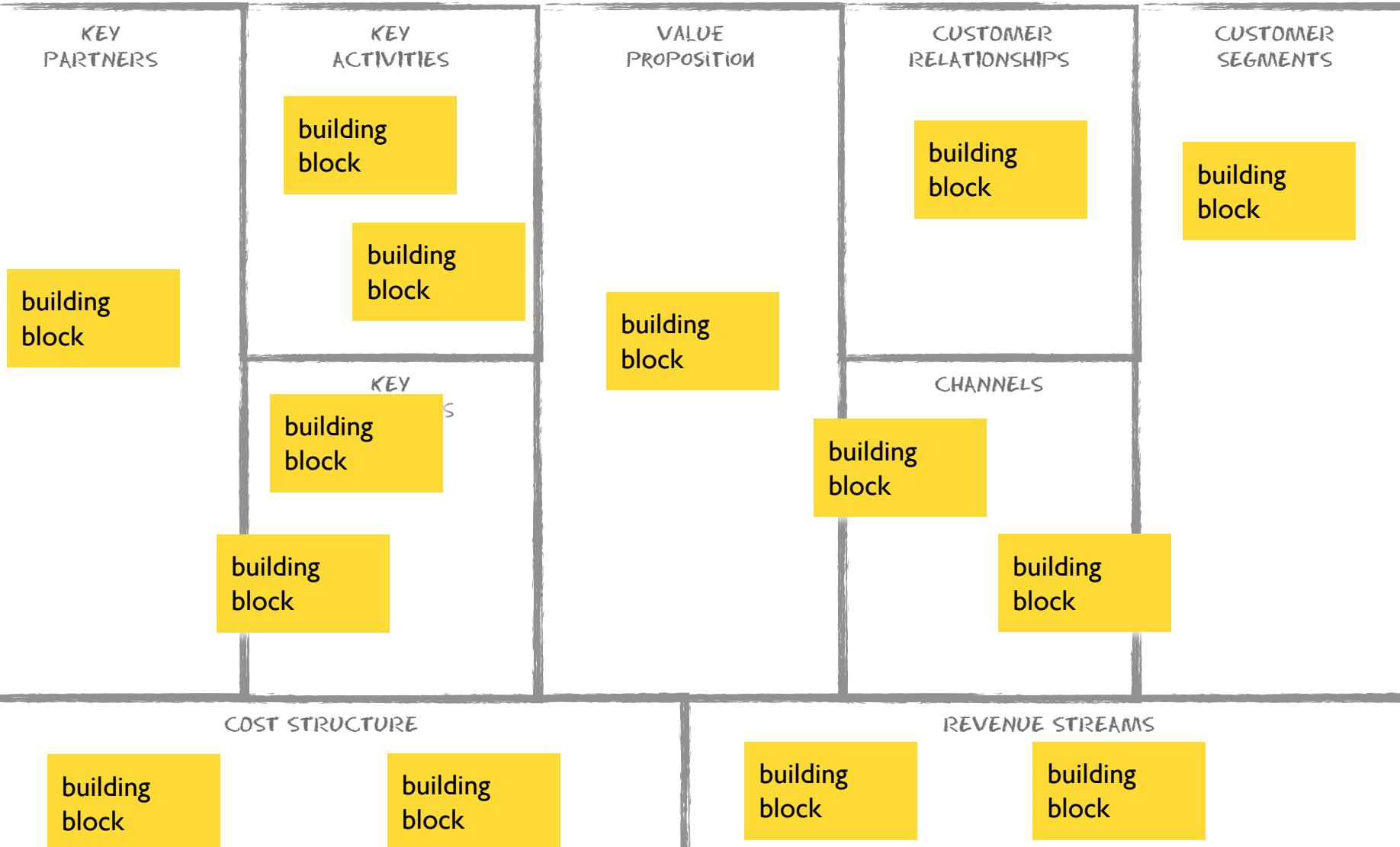
CANVAS OVERLAY



CANVAS OVERLAY



Business Model Canvas



But,
Realize They're Hypotheses
i.e. They're Guesses

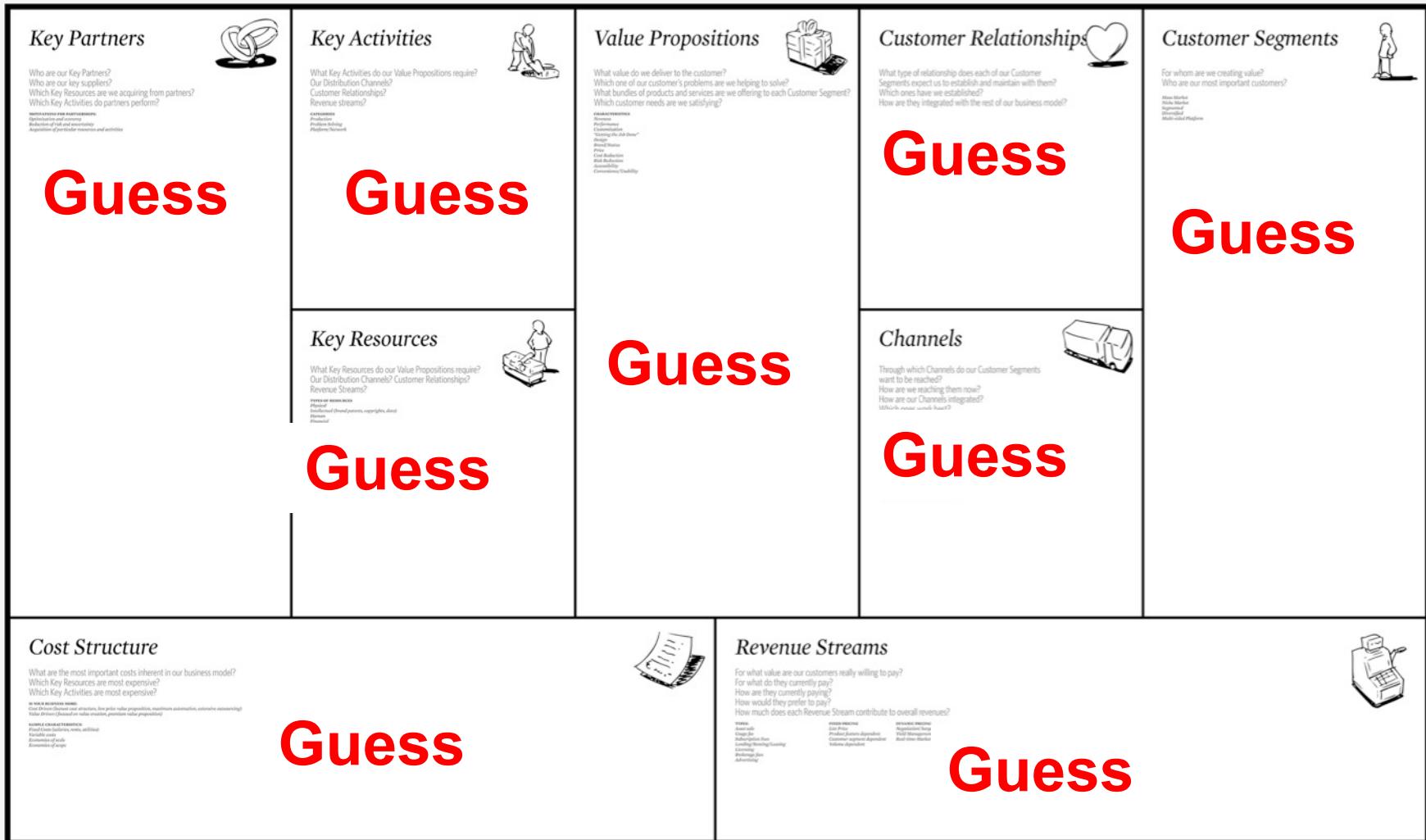
9 Guesses

The Business Model Canvas

Designed for:

Designed by:

On: *Iteration:*



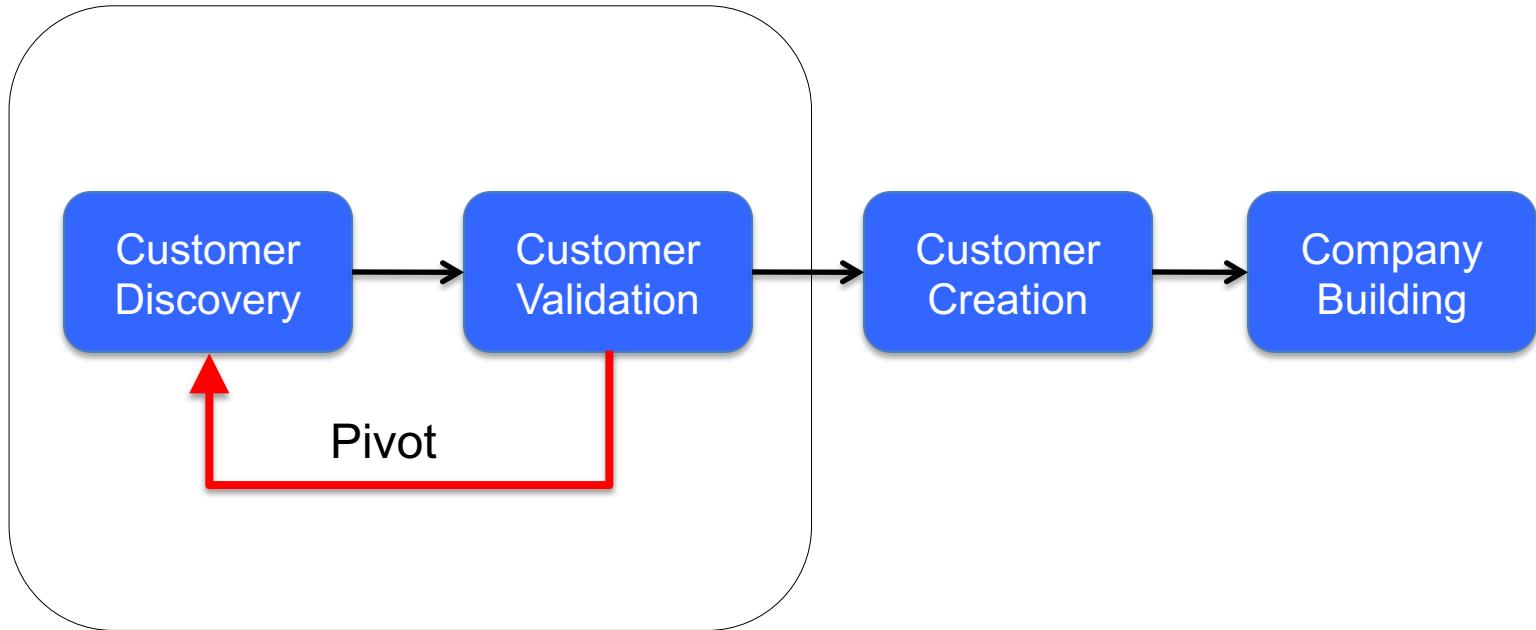
Customer Development

The founders (you)

**Get Out of the Building and Search for the
Business Model**

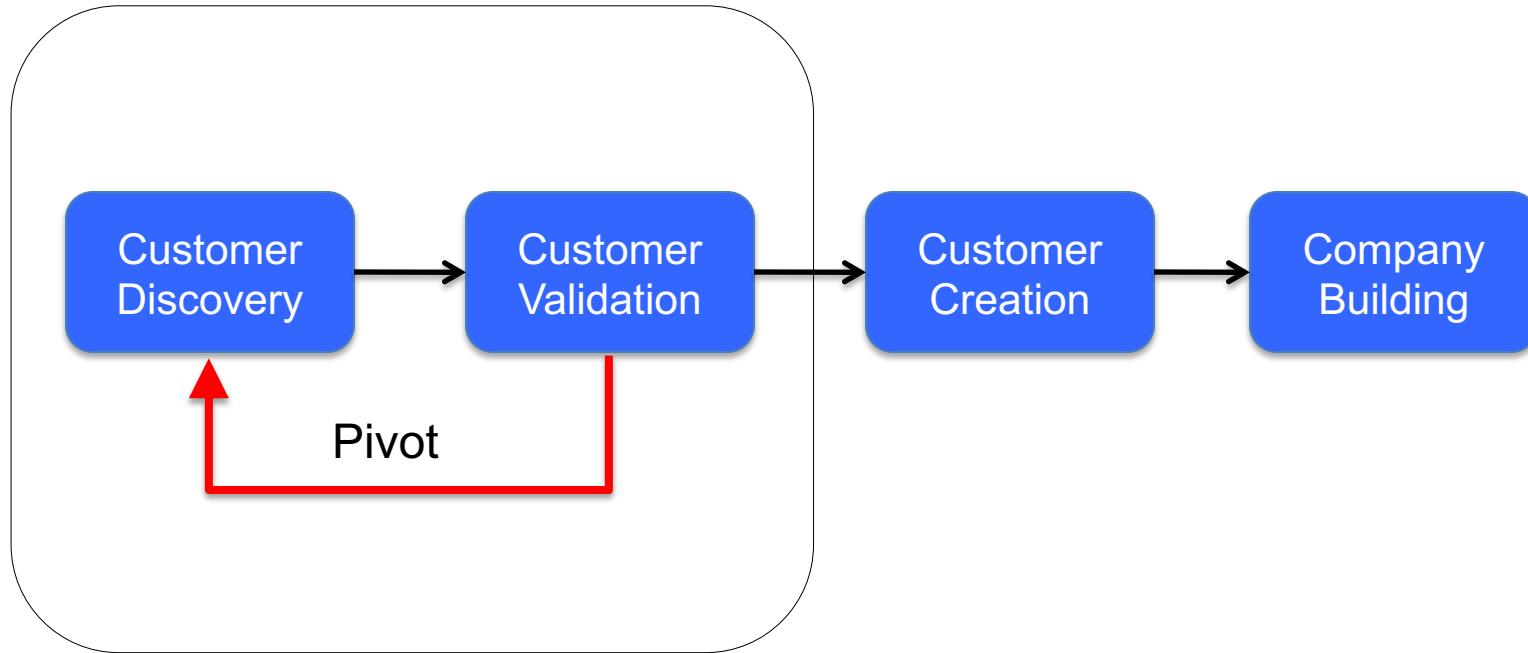
**i.e. Test those Guesses in the Real World
(not so different to testing a hypothesis in a
Research Method)**

The Customer Development Process



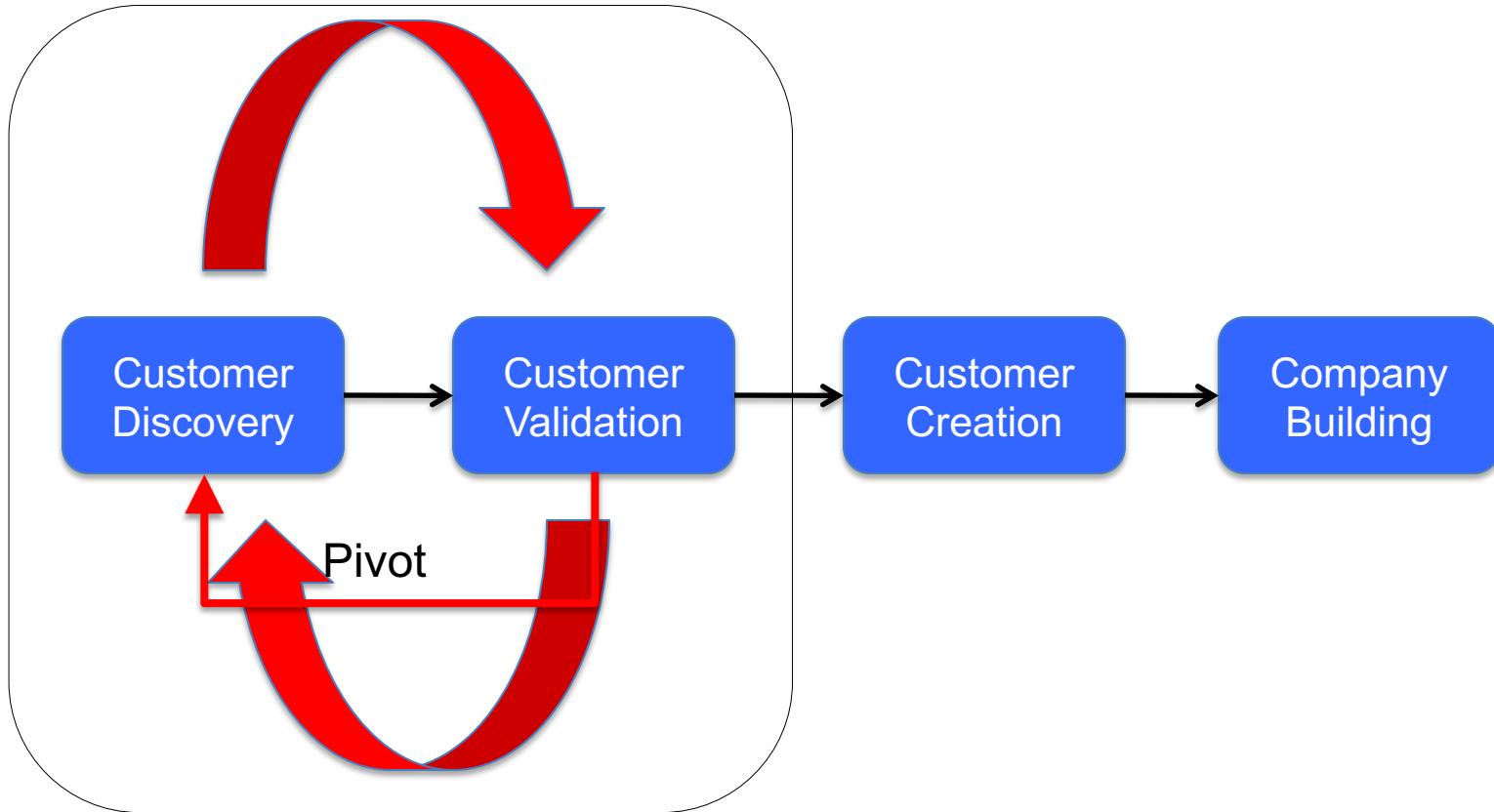
A Pivot is the **change** of one or
more **Business Model** Canvas
Components

The Pivot



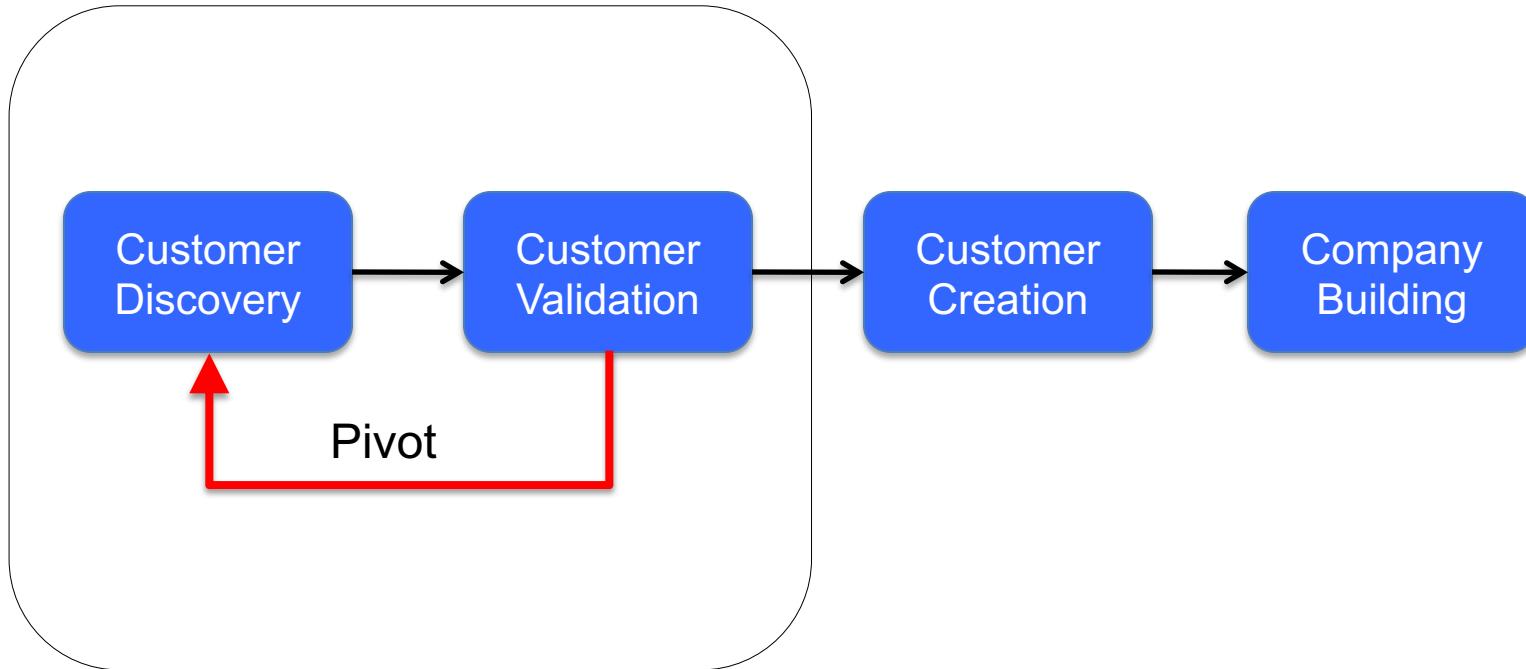
- The heart of Customer Development
- Iteration without crisis
- Fast, agile and opportunistic

Pivot Cycle Time Matters



- Speed of cycle minimizes cash needs
- Minimum feature set speeds up cycle time
- Rapid customer feedback drives feature set

The Minimum Viable Product (MVP)



- Smallest feature set that gets you the most ...
 - orders, learning, feedback, failure...

Initial Idea

Breast cancer

Leading cause of cancer in women
190,000 diagnosis every year US
41,000 deaths every year US
Increasing diagnosis rates

Mammography

15%-25% false negatives rate
25% false positives rate
Requires X-ray radiation
Low resolution

MammOptics

Novel technology based on RF-modulated optical spectroscopy

- Earlier detection
- Non-radiative
- Non-invasive



Business Model Canvas 1

<i>Key Partners</i>		<i>Key Activities</i>		<i>Value Proposition</i>		<i>Customer Relationships</i>		<i>Customer Segments</i>	
Hospitals Leading doctors 3 rd party manufacturers Distributors		Product Development IP Clinical trials FDA		Radiation-free Earlier detection Non invasive		Strong clinical data Training Maintenance		Pioneering Doctors Hospitals	
		<i>Key Resources</i>				<i>Channels</i>			
		IP Leading doctors Technical Expertise				Direct Sales to hospitals			
<i>Cost Structure</i>	Product Development Clinical trials Operating Costs				<i>Revenue Streams</i>	Capital Equipment Sales and disposable item			

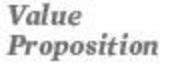
Business Model Canvas 2

<i>Key Partners</i>		<i>Key Activities</i>		<i>Value Proposition</i>		<i>Customer Relationships</i>		<i>Customer Segments</i>	
Hospitals Leading doctors 3 rd party manufacturers Distributors Research Hospitals		Product Development IP Clinical trials FDA		Radiation-free Earlier detection Non invasive		Strong clinical data Training Maintenance		Pioneering Doctors Hospitals	
		<i>Key Resources</i>				<i>Channels</i>			
		IP Leading doctors Technical Expertise				Direct Sales to hospitals			
<i>Cost Structure</i>	Product Development Clinical trials Operating Costs		<i>Revenue Streams</i>		Capital Equipment Sales and disposable item				

Business Model Canvas 3

<i>Key Partners</i>		<i>Key Activities</i>		<i>Value Proposition</i>		<i>Customer Relationships</i>		<i>Customer Segments</i>	
Hospitals (Capital Spending Committee) Leading doctors 3 rd party manufacturers Distributors Research Hospitals		Product Development IP Clinical trials FDA		Doctors: Earlier detection Price Accuracy Patients: Radiation Free Non-Invasive		Strong clinical data Training Maintenance		Pioneering Doctors Hospitals	
		<i>Key Resources</i>				<i>Channels</i>			
<i>Cost Structure</i>	Product Development Clinical trials Operating Costs			<i>Revenue Streams</i>		Direct Sales to hospitals		Capital Equipment Sales and disposable item	

Business Model Canvas 4

<i>Key Partners</i>		<i>Key Activities</i>		<i>Value Proposition</i>		<i>Customer Relationships</i>		<i>Customer Segments</i>	
Hospitals (Capital Spending Committee) Leading doctors 3 rd party manufacturers Distributors Research Hospitals Breast Cancer Foundations		Product Development IP Clinical trials FDA		Doctors: Earlier detection Price Accuracy Patients: Radiation Free Non-Invasive		Strong clinical data Training Maintenance		Pioneering Doctors Hospitals OB/GYNs PCPs	
		Key Resources  IP Leading doctors Technical Expertise				Channels  Direct Sales to hospitals			
<i>Cost Structure</i>	Product Development Clinical trials Operating Costs				<i>Revenue Streams</i>	 Capital Equipment Sales and disposable item			

Business Model Canvas 5

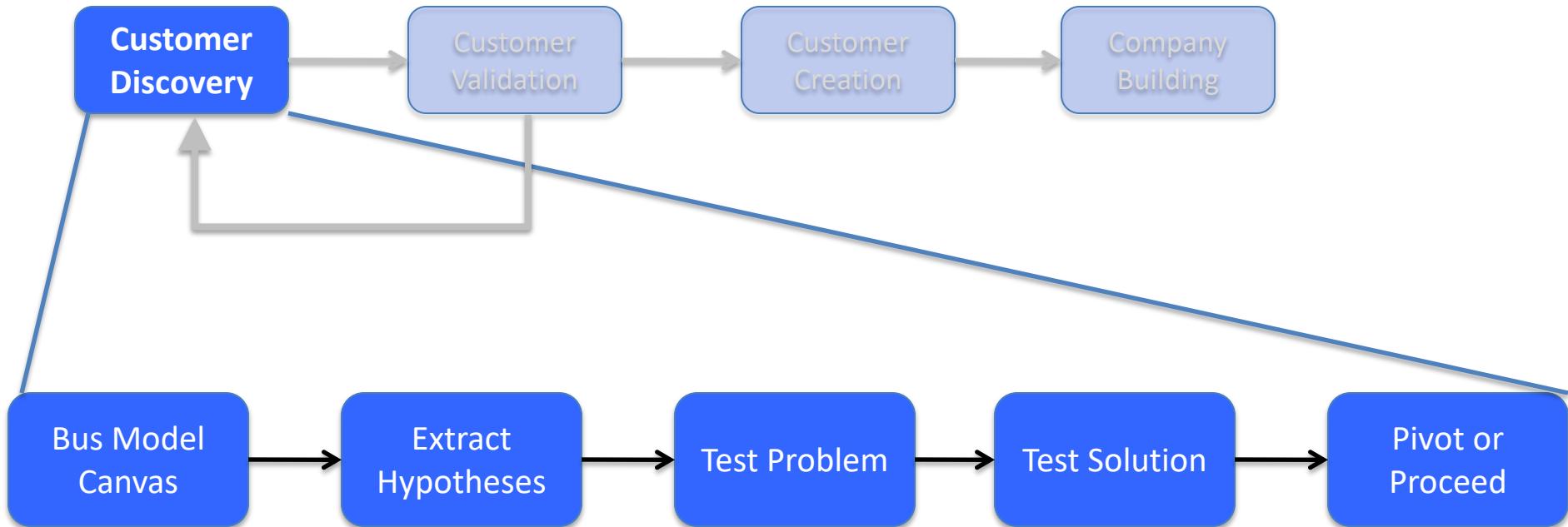
<i>Key Partners</i>		<i>Key Activities</i>		<i>Value Proposition</i>		<i>Customer Relationships</i>		<i>Customer Segments</i>	
Leading doctors Key Opinion Leaders 3 rd party manufacturers Distributors Breast Cancer Foundations ACOG ACS		Product Development IP Clinical trials FDA Reimbursement Publishing		Doctors: Earlier detection Price Accuracy Patients: Radiation Free Non-Invasive		Strong clinical data Training Maintenance Conferences CME courses		OB/GYNs PCPs	
		Key Resources  IP Leading doctors Technical Expertise				Channels  Direct Sales to hospitals Distributor			
<i>Cost Structure</i>		Product Development Clinical trials Operating Costs Marketing Costs		<i>Revenue Streams</i>		Capital Equipment Sales and disposable item			

Business Model Canvas 6

<i>Key Partners</i>		<i>Key Activities</i>		<i>Value Proposition</i>		<i>Customer Relationships</i>		<i>Customer Segments</i>	
KOLs 3 rd party manufacturers Distributors Breast Cancer Foundations ACOG ACS		Product Development IP Clinical trials FDA Reimbursement Publishing		Doctors: Earlier detection Price Accuracy Immediate Results		Strong clinical data Training Maintenance Conferences CME courses		OB/GYNs PCPs	
		<i>Key Resources</i>		Patients: Radiation Free Non-Invasive		<i>Channels</i>		Direct Sales to hospitals Distributor	
<i>Cost Structure</i>	Product Development Clinical trials Operating Costs Marketing Costs				<i>Revenue Streams</i>	Capital Equipment Sales and disposable item Per use fees			

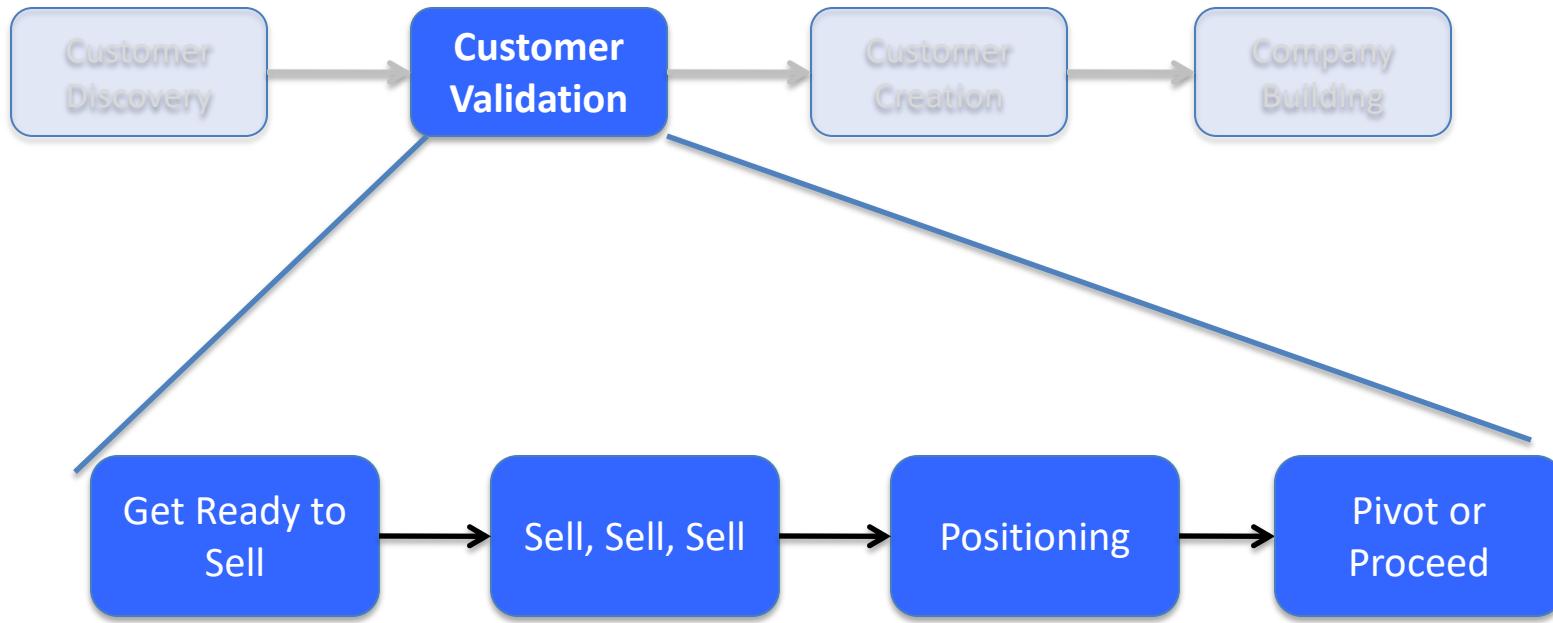
The Customer Development Process

Customer Discovery



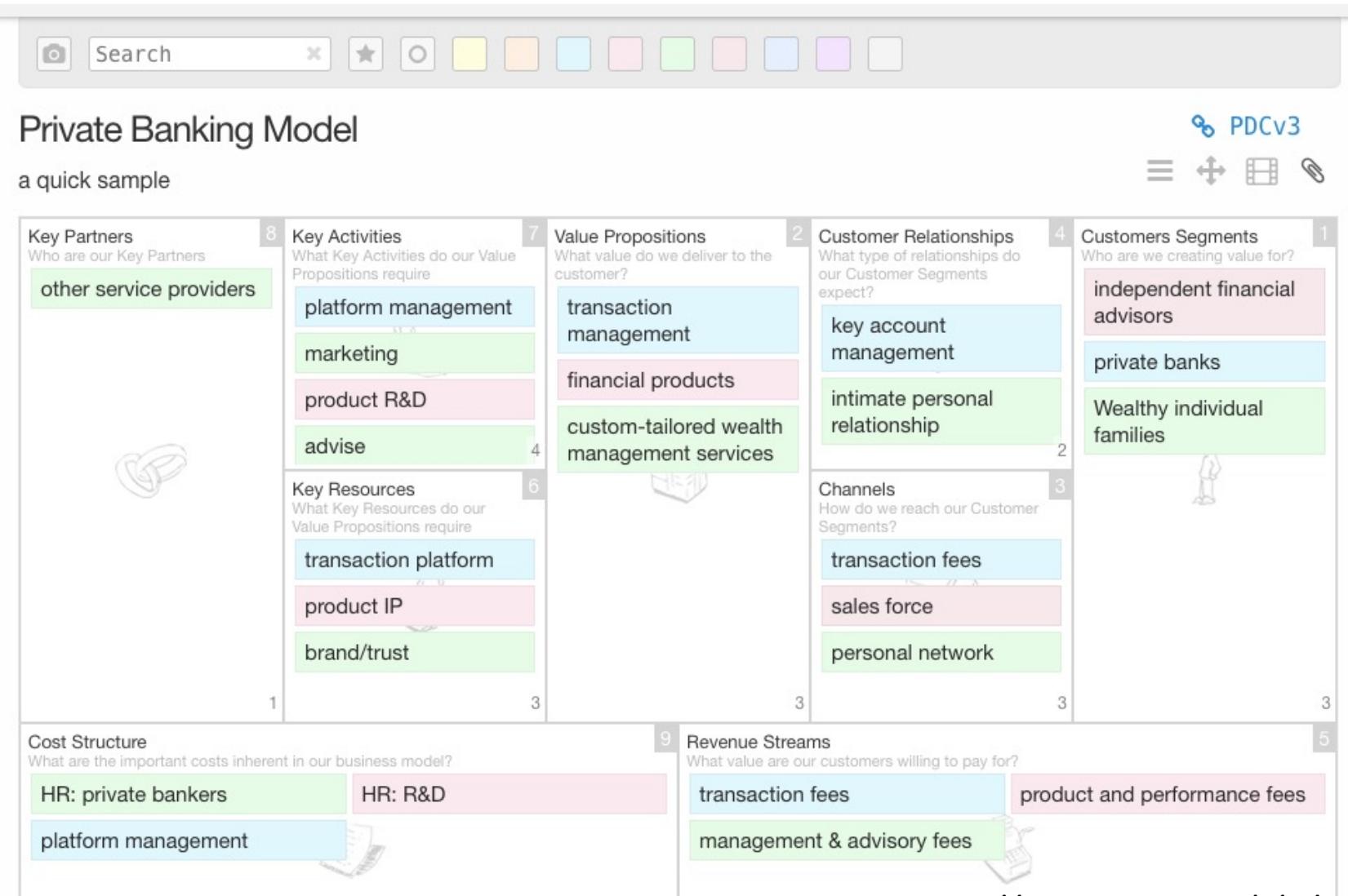
The Customer Development Process

Customer Validation



Business Model Canvas Tool

www.bmfiddle.com



<https://bmfiddle.com/f/#/PDCv3>

Using bmfiddle

The screenshot shows the bmfiddle application interface. At the top, there is a header with a home icon, back and forward arrows, a page number '1', and a checkmark icon. To the right of the header is a user icon labeled 'PDCv3' with a gear icon, and below it are edit, refresh, and delete icons.

The main content area is titled 'Customers Segments' and has the subtitle 'Who are we creating value for?'. It displays three items in a list:

- Independent financial advisors (pink background)
- private banks (light blue background)
- Wealthy individual families (light green background)

Each item has a star and circle icon, an edit icon, and an 'EDIT' button at the bottom right. A dashed box surrounds the first item.

To the right of the list is a sidebar with the following sections:

- STACK (with a grid icon)
- ARCHIVE
- ASSETS (with a refresh icon)
- HELP (with a gear icon)

Below the sidebar is a 'QUESTIONS' section containing two bullet points:

- For whom are we creating value?
- Who are our most important customers?

Below that is an 'EXAMPLES' section containing five bullet points:

- Mass Market
- Niche Market
- Segmented
- Diversified
- Multi-sided Platform

At the bottom left is a 'COMMENTS' section with a speech bubble icon. The footer of the application is a dark blue bar.

Using bmfiddle for business modelling

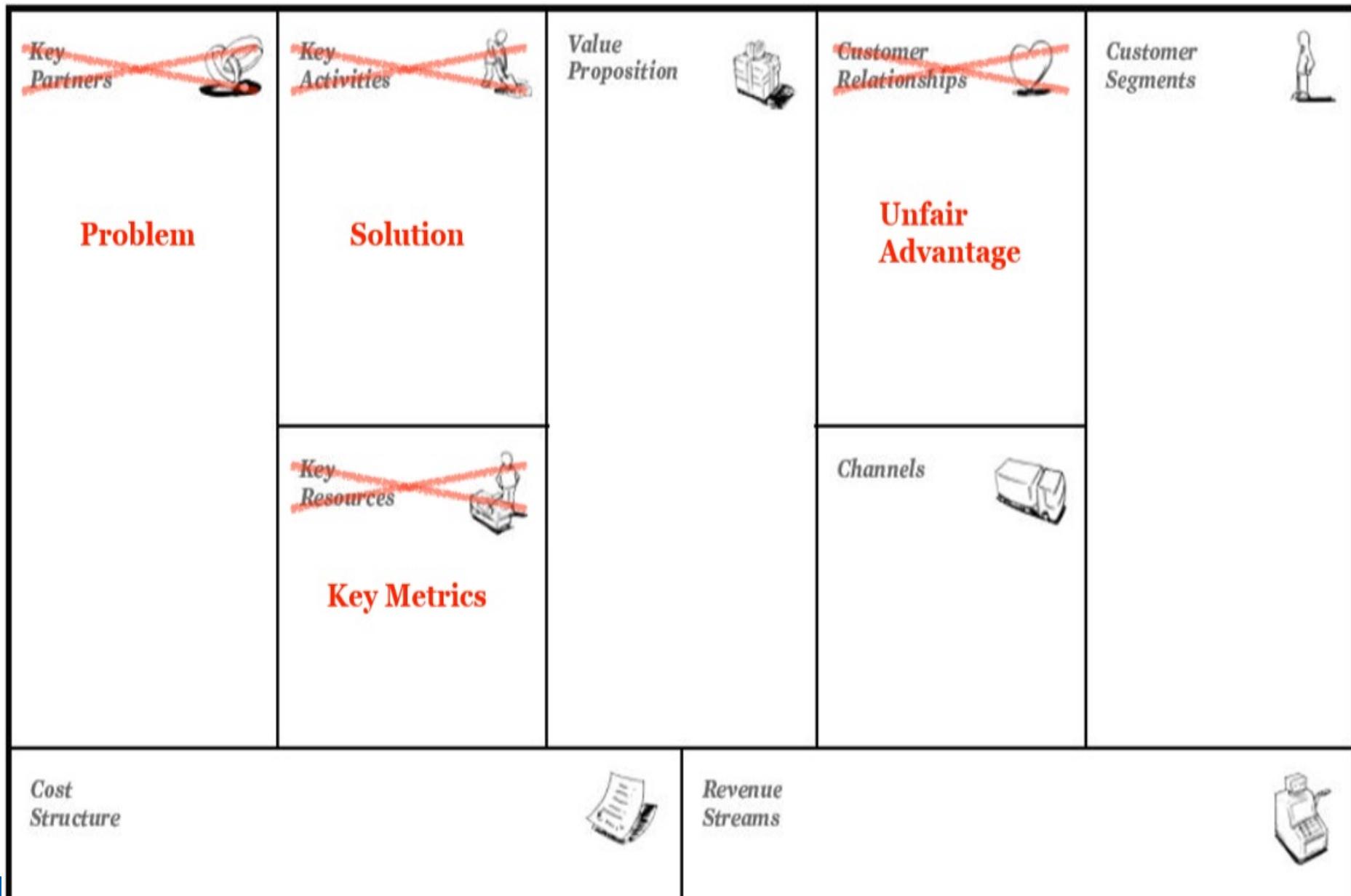
Homework:

- **Get an account**
- **Familiarise yourself with the tool**
- **Try generating a business model canvas for a product or service you use regularly**
- **Revisit this as we learn more about the BMC, did you get it right first time?**

Tips:

- **Preserve iterations, make a copy of your bmfiddle canvas and make BM pivots on copy**
- **Annotate changed items delete (-), added (+), edited (*) to remind you of changes from pivot**
- **Use box colours to group items by customer segment**

There are variations: Lean Canvas Ash Maurya (4 Changes)





Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Customer Discovery Techniques

How?

Customer Development

- The Process

Narrative

- Interviews
- Surveys
- Videos
- Prototypes

Business Model Canvas

- Scorekeeping

Feedback – submissions at fixed points, feedback sessions

Physical Reality Checks

- Skype
- Face-to-face

Customer Discovery Interviews: Before you Leave the Building

Preplanning customer interviews, drawing up contact lists and tips for getting someone's time

Think about a dry run

Customer discover must be done by founders, employees or consultants can't test and pivot

Designing Pass/Fail Experiments - deciding in advance which hypotheses you want to explore when conducting an interview

Discovery Interview

- Being persistent, assertive and opportunistic in getting interviews
- Setup meeting to maximise the opportunities to listen and understand – keep it casual
- Build a deep understanding of the customer through interview – open ended explorative questions – seek facts not speculation
- Allow the conversation flow to maximise the chances of uncovering key customer insights
- Avoid the pitfall of trying to pitch and instead focus on turning the guesses from your model into fact, to size the commercial opportunity and understanding the market type and therefore the competition
- Searching hard through undertaking lots of interviews to find key customer segment insights and uncover concrete patterns in what customers want that you can then pivot towards

Discovery Interviews

- Don't do Death by demo/powerpoint: understanding the problem/needs before attempting to show any solutions
- Only exploring solutions AFTER you've discovered their specific problem and explore suitable solution - engage customers with your demo to maximise learning
- Understanding customers
 - people prefer being nice to being frank - do they really love it?
 - who want to tell you how to do it, rather than revealing their problems - get them to tell their stories
 - Empathising with your customer

Discovery Interviews

- Understanding the different customer types, users vs buyers vs recommender vs.saboteur
- Interview with more than one person from your team: roles, turns, cues
- Grasp unexpected turns in interviews – pursue them
- Customer discovery in new market value propositions – explore day in the life, reflect hypotheses in that context
- Approaching people in public setting
- Always ask for referrals

Back in the building

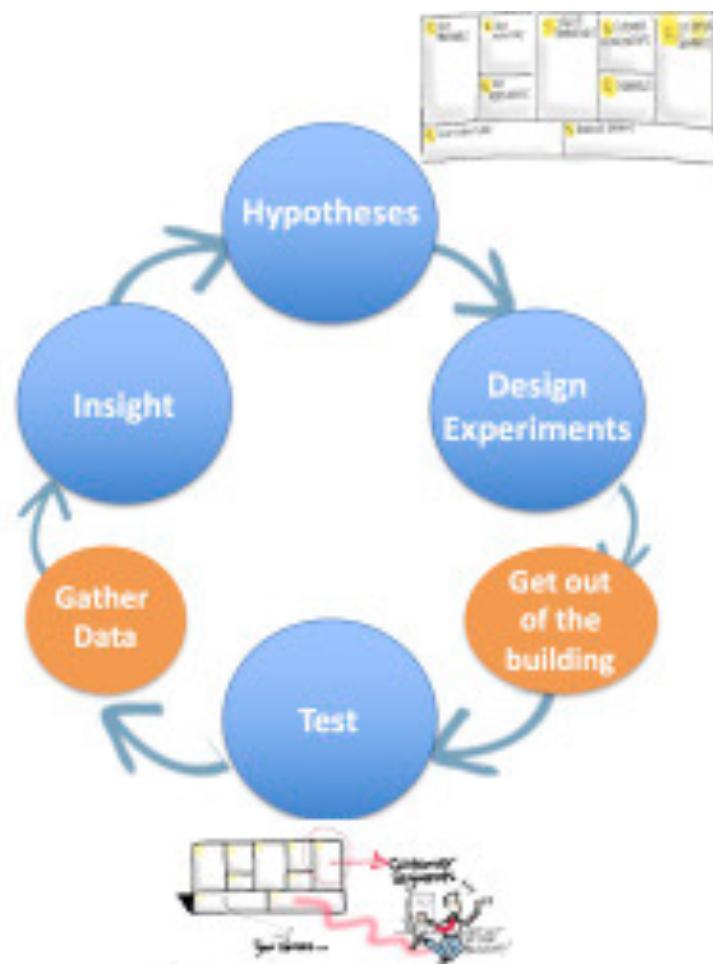
- Looking for ‘earlyvangelists’, customer who have anticipated the benefits of your value proposition and who could be enthusiastic early adopters
- Making sure the rest of your team can share your customer insights – Update BMC, deliberate on pivots
- The Minimum Viable Product (MVP), e.g. wireframe, as a means for learning what the customer wants
- Paying attention to the outliers and pivoting to insight gathered and looking at the people not using the MVP as you are searching not executing

See sample interview videos on blackboard

1. One person at a time
 2. Know your goals and questions ahead of time
 3. Separate behavior and feedback in discussion
 4. Get psyched to hear things you don't want to hear
 5. Disarm "politeness" training
 6. Ask open ended questions
 7. Listen, don't talk
 8. Encourage but don't influence
 9. Follow your nose and drill down
 10. Parrot back or misrepresent to confirm
 11. Ask for introductions
 12. Write up your notes as quickly as possible
- Afterwards: Look for patterns and apply judgement

See additional links on blackboard

Customer Discovery & Validation during COVID



- Customer Discovery and Validation can be easily done via video teleconferencing
- Recognize that many potential interviewees are working from home
- Break your MVP demos into small pieces, leaving time for people to respond
- Adjust your questions to understand how customers' situations have been changed by the pandemic
- Some Customer Discovery can't be done now

<https://steveblank.com/2020/04/07/customer-discovery-in-the-time-of-the-covid-19-virus/>

Rainbow Orchards

Rainbow Orchards – Organic Apple and Squash Farm

Interview

Interview with Fred Ford

I spoke with two people who worked for the farm at the Saratoga Farmer's Market on Saturday 1/15/11. The owner was not available, but I did get some interesting feedback from them. They own approximately 80 acres of apple trees and 20 acres of squash. They don't weed the orchards, just mow. They manually weed the squash once or twice during the growing season, but it is difficult due to the sprawling nature of the plant. Also the squash is quite prodigious and seems to grow fine with minimal weeding. When asked about the value of an automatic weeding machine, they thought it would help some, but not enough to justify the cost. Their main labor concern is thinning the fruit trees – in fact they throw out approximately 75% of the fruit early in the growing season so the remaining fruit grows large and sweet.

One person had an interesting take: she said "people have been farming for 1000s of years and we've never needed machines before..." She went on, but in effect, her point was that there is a spiritual side to manually working the fields that would be lost with a machine – it is good for both the people and the food.

Another worker was also skeptical about how well the machine would perform, having been burned in the past with "new technology" that actually ended up harming more than helping and reducing productivity.

Hypothesis test: Are farmers interested in an autonomous weeding system?

Result: Not likely for small farmers/orchards.

It may be obvious, but tree farms do not weed their fields. Squash also seems to thrive with minimal weeding. As found with Paloutzian Farms, it could be a harder sell to the small farmer due



Photos

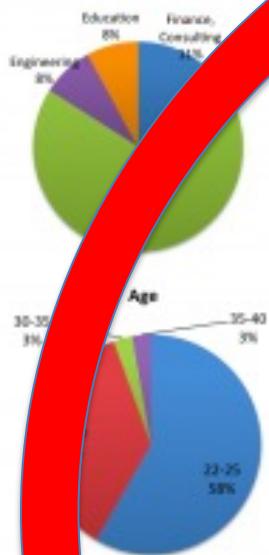


Videos

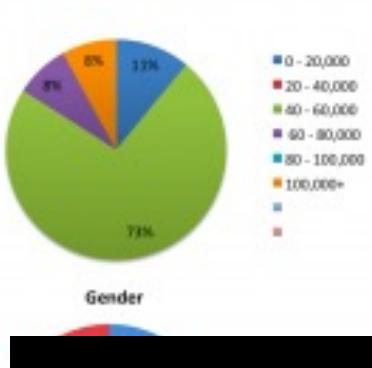


Customer Segment: Stanford Survey Results (n=40)

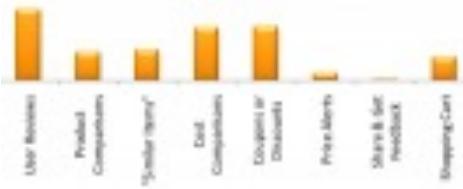
Profession or Field of Study



Average Salary Range



Which Features Are Most Useful When Shopping Online?



What Are Your Biggest Concerns With Online Shopping?

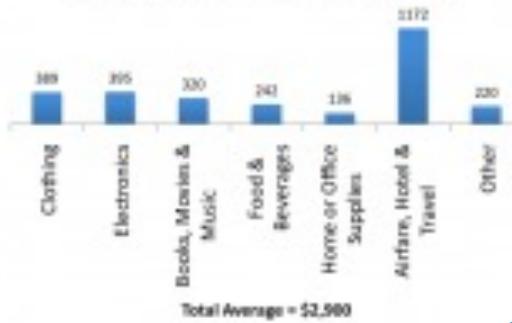


Surveys

How Often Do You Make Purchases Online?



Average Amount Spent in Past Year



Los Altos Parks Supervisor - Damon



Interview & Photos

Damon Cockerham – Supervisor of Parks Maintenance – Los Altos Parks and Recreation
650-947-2870

In-Person Interview with Joe Bingold

Los Altos has 20 acres of turf spread across several parks (biggest park ~3.5 acres), which are mowed once a week by 2 operators with 2 ride-on mowers. It takes 1 day (Wednesday) 9 hour shift to mow the entirety of the Los Altos parks. Thus, it takes about 18 hours to mow the parks. Of this time, about 5 hours is actually spent on the mowers – a lot of time is spent in travel between parks, clearing the sidewalks, etc.

They currently have a John Deere and a Toro mower. The mowers last about 10 years and cost about \$60K. Residual value of the mowers at the end of the 10 yrs is \$3K.

Given the smaller amount of turf that Damon is responsible to mow, there is probably not a business case for an automated mower. It is unlikely that they will reduce their manpower with this technology. That said, Damon did believe that an individual could start a mower going in a park and then go do other maintenance in the meantime (edging, park inspection, etc.)

Surveying Competitors Pricing Model

Posted on February 15, 2011 by gabrielhyu

Competitive Analysis

* Pricing Model:

* \$695 per server per year for windows box

* \$395 per server per year for windows box

* maximum of 40% bulk discount

* support fees: 20% of the list cost, which includes technical support and upgrade to newest software

NimSoft

* Description: Company featured in Rackspace as one of its partners. It provide solutions to monitor virtualized datacenter, on hosted or managed infrastructure, IaaS, PaaS, or SaaS services, public and/or private clouds.

* Pricing Model:

* Cold called their sales department, but they refused to give specific quotes

* They mentioned that their pricing model is very flexible:

* license by server/network device count

* or can also license by hour; usage, meter usage, bulk pricing, volume

Neptuny / BMC

* Description: Recently acquired by BMC. Products capacity management for all data center resources, including physical and virtual servers, databases, storage, applications, middleware, networks, facilities, etc. The product also provides automated capacity analysis and reporting to help its client optimize performance and capacity.

* Pricing Model:

* Cold call and refused to provide specific quotes

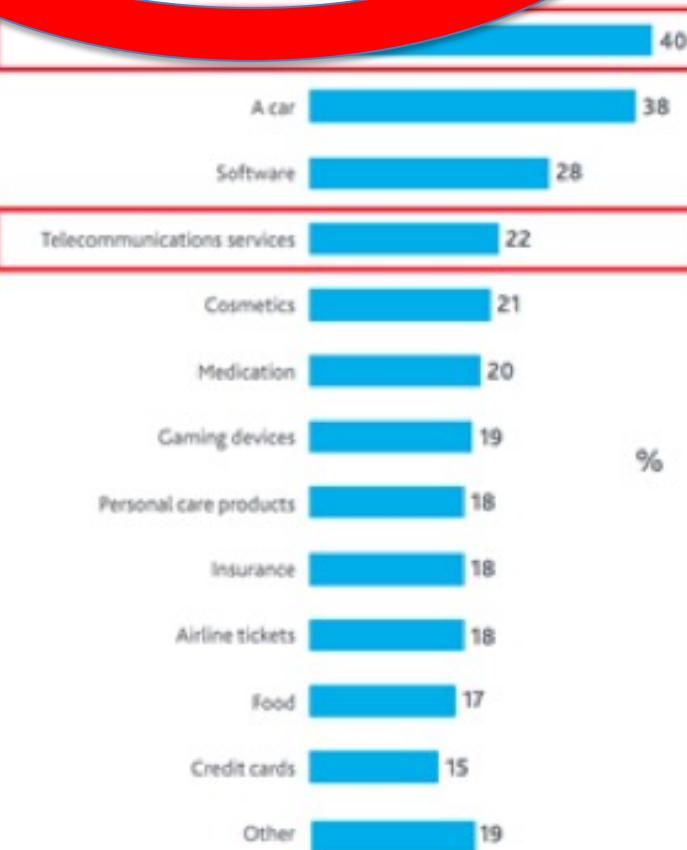
* Did mention that they licensed per sockets, and the price applies across all client types.

Key finding this week: Reviews & popularity highly disproportionate

Key Findings

I would not buy the following products without consulting online reviews:

Global Average



Base: All respondents n=27,645

Consumer Confidence Survey - Q1 2010 • Field dates March 8, 2010 - March 28, 2010

What product/services do you intend to purchase online in the next 6 months?

Global Average



Base: All respondents n=27,645

Consumer Confidence Survey - Q1 2010 • Field dates March 8, 2010 - March 28, 2010

Winning landing page design should increase conversions by 80%

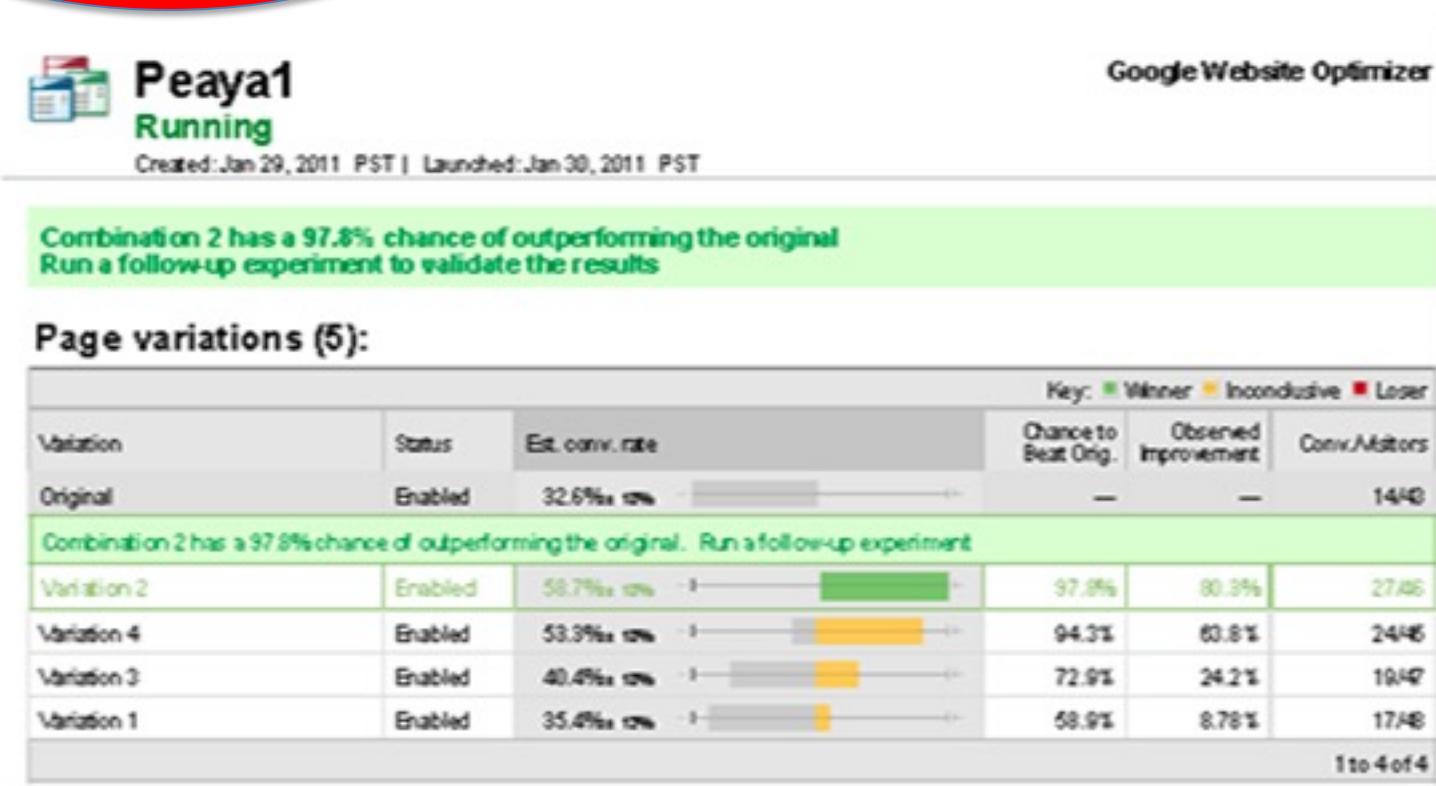
Results of A/B tests are in. Based on 26,111 page views and 119 conversions, we have a 97.8% probability of winning the test from 32.6% to 58.7% (an 80% increase!) by using the below design:

A/B Test Results

Only use our software

Use Adnote's paid version

Putting navigation items to bottom in small text so it's not distracting



Posting credit: Abhishek

Should we pivot?

Key Question

avenue products for our current software to not fit in the parameters of the product?

?

retweet

Here's our latest thinking on doing "Product Libraries"—personalized catalogs of products you can organize, annotate, and share—just like Personal Libraries—with the added features of price comparisons and instant appraisals.

If you have comments and part of the E245 class, please consider leaving a comment (click on the post title to enable commenting).

Revised Customer Segment & Value Prop Hypothesis

Based on ~20 interviews, ~800 subject MVP tests, market & competitive research



Pat the Professional

Salary: \$40,000 – 150,000/year
Finance, Consulting, Public Relations, Marketing

Keeps up with trends in fashion and technology

Traits:

- Gets ideas from blogs and shopping websites
- Values celebrity trends and friends' opinions
- Wants to buy high ticket items at lowest price
- Interested in shopping opportunities – either being the first to have something, or getting an alert when a price drops

Purchase Power:

- Spends \$1,000 – 15,000 in online shopping per year on discretionary items



Value Proposition

- **Promise:** Save & hassle time shopping online
- **Differentiation:** Discover online goods recommended by friends at the lowest possible price from unspammy vendors
- **Evidence:** Price recommendations, social features
- **Cost:** Free to user
- **Effort:** Download an install, initially requires chrome
- **Risk:** Concerns about privacy, browser crashing, biased search results, valuable use of time

Clinical Trials Design

Here is the hypothetical design of all the clinical tests and trials needed to bring

Strategy

down to business, based on the totality of our strategy. It includes a pilot testing program to prove feasibility of claimed characteristics, a staged pivotal FDA trials to reduce the risk and increase the chance of getting FDA approval, which at the same time includes economic end-points such as procedure time, cost, required training time, etc. to include CMS cost-effectiveness studies for faster adoption of our specific Cat III CPT codes.

Involves a number of patients, and the cost is relatively estimated based on different expense elements of clinical trials, such as patient enrollment, trial design, facility, technician and physicians involved, permit to perform the tests, results analysis, and publications.

Clinical Trials Design

MammOptics Clinical Trials

- 500 patients
- Total cost: **\$7.2M**

Stage 2 Interim Trials

- Focus on Safety-Efficacy & statistical superior sensitivity clinical results

6 Months

15 Months

Week 7 Business Model Canvas & Financial Projections

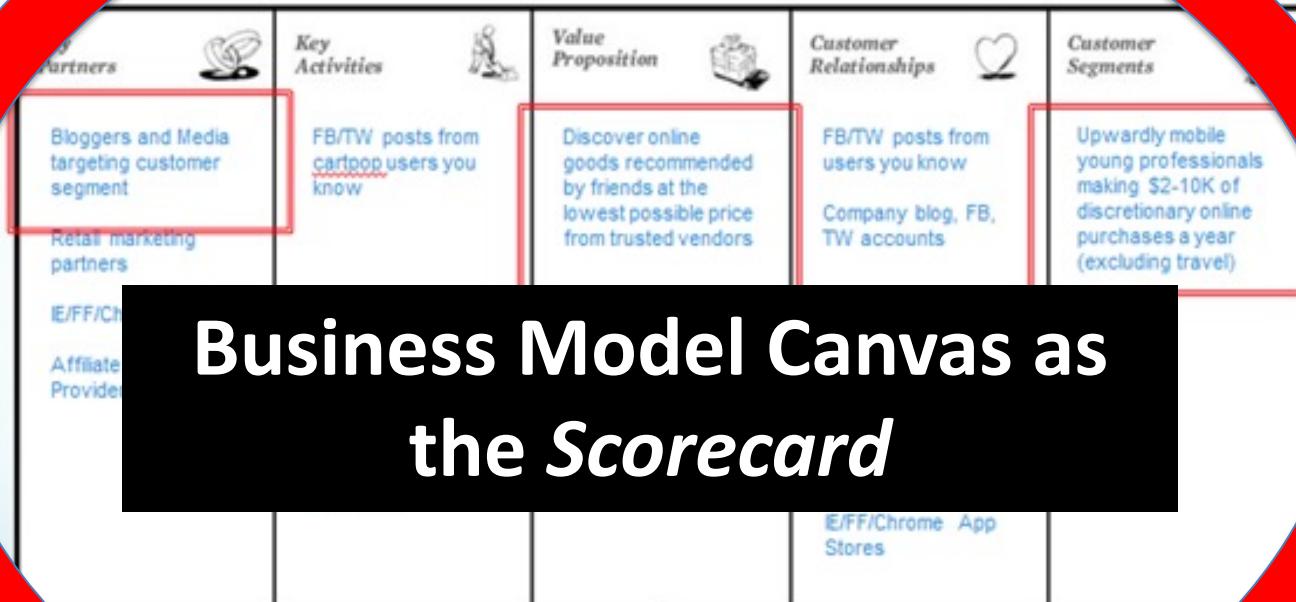
Pretty dramatic on our business model canvas, moving from "Reference Libraries" to "Product Libraries"—key change is we're focusing on people with lots of money who love to shop, and have many good options on shops to help them shop, rather than researchers with no money and lots of needs, and fewer good options.

0
tweets

[tweet](#)

We're pretty much pivoting away from our existing software for the course. It's a difficult choice, but our previous project just didn't fit the course objectives...

Week 7 Canvas



AWS Infrastructure
SEM
Tech & Marketing OpEx

Revenue Streams

Affiliate program fees
Licensing
Subscription fees
Ad revenue