



# DRS Pro Transfer

Minimum Viable Products (in a **Lean Startup**)

**Prof. Dr. Hannes Rothe**  
Department of Information Systems  
Freie Universität Berlin

# What is a Lean Startup?

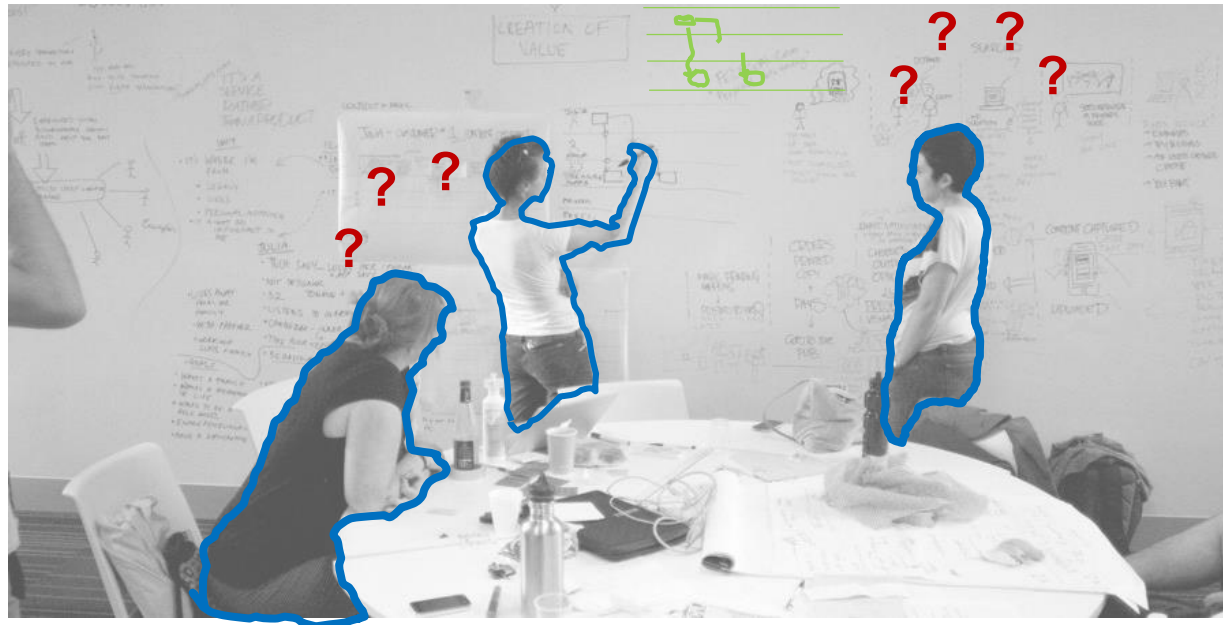
or why should we care about prototyping?





# What is the difference between startups and existing companies?

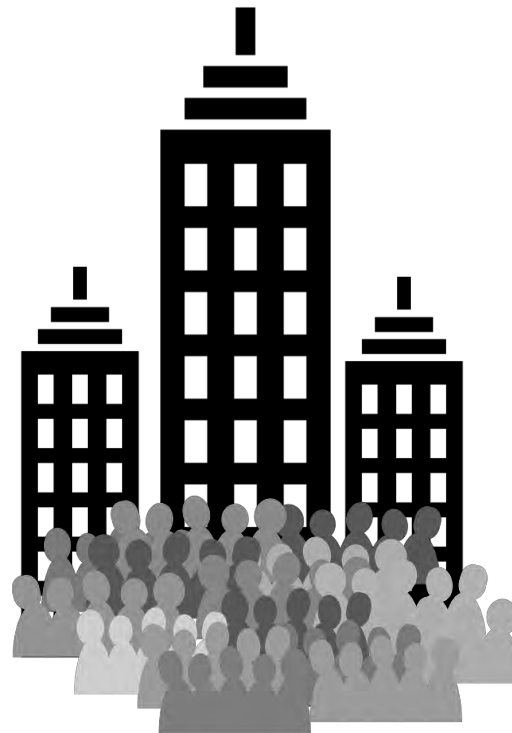
“A startup is a **human institution** designed to deliver a **new product or service** under conditions of **extreme uncertainty**”  
(Eric Ries 2009)



# What is the difference between startups and existing companies?

a **Startup**

is **not** a small version of a big company



# What is the difference between startups and existing companies?

A startup is “a **temporary** organization designed to **search** for a **repeatable** and **scalable** **business model.**”

(Steve Blank 2011)



Source: S. Blank (2011): Why the lean start-up changes everything.

# What is the difference between startups and existing companies?

Startups **search** for assumptions about the **unknown**.  
Existing  
Companies  
**execute** what  
they **know**.



*“Business modeling is [...] the managerial equivalent of the scientific method – you start with a hypothesis, which you then test in action and revise when necessary.”*

(Magretta, 2002)

H1: A change in an **Independent Variable** leads to a change in a **Dependent Variable**

f.e. If we place a product more prominently, it can be sold more often

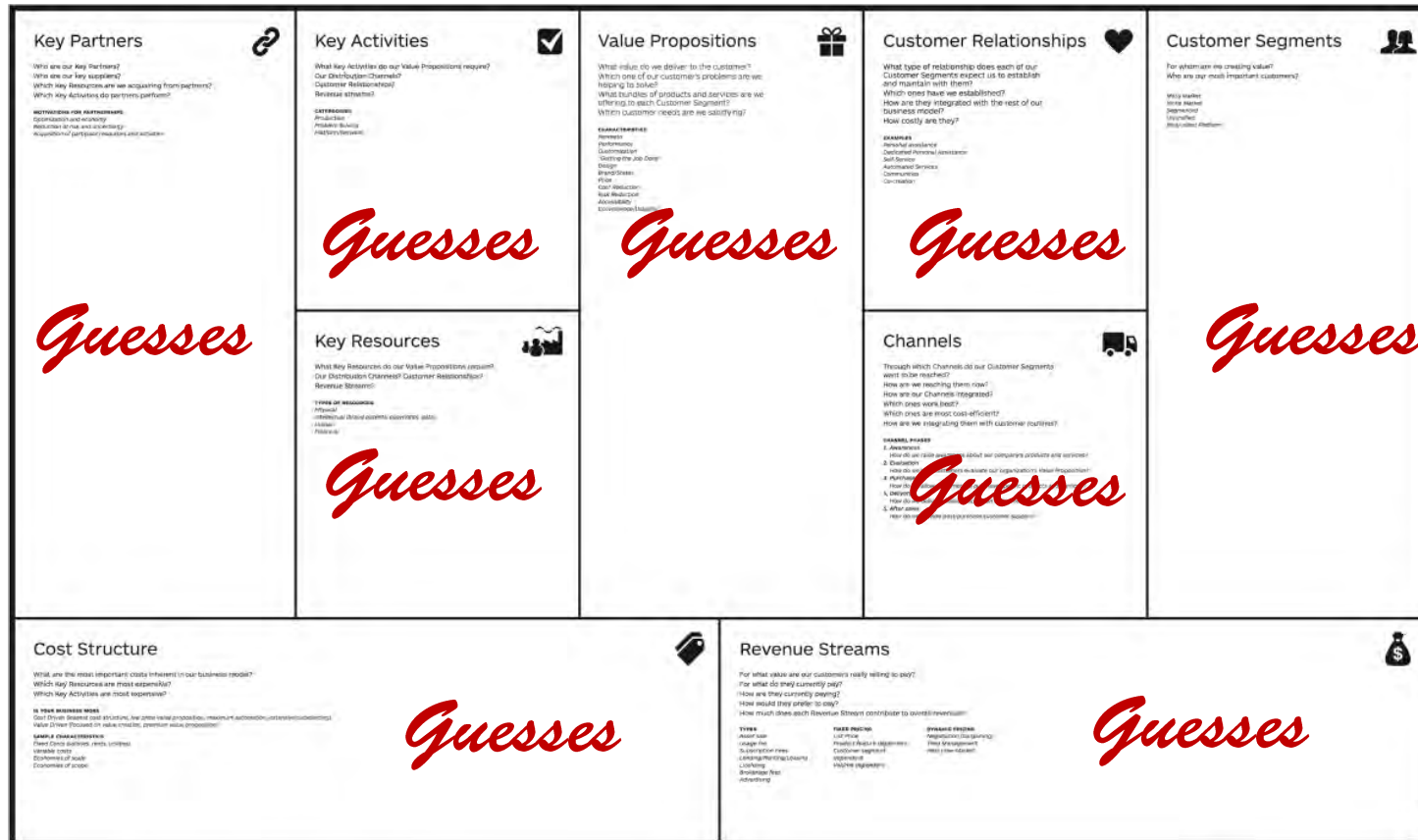


Source: J. Magretta (2002): Why Business Models matter, p. 5.

# Test the Problem, then your solution.

## The Business Model Canvas

Designed by *My Startup* | Designed by: | Date: | Version:



DESIGNED BY: Business Model Foundry AG

The authors of Business Model Generation and Strategyzer

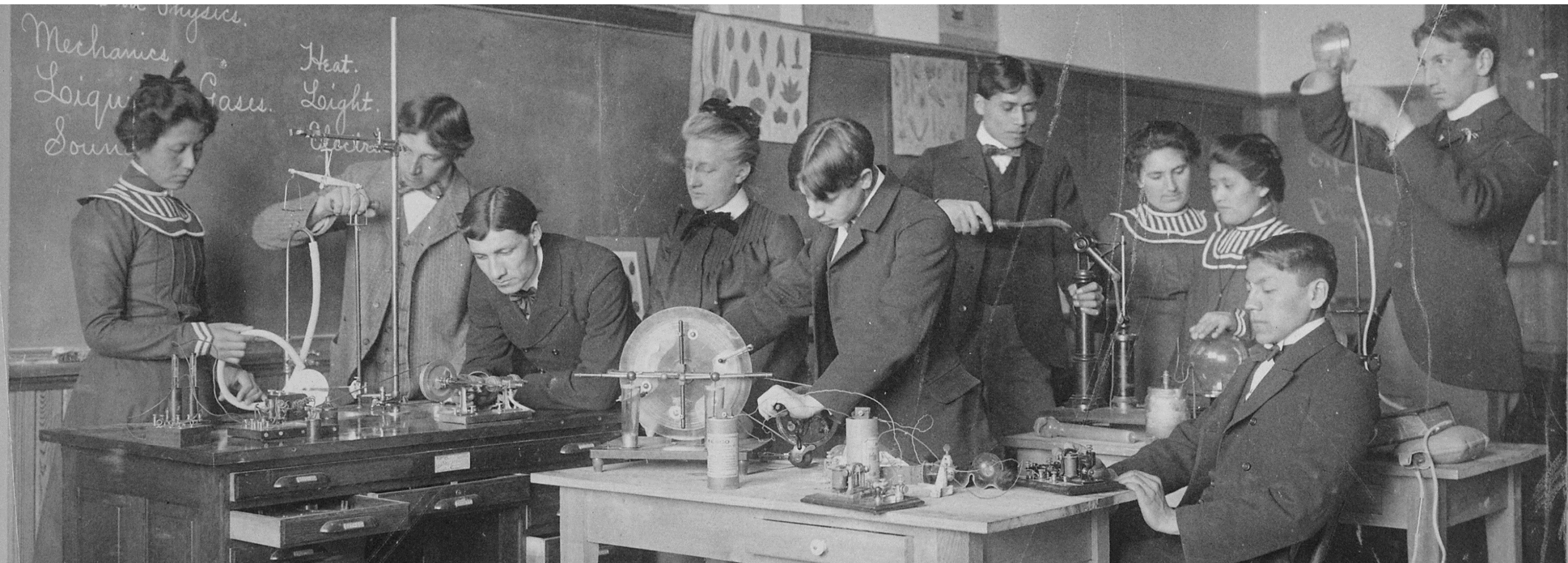
This work is licensed under the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-sa/4.0/> or send a letter to Creative Commons, 171 Second Street, San Francisco, California, 94105, USA.



Ref. [http://upload.wikimedia.org/wikipedia/commons/thumb/1/10/Business\\_Model\\_Canvas.png/1280px-Business\\_Model\\_Canvas.png](http://upload.wikimedia.org/wikipedia/commons/thumb/1/10/Business_Model_Canvas.png/1280px-Business_Model_Canvas.png)



# How do we validate our Business Model?



# We want to learn as *fast as we can*...

Hence, we want to reduce the time between

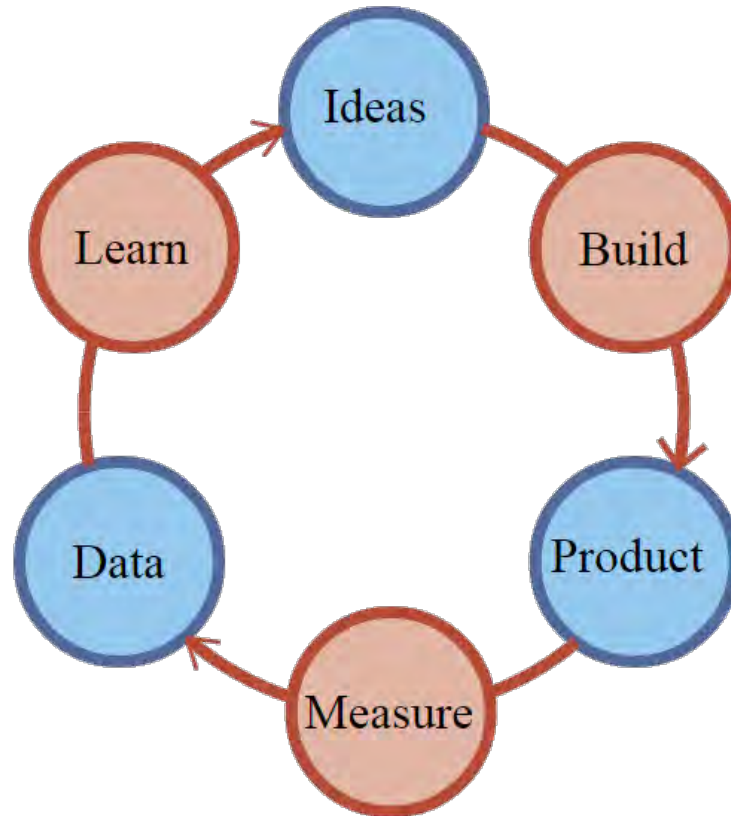
**Build > Measure > Learn** > Build > Measure > Learn > Build > Measure > Learn ---



Ref. Ries (2011): The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses.

# We want to learn as *fast as we can*...

We need to test “leap-of-faith”-hypotheses:  
 a) Value Assumptions and b) Growth Assumptions



Ref. Ries (2011): The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses.

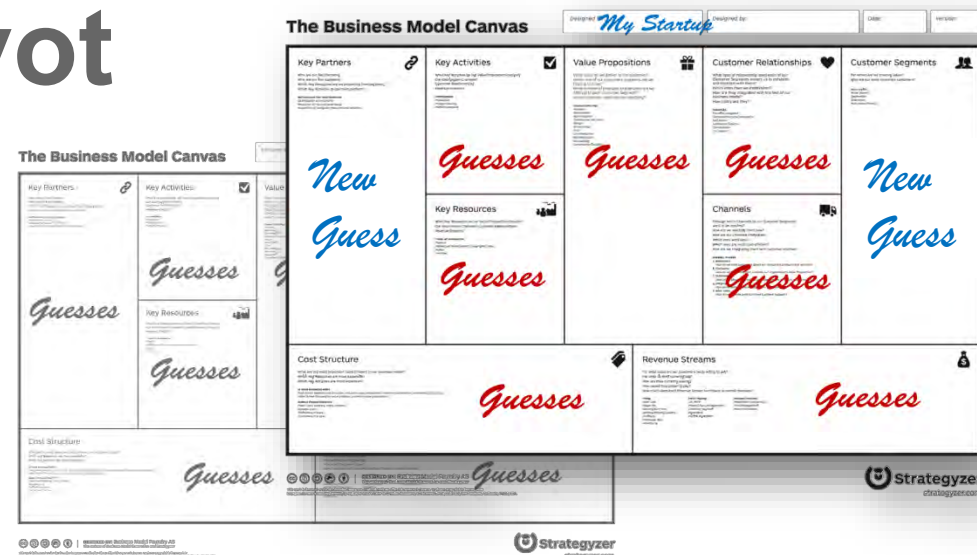


# Once we have a **Minimum Viable Product**...

A MVP is the basis for an *agile*, *incremental* and *iterative* development of a business model.

In case parts of our problem assumptions are wrong, we change the Business Model fundamentally (before our capital runs low).

We call it: **pivot**



Ref. Ries (2011): The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses.



# Minimum Viable Product

What is a MVP?

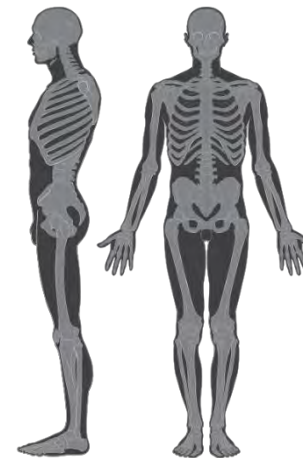


"The minimum viable product is that version of a new product which allows a team to collect the **maximum amount of validated learning about customers** with the **least effort**."

(Eric Ries, 2009)

"[...] a bare-bone[s] product that includes just enough features to allow useful feedback from early adopters"

(Carmen Nobel, 2013)



Ref. <http://www.startuplessonslearned.com/2009/08/minimum-viable-product-guide.html>

Nobel, C. (2013). Teaching a 'Lean Startup' Strategy. *Harvard Business School*.

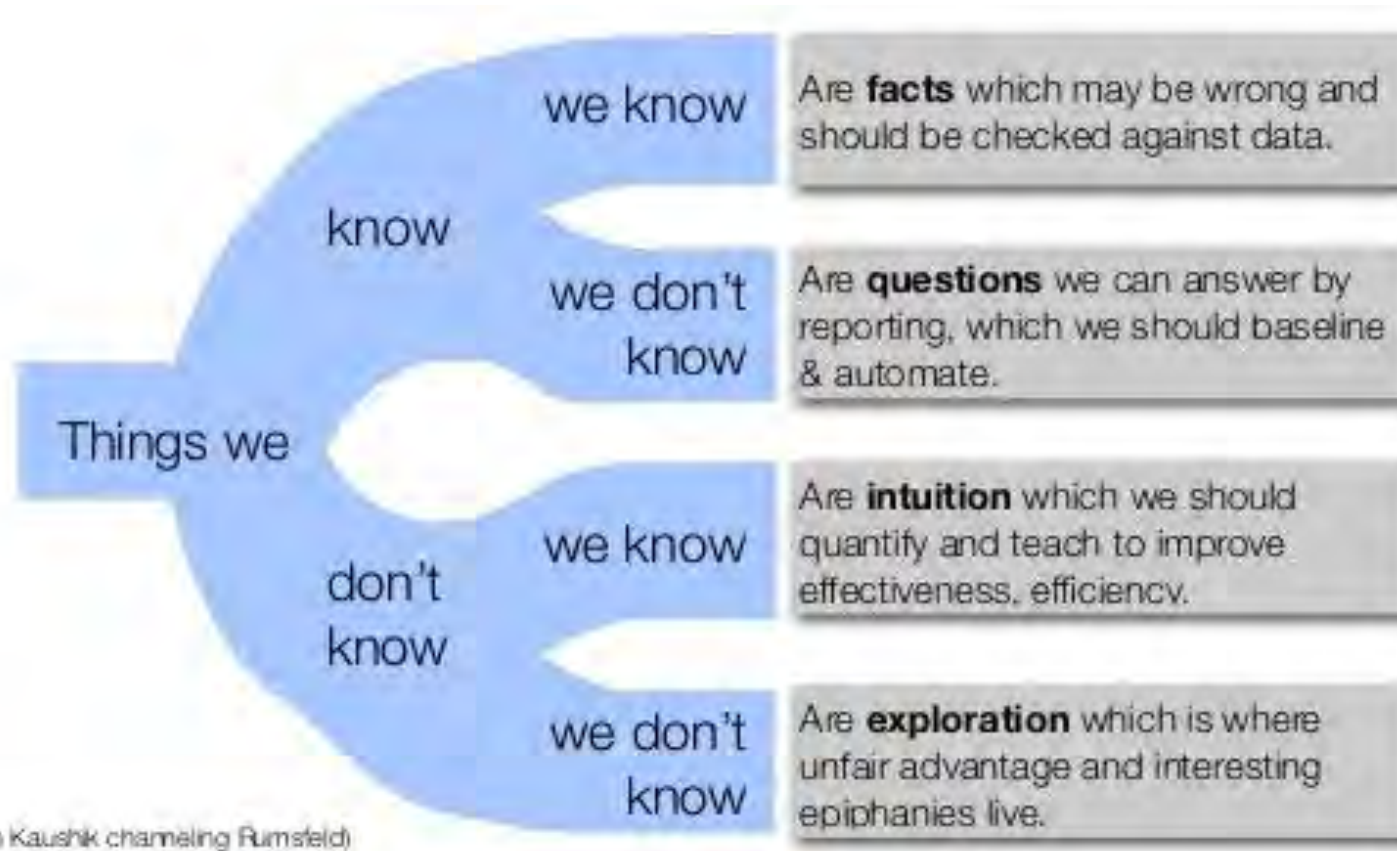
image: Margot Duane 2012 | flickr



DIGITAL  
ENTREPRENEURSHIP  
HUB

# Minimum Viable Product

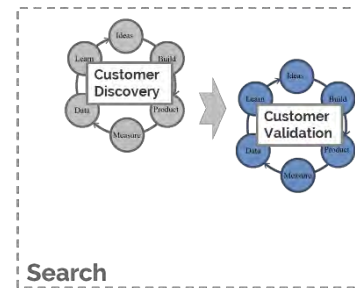
## Why an MVP?



Ref. Croll/Yoskovitz (2013): Lean analytics

# Customer Development

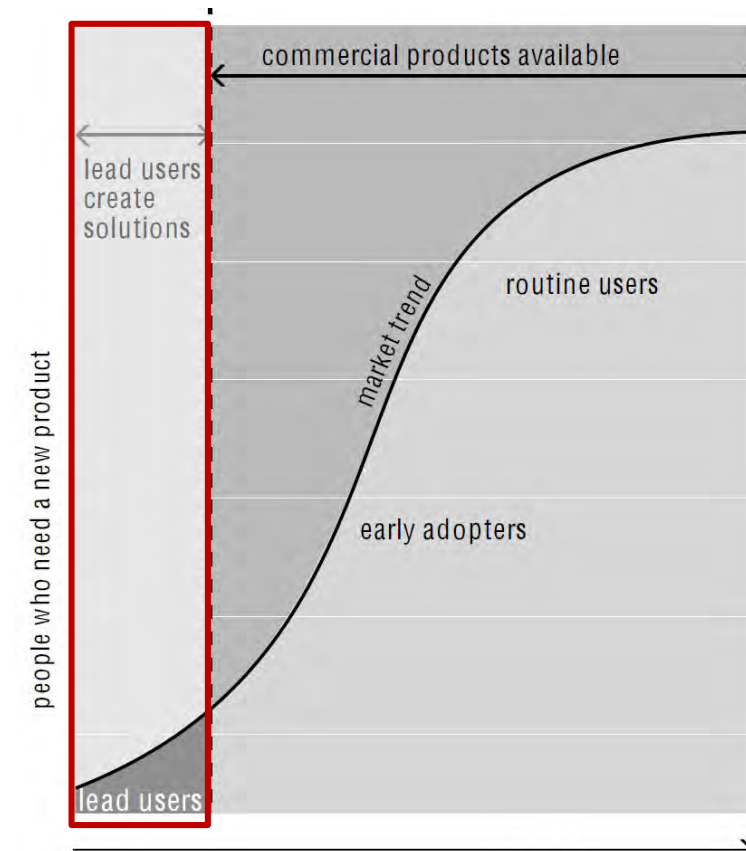
Where do we start?



“a group of stupid hippies turned the bike world on its ear”



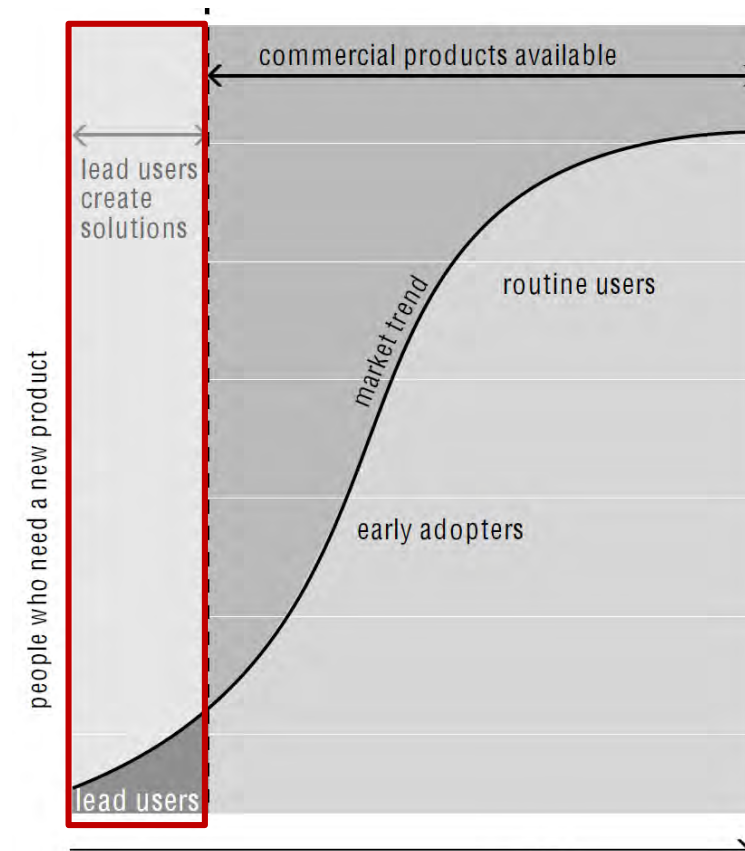
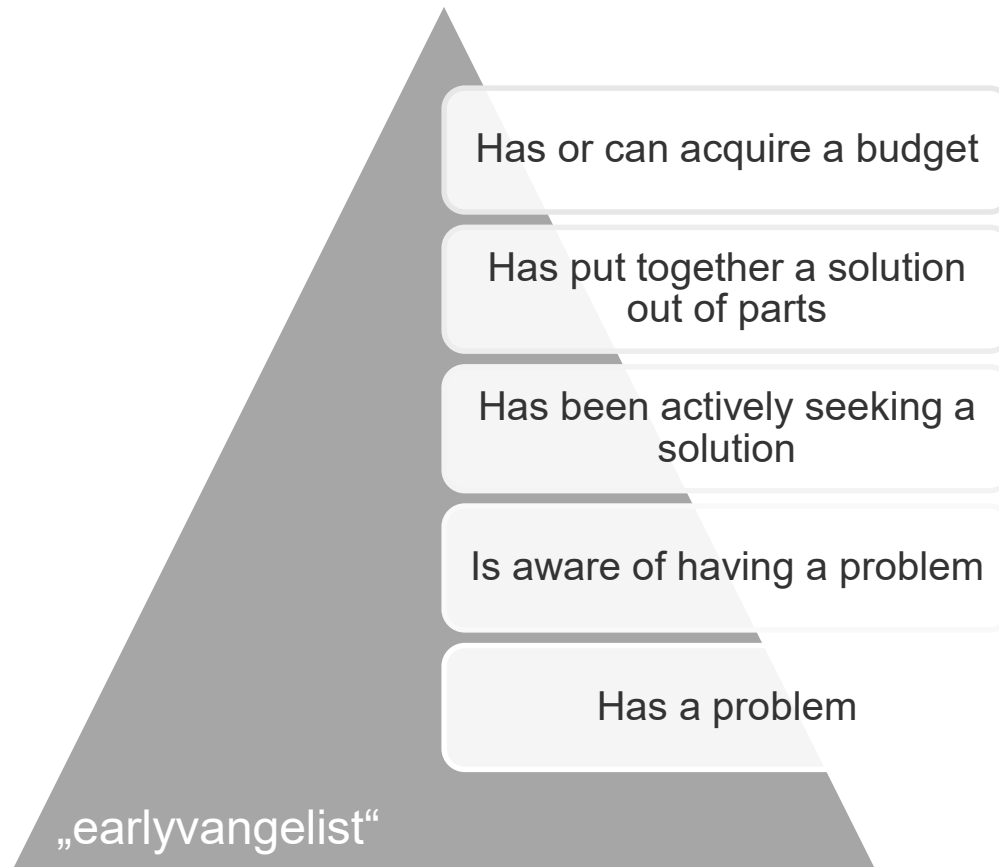
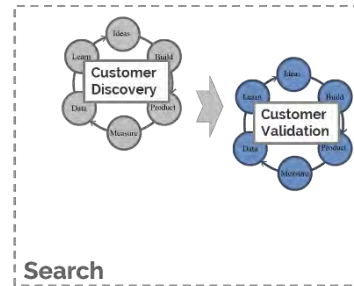
“I don’t think Schwinn Designers were really thinking about us, when they design those early fat tire bikes.”



Ref. E Ries (2011): The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses; S Blank (2013): Why the Lean Start Up Changes Everything. Images and citations from Klunkerz: A Film About Mountain Bike History

# Customer Development

Where do we start?

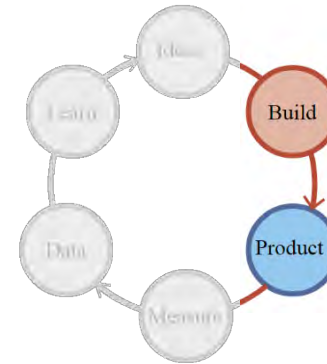


Ref. S. Blank (2010): <https://steveblank.com/2010/03/04/perfection-by-subtraction-the-minimum-feature-set/>



# Build faster...

Enter the Lean Startup Cycle with a **testable MVP** in front of real customers.



## A Lean Design

(Agile Development, Free or Open Source, Cloud Computing, Refactoring etc.)

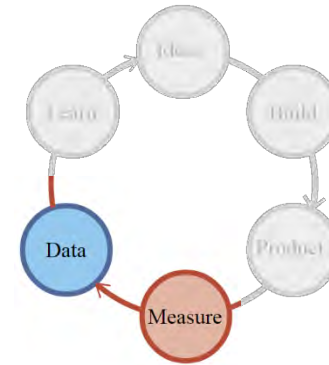
## Usability or UX Tests

(Hallway Testing, Heuristic Evaluation, A/B Tests, Usability-questionnaires, Cognitive Walkthrough etc.)



Ref. Ries (2011): The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses.

# Measure faster...



Beware Analysis Paralysis:  
**Get out of the building**  
 and talk to your customers...

...about their Issues  
 (Interviews, Observation)

and your Solution  
 (Interviews, make use of web analytics, usability & UX testing, funnel analysis (f.e. AARRR), cohort analysis)

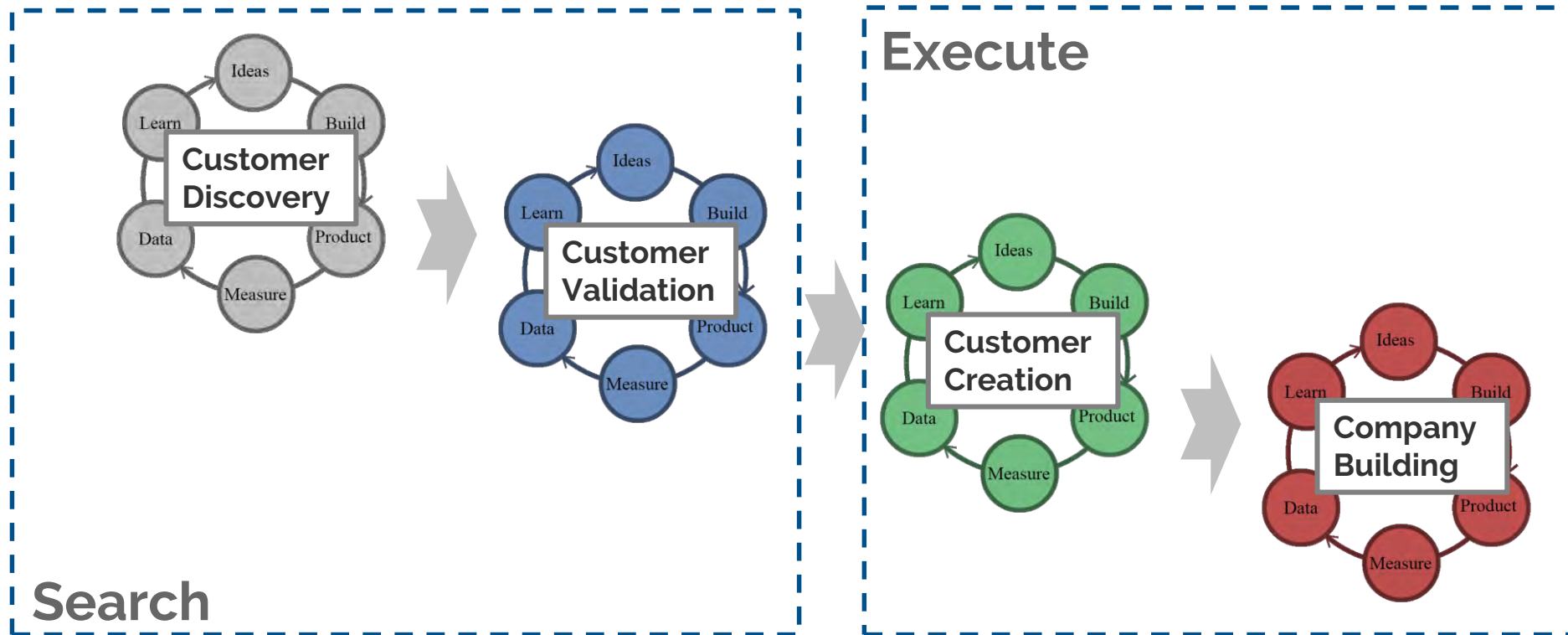
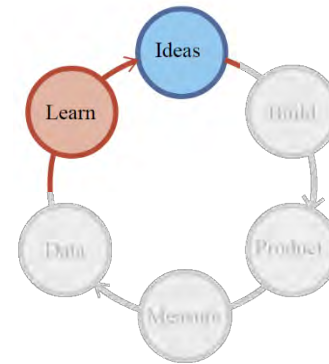


Ref. Ries (2011): The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses; A Maurya (2012): Running Lean; Lean Analytics (2013)

# Learn faster...

Your Learning Goals depend on your current state:

In the end you want **Product/Market-Fit**



Ref. E Ries (2011): The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses; S Blank (2013): Why the Lean Start Up Changes Everything.



## Minimum Viable Products (in a Lean Startup)

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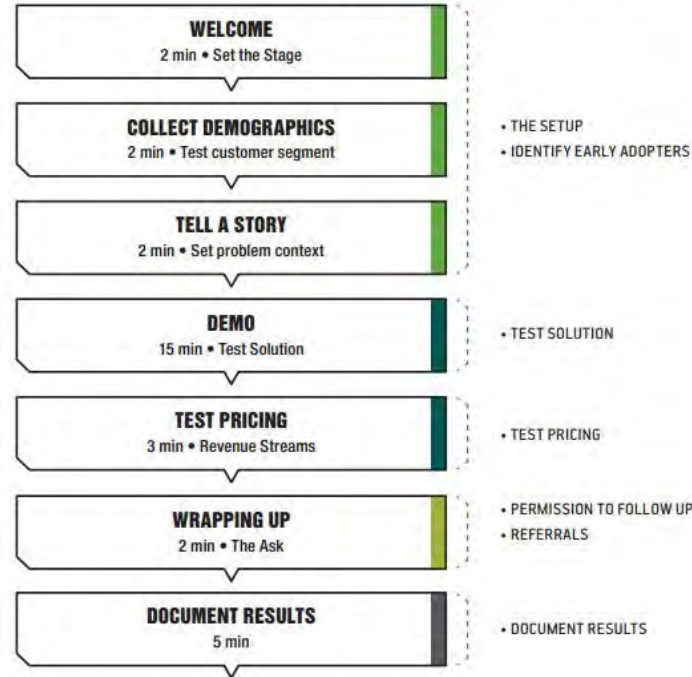


# Minimum Viable Product Interview

## PROBLEM INTERVIEW SCRIPT DECONSTRUCTED



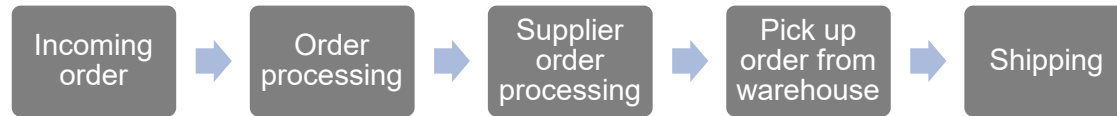
## SOLUTION INTERVIEW SCRIPT DECONSTRUCTED



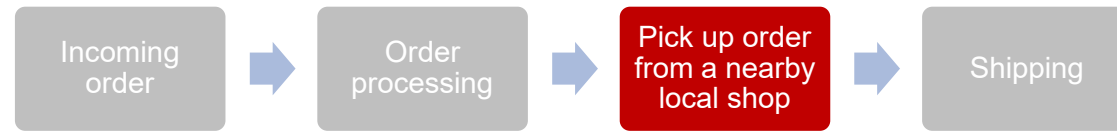
# Minimum Viable Product

## Concierge MVP (Wizard of Oz MVP)

Expected process by customer



Behind the curtain



Shoes merchant was sold for about 900 Mio. US\$ to Amazon in 2009

„Fake it until you make it“

„[Be] the [wo]lman behind the curtain.“

### Task and Tools



Service is done step-by-step, manually and in person, as if it was done (semi)automatic.



See also Ries (2010): The Lean Startup

Images: Wikipedia | Jorge Royan (cc by-sa 3.0), Cover of L.F. Baum „Wonderful wizard of OZ“, G. M. Hill, 1900

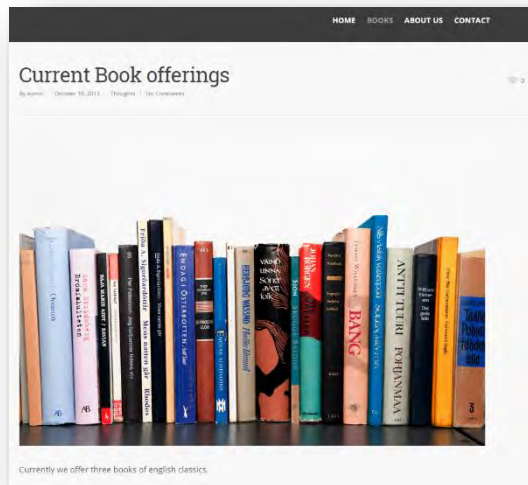
# Minimum Viable Product

## Concierge MVP (Wizard of Oz MVP)

**Another example** Linguistic students at your faculty need books without marked paragraphs

Create a simple landing page, find and sell books by hand.

How many people visited your site and ordered these books?

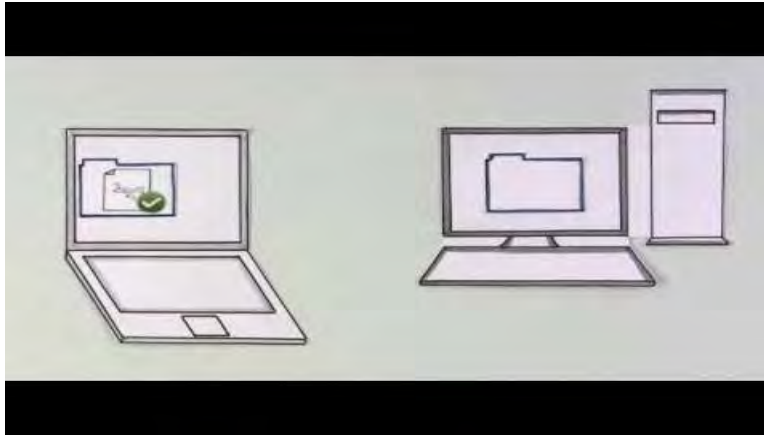


Ref. <http://www.startuplessonslearned.com/2009/03/minimum-viable-product.html>.

Image: Wikipedia | Johannes Jansson/norden.org (cc by 2.5)

# Minimum Viable Product

## Video MVP



<https://www.youtube.com/watch?v=w4eTR7tci6A>

“It drove hundreds of thousands of people to the website. Our beta waiting list went from 5,000 people to 75,000 people literally overnight. It totally blew us away.”

(Drew Houston, CEO Dropbox)

## Task and Tools

A video displays briefly the value proposition / value creation by a service or product offering.

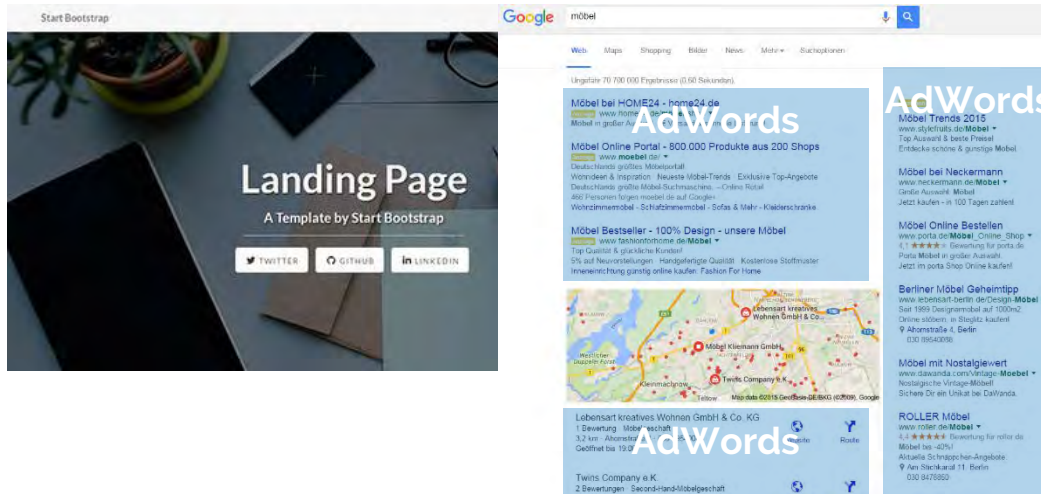


Ref. Video made with VideoScribe; Another example <http://innovationsmarathon.de/team-7>



# Minimum Viable Product

## Landing Page / Ads



## Tasks and Tools

Illustrate your value proposition (product or service offer)

LandingPage



Critical aspect: Assess your success with suitable measures.

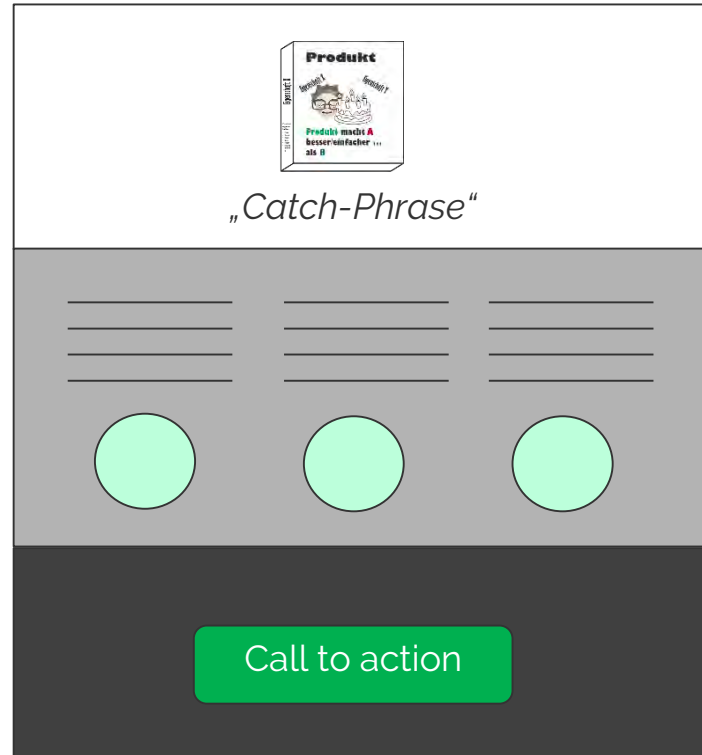
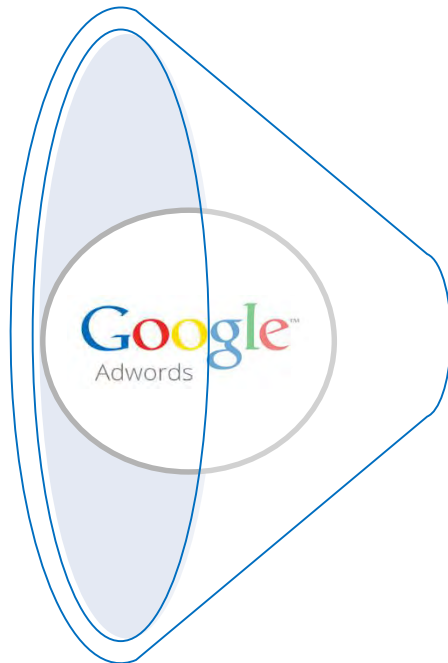
KPI      ARRR Method  
Lean Analytics

Images. Screenshots from Facebook.com and Google.com



# Minimum Viable Product

## Landing Page / Ads



1. In 10 Minutes Scribble a landing page
  - a) a **Landing Page** for our product
  - b) **Develop search terms** to acquire target customers
2. Present your page (2 Min.)

Ref.: Osterwalder et al. (2014): Value Proposition Design  
Assess Costs-per-Click (Google) on <https://adwords.google.com/ko/KeywordPlanner/>

Images: cc by sa Chris Harrison 2007 | Flickr, cc by sa Ftiercel 2012 | Wikipedia



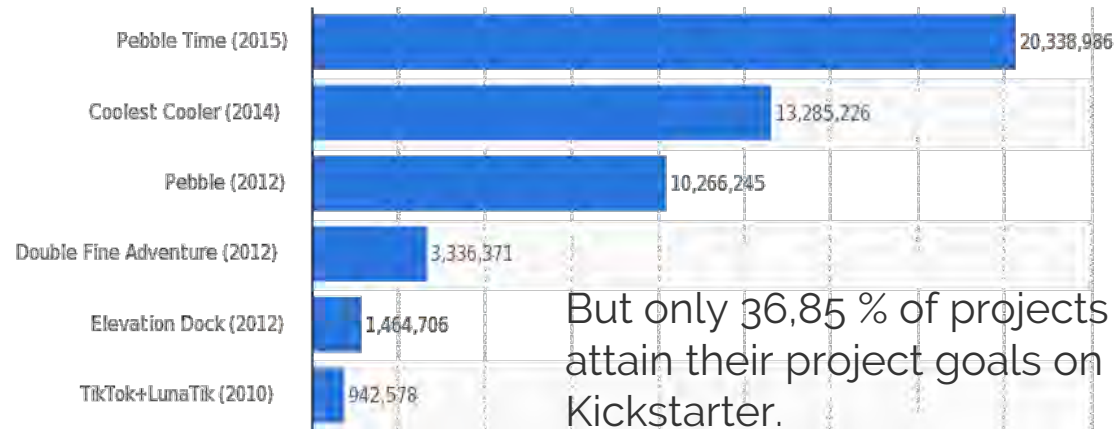
# Minimum Viable Product

## Crowdfunding

*Sell it before you build it*



Image: Pebble Technologies



But only 36,85 % of projects attain their project goals on Kickstarter.

## Tasks and Tools

Assess market demand, get feedback about product or service and test marketing channels.

Crowdfunding



KICKSTARTER



Maybe you also secure initial funding

Crowdfunding



Ref. <http://www.statista.com/statistics/321513/top-ranked-kickstarter-projects-funding/>  
<http://www.statista.com/statistics/235405/kickstarter-project-funding-success-rate/>



# Minimum Viable Product

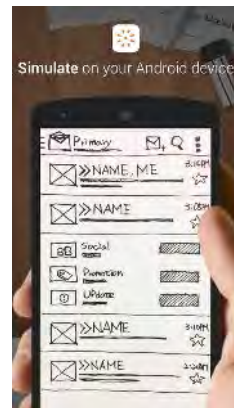
## Paper Prototype

### Webbased



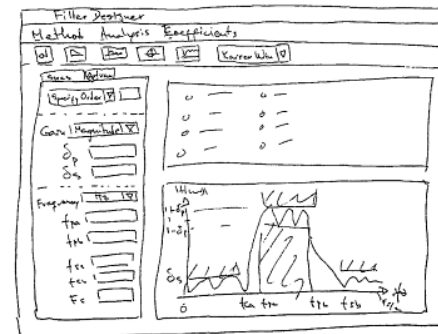
i.e. myBalsamiq, Axure  
(Indesign, Powerpoint)

### Android & iOS



i.e. Pop 2.0

### Paper & Pencil



i.e. pencil, fineliner,  
colored markers,  
scissors ...



Sefelin, Reinhard, Manfred Tscheligi, and Verena Giller. "Paper prototyping-what is it good for?: a comparison of paper-and computer-based low-fidelity prototyping."; Snyder, Carolyn. *Paper prototyping: The fast and easy way to design and refine user interfaces*, 2003.





# Minimum Viable Product

## Paper Prototype

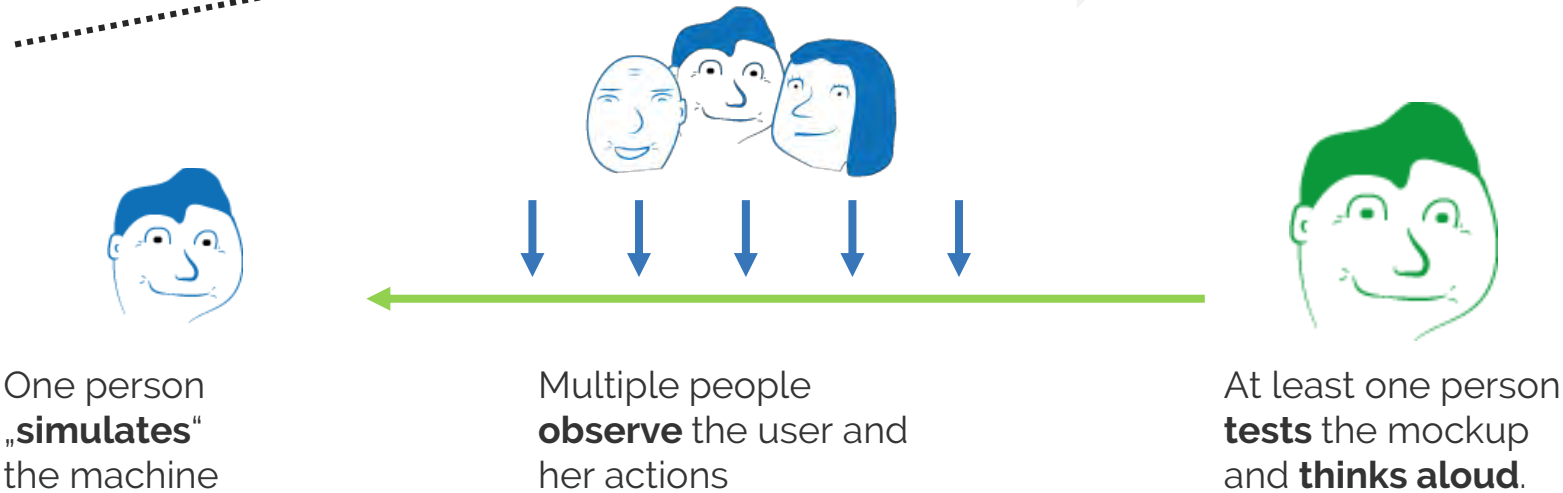


Decide which user tasks you'll test.

Prepare your mockups.

Do your usability test.

Example:  
<https://youtu.be/gwQkLthhHKA?t=1m35s>



One person „**simulates**“ the machine

Multiple people **observe** the user and her actions

At least one person **tests** the mockup and **thinks aloud**.

Snyder, Carolyn. *Paper prototyping: The fast and easy way to design and refine user interfaces*. Newnes, 2003.  
Nielsen, Jakob. *Designing web usability: The practice of simplicity*. New Riders Publishing, 1999.

# Minimum Viable Product

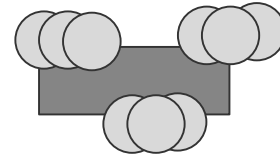
## Paper Prototype

Create an iOS app to capture and circulate notes from scientific conferences



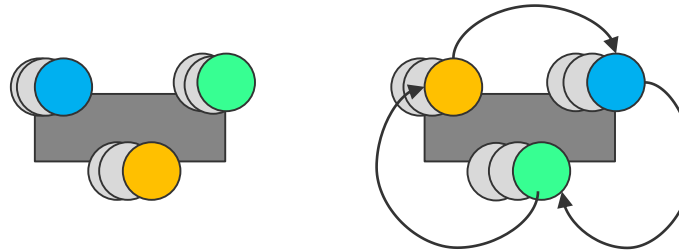
1

Form groups of 2 or 3 and develop an app (10 Minutes)



2

1 Person is a demonstrator  
1 Person is documentor  
1 Person is a tester  
(5 Minuten)

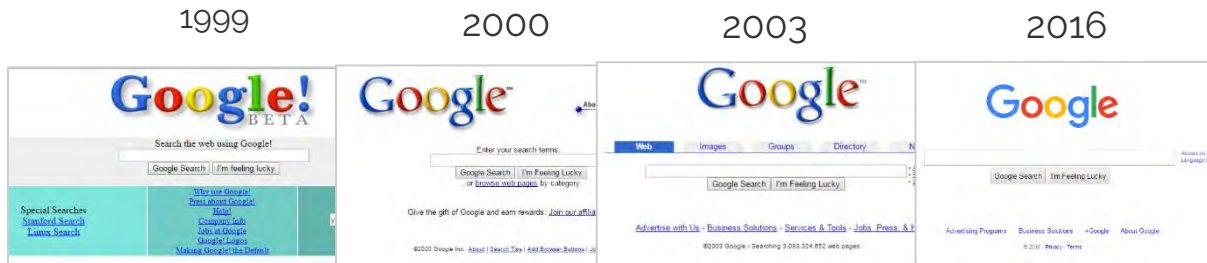


Snyder, Carolyn. *Paper prototyping: The fast and easy way to design and refine user interfaces*. Newnes, 2003.  
Nielsen, Jakob. *Designing web usability: The practice of simplicity*. New Riders Publishing, 1999.

# Minimum Viable Product

## Product Prototype

Common practice for building information systems (Software).



Information systems (Hardware)



Siehe Interview with Nicholas Woodman (CEO GoPro)  
<https://www.youtube.com/watch?v=Gd-k-395KtA>



Images: Screenshots from google.com and web.archive.org; GoPro; Forbes.com

# Minimum Viable Product

Product Prototype / Service Prototype

Alternative practice for prototyping your service.



... explore your customer group,  
location, and recipe.



Image: <http://www.eventinc.de/info/food-truck-berlin/>;  
see also <http://www.woopwoopicecream.de/>




# Summing up with the Dropbox Story

Using MVPs within the Lean Startup Cycle

**Initial core domain:**  
(IT-based) startups  
(meanwhile also been seen  
in big companies of all kind)

**Lean  
Startup  
Cycle**



```

    graph TD
      Ideas((Ideas)) --> Build((Build))
      Build --> Product((Product))
      Product --> Measure((Measure))
      Measure --> Data((Data))
      Data --> Learn((Learn))
      Learn --> Ideas
  
```

**Prototypical Procedure:**  
*„learn early, learn often“*  
(adaptation from „release early, release often“)

Ref.: Ries (2011), Maurya (2012), Blank (2013), <http://theleanstartup.com/casestudies>, Drew Houston (2010, [Link](#))

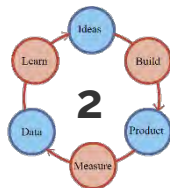
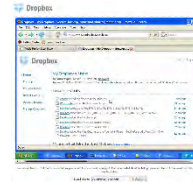
# Summing up with the Dropbox Story

## Using MVPs within the Lean Startup Cycle

### Case: Dropbox is Software as a Service

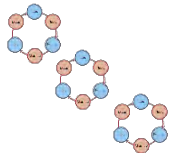


**2007** „Throw away your USB drive“  
1st Video MVP + Call to Action  
(3 minutes screencast on Hacker News)



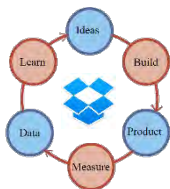
**2008** Private Beta Launch  
2nd Video MVP + Landing Page  
Early Adopters (Waiting List leapt from 5k to 75k within a day)

„Put something in users hands and get real feedback ASAP“



**2009** Landingpages  
multiple pages + SEO/SEM  
experiments

Typical happy customer  
„didn't realize [they] needed this“  
-> SEO/SEM



**2010** Version 1.0  
Freemium model with WoM  
Marketing (2.8 mio. „referral invites“ in 30 days)



Ref.: Ries (2011), Maurya (2012), Blank (2013), <http://theleanstartup.com/casestudies>, Drew Houston ( 2010, [Link](#))

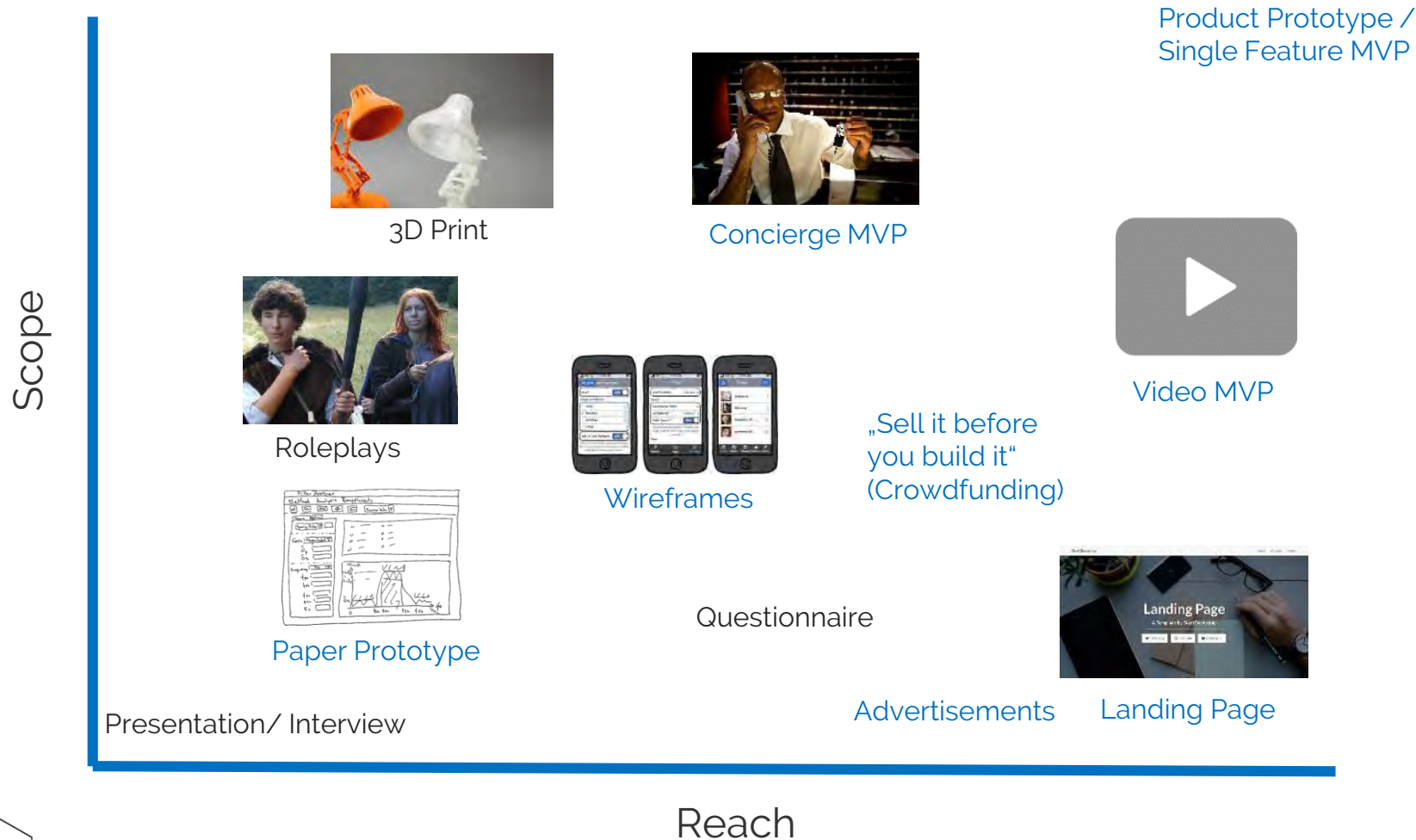


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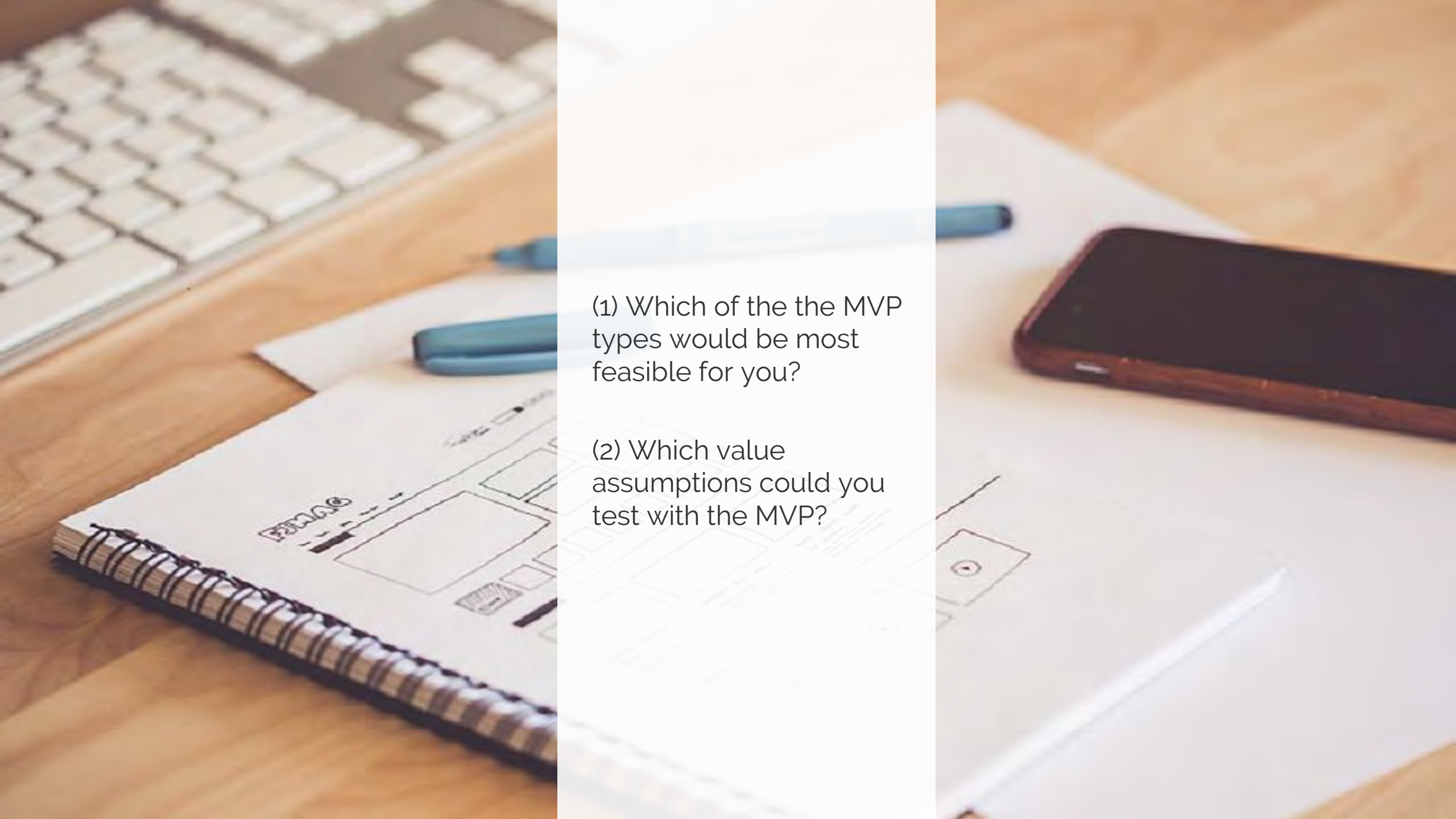


# Minimum Viable Product

## MVP Types



Ref. [Stefan Rook](#) (2012) and [Mathieu Garde](#) (2014), images (cc by sa) Efude 2007 | DeviantArt, Creative Tools 2012 | Flickr, Jorge Royan 2006 | Wikipedia,Shawan Zaln 2014 | Flickr



(1) Which of the the MVP types would be most feasible for you?

(2) Which value assumptions could you test with the MVP?





# Am I riding a **dead horse?**



Upside down Horse by David Cerny | Flickr Abi Skipp 2008 cc by | <https://www.flickr.com/photos/9557815@N05/2775512699>

# Typically we are asked for the *Break-even Point*

When will we break even (wins == losses)

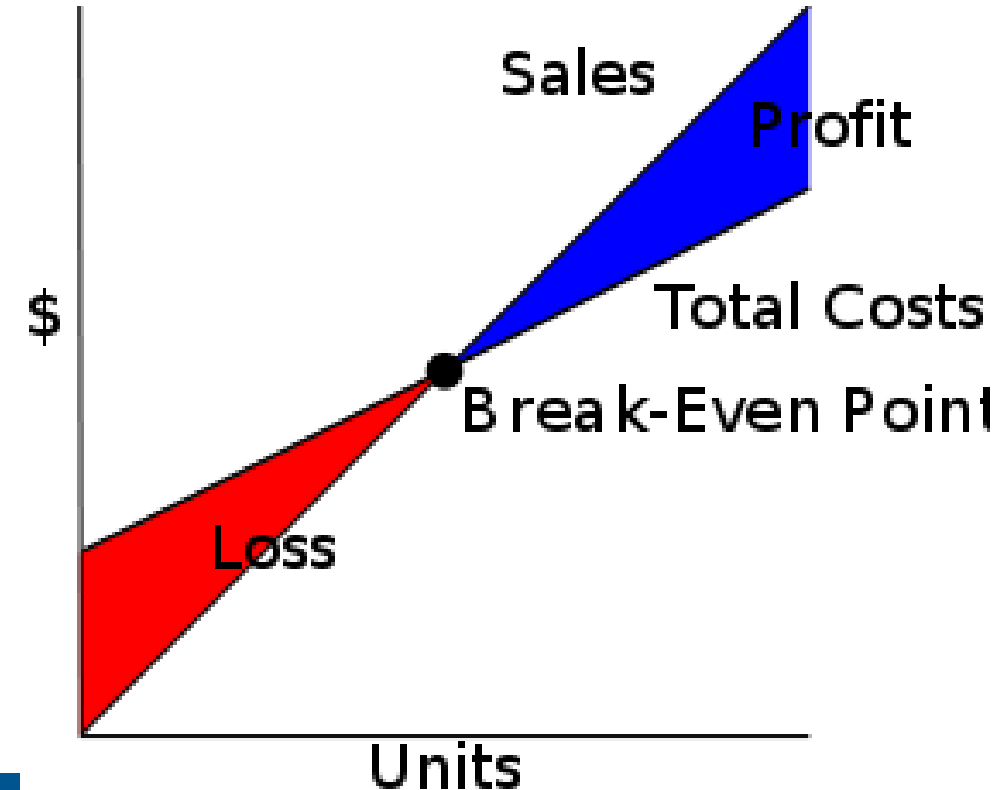
*Total Revenue = Total Costs*

$$R_x = C_f + C_v$$

$$x * p = C_f + c_v * x$$

R: revenue  
 C<sub>f</sub>: fixed costs  
 C<sub>v</sub>: variable costs

x: units  
 p: price  
 c<sub>v</sub>: costs per unit



Which cost types are regularly most important for highly scalable business models?

# Variable costs + revenues for entrepreneurs

Understanding the customer funnel

**Acquisition:** User gets in contact with product/service

**Activation:** User successfully interacts for the first time with product/service

**Retention:** User comes back

**Referral:** User talks about product/service

**Revenue:** User initiates a cash flow



e.g., <http://blog.trak.io/growth-hacking-like-a-pirate-a-beginners-guide-to-pirate-metrics/>



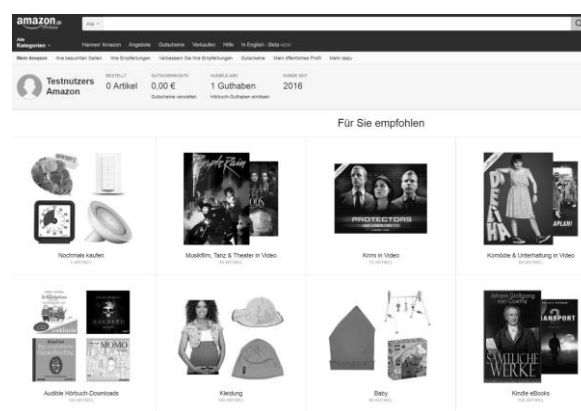
# Variable costs + revenues for entrepreneurs

## Understanding the customer funnel

### Attract



### Sell



### Support / Resell

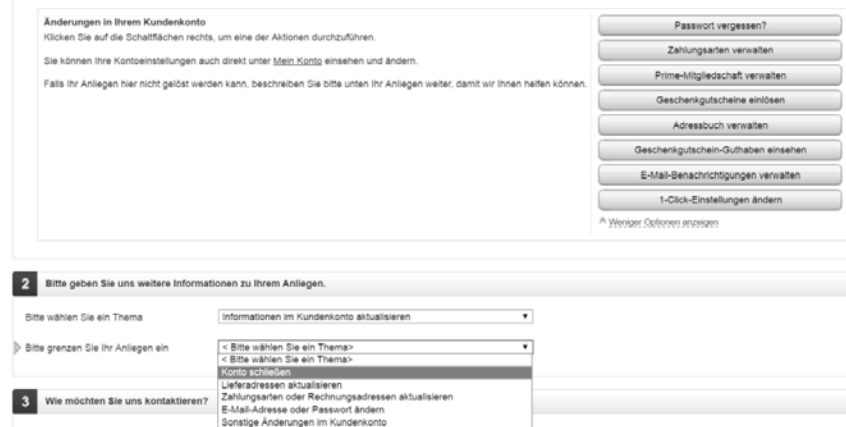
Summe (1 Artikel): EUR 19,99

Zur Kasse gehen

Eine 1-Click®-Bestellung ist für mindestens einen Artikel in Ihrer Bestellung nicht möglich.



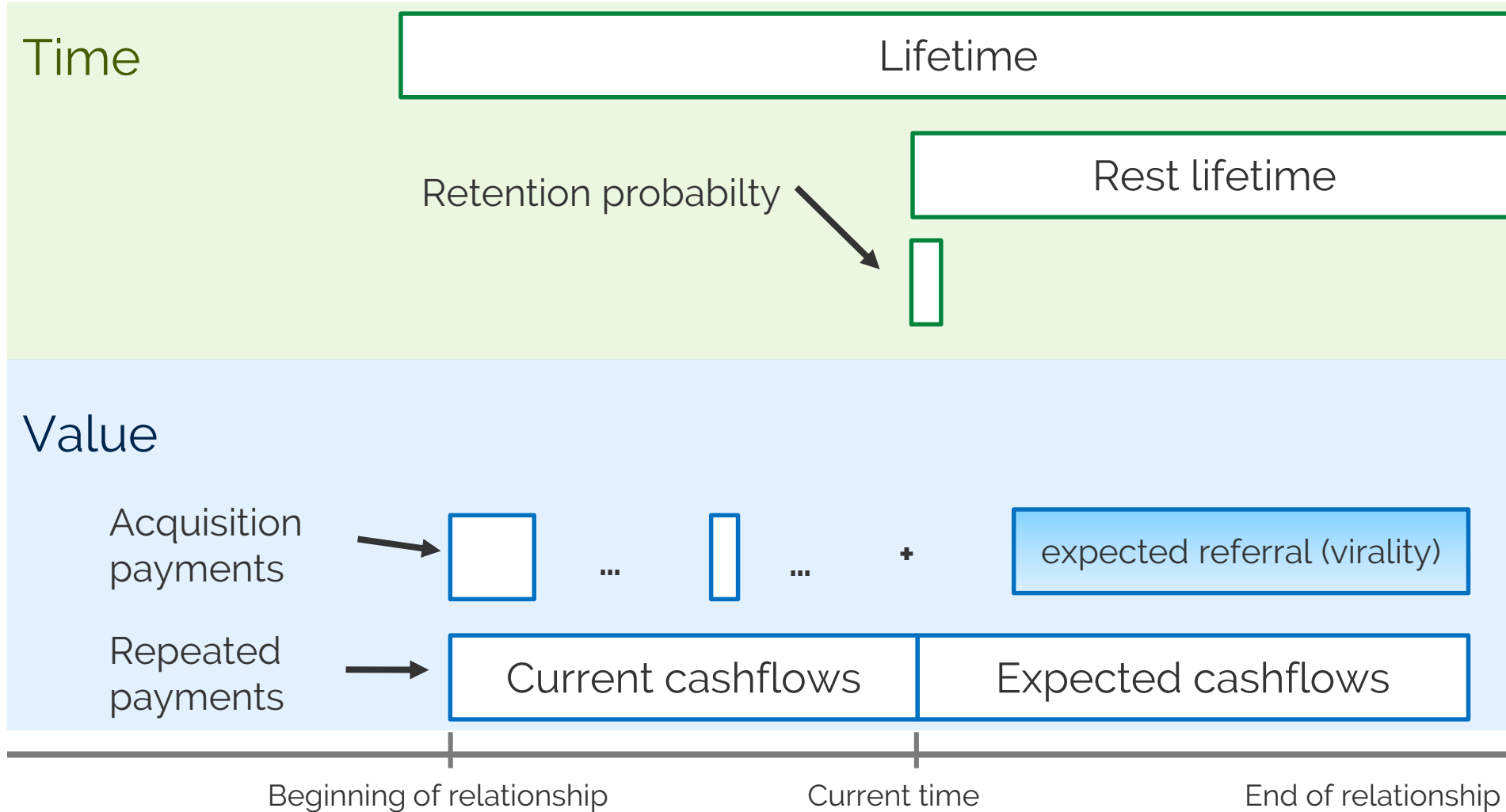
### Loss





# Variable costs + revenues for entrepreneurs

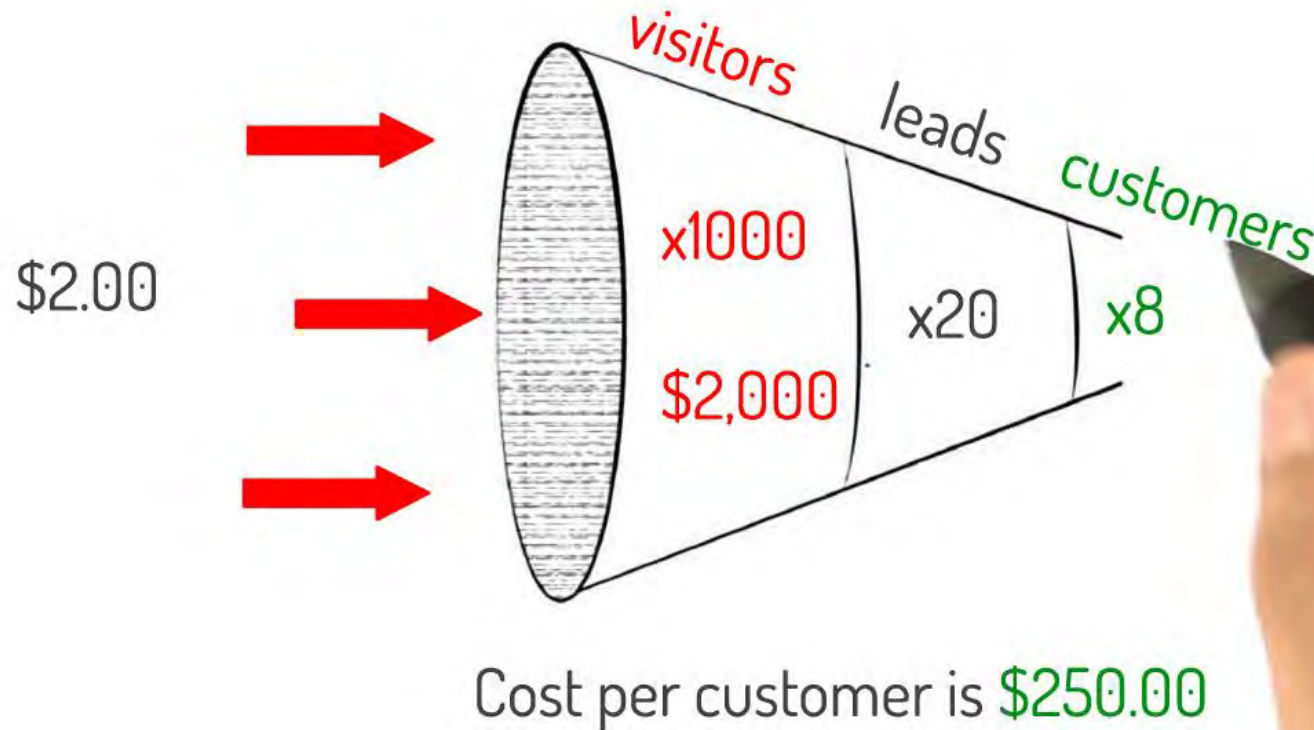
Customer lifetime value



Ref. Bruhn, M.; Georgi, D.; Schusser, S. (2004): Einsatz des Customer Lifetime Value (CLV) im Commitmentgeschäft. In: Management von CRM-Projekten. Handlungsempfehlungen und Branchenkonzepte, Wiesbaden, S. 438.

# Variable costs + revenues for entrepreneurs

Diving into customer acquisition costs



How about your customers?  
 (lets compare selling to business with selling to consumers)

## Some Additional Readings

Blank, Steve. "Why the lean start-up changes everything." *Harvard Business Review* 91.5 (2013): 63-72.

Croll, Alistair, and Benjamin Yoskovitz. *Lean Analytics: Use Data to Build a Better Startup Faster.* " O'Reilly Media, Inc.", 2013.

Magretta, J. "Why business models matter." *Harvard business review* 80.5 (2002): 86.

Maurya, Ash. *Running Lean: Iterate from Plan A to a Plan That Works.* " O'Reilly Media, Inc.", 2012.

Ries, Eric. *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses.* Random House LLC, 2011.

## Some videos on the topic



Lean Startup  
(Introduction)



Value and Value  
Proposition



What is a "business  
model"?

# Images

- Team (cc-by); <http://www.marketingfacts.nl/berichten/innovatie-het-verschil-tussen-succes-en-faillissement>
- Building (cc-by); Lance Hancock from The Noun Project
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- Screenshot – amazon Webpage, <https://www.amazon.com> (2014-10-24)



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Thank you!

