



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 ORI, 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

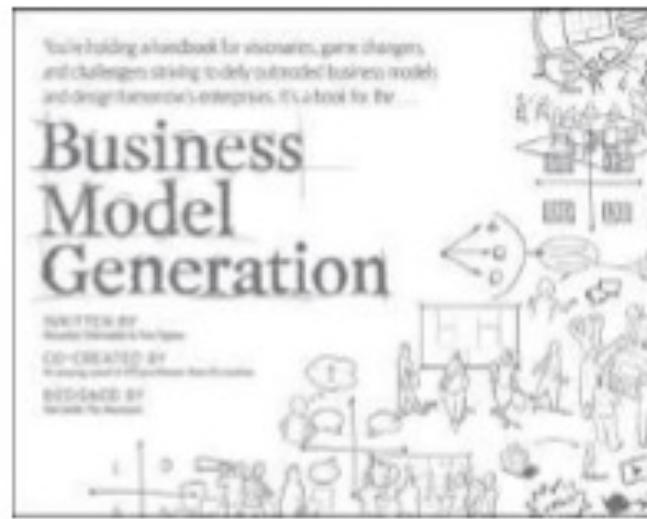
Successful Strategies
for Products that Win

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/>

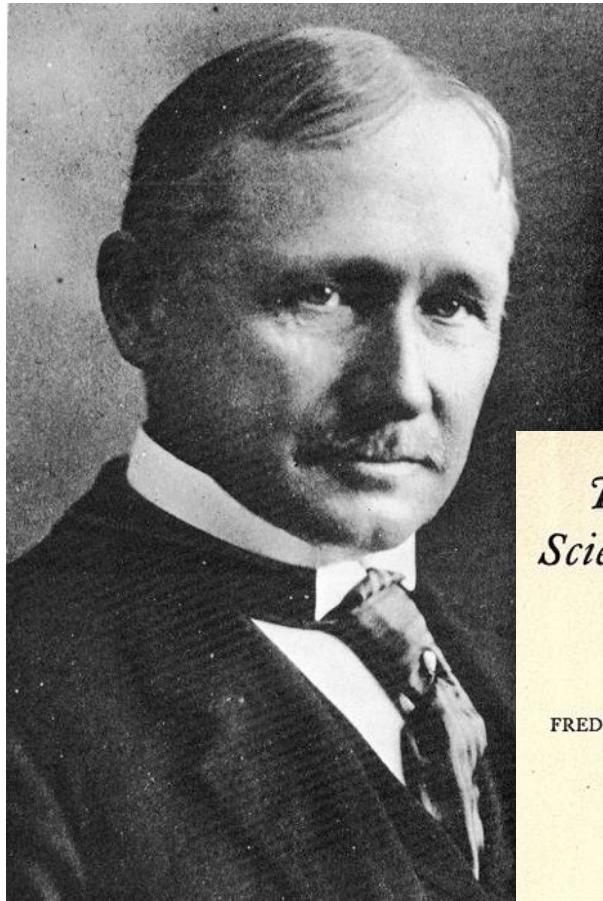
Today

- 1. Why we teach Innovation Methods this way**
- 2. Customer discovery 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

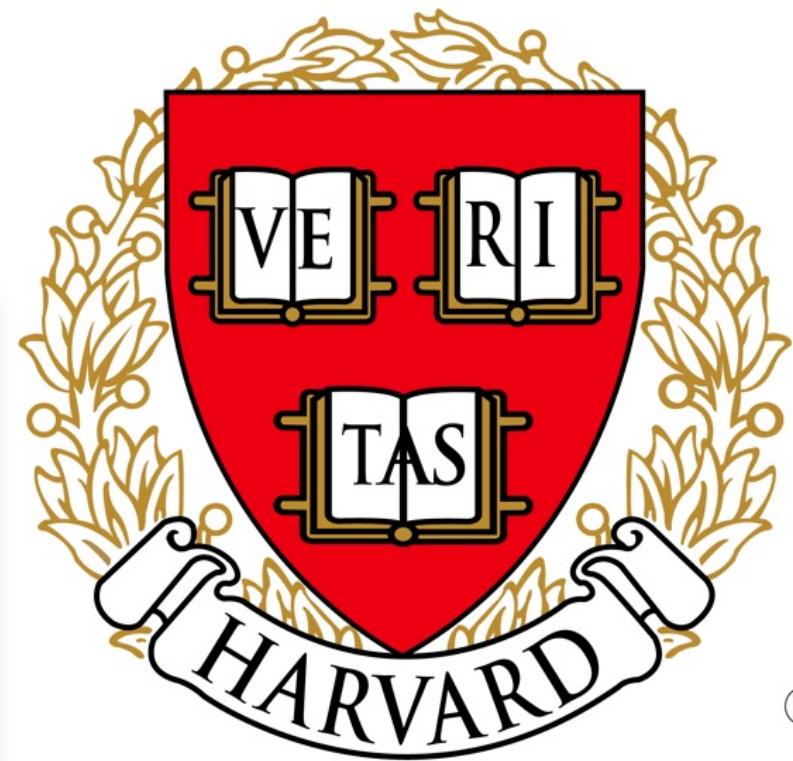


*The Principles of
Scientific Management*

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”

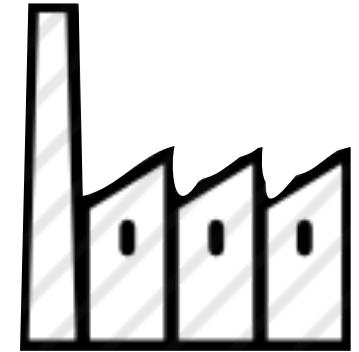
definition of “company”

**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

**What we know now
(and have known **all**
along)...**

Business Plans

are

FICTION

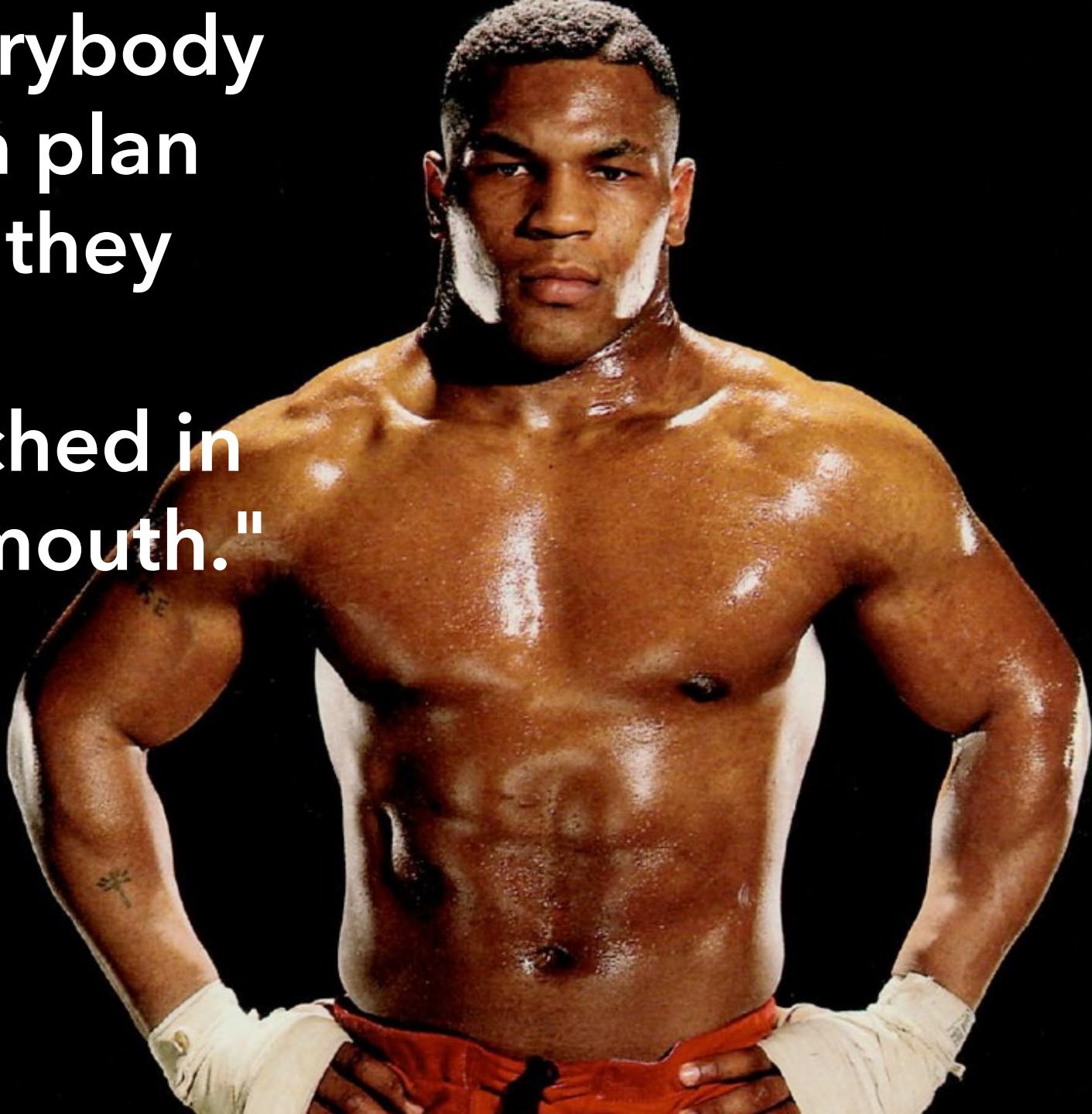
**“We always ask for them.
We never read them.”**

- KPCB



Tyson's Law

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



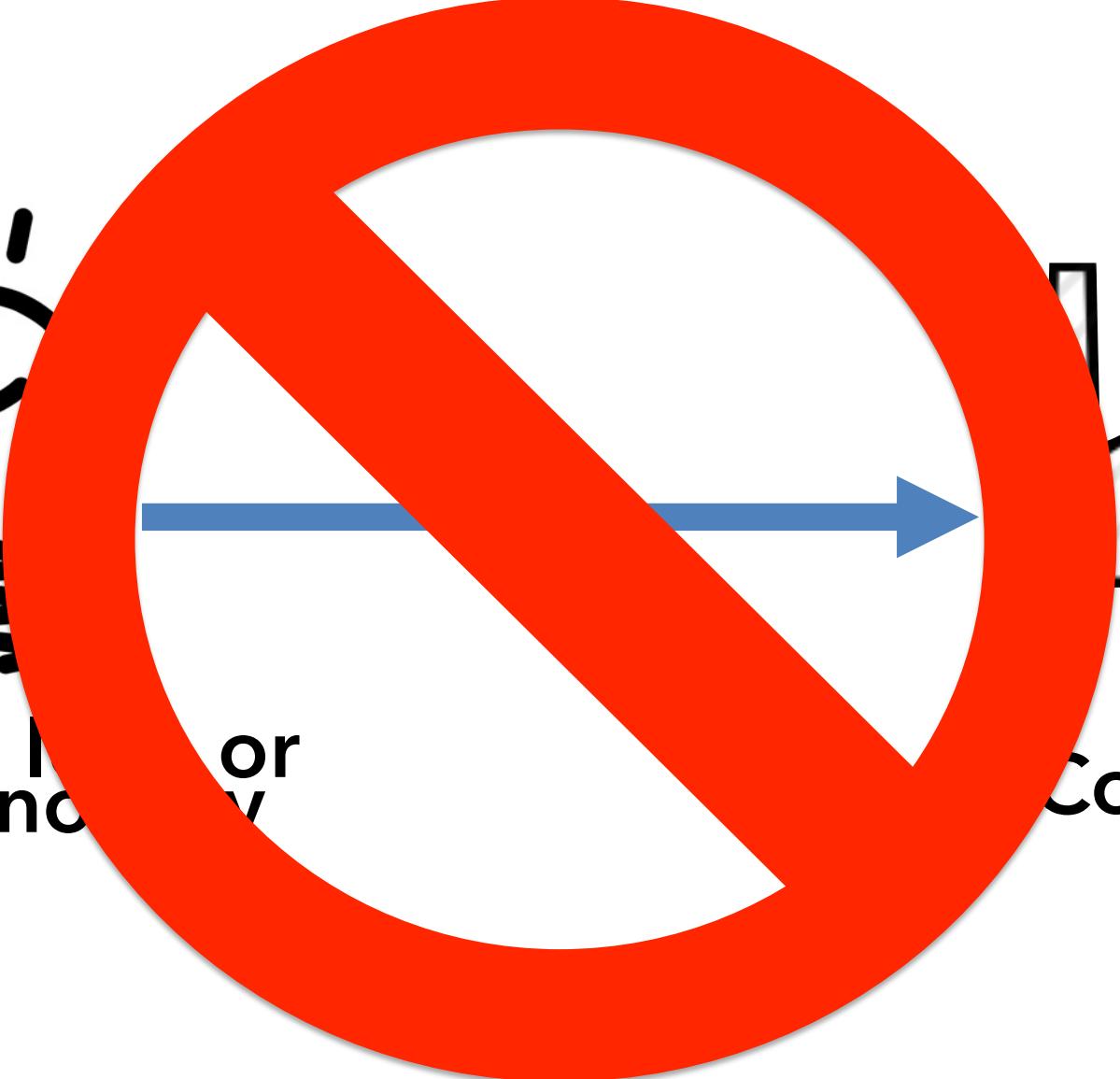
| A | B | C | D | E | G | H | I | J | K | L | M | N | |
|----------------------|--|---|---|---|---|---|---|---|---|----------|----------|----------|----------|
| Balance Sheet | | | | | | | | | | | | | |
| | | | | | | | | | | Year | | | |
| Assets | | | | | | | | | | 1999 | 2000 | 2001 | 2002 |
| | Cash 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 |

Five year forecast?

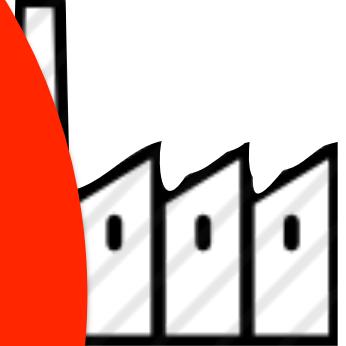
| A | B | C | D | E | G | H | I | J | K | L | M | N |
|--|---|---|---|---|---|---|---------|----------|----------|----------|----------|---|
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| Inventories* | | | | | | | \$1.73 | \$1.45 | \$6.75 | \$43.27 | | |
| Deferred income taxes* | | | | | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | | |
| Total current assets* | | | | | | | \$51.58 | \$63.14 | \$86.21 | \$98.21 | | |
| Fixed assets* | | | | | | | | | | | | |
| Less accumulated depreciation* | | | | | | | | \$98.72 | \$105.09 | \$112.40 | \$122.26 | |
| Goodwill* | | | | | | | \$21.12 | \$13.83 | \$19.02 | \$20.02 | | |
| Intangible assets* | | | | | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | | |
| Other assets* | | | | | | | \$0.00 | \$0.00 | \$0.00 | \$0.00 | | |
| Total assets | | | | | | | \$23.10 | \$80.00 | \$464.61 | \$577.23 | \$600.00 | |
| 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 | |
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Five year forecast?

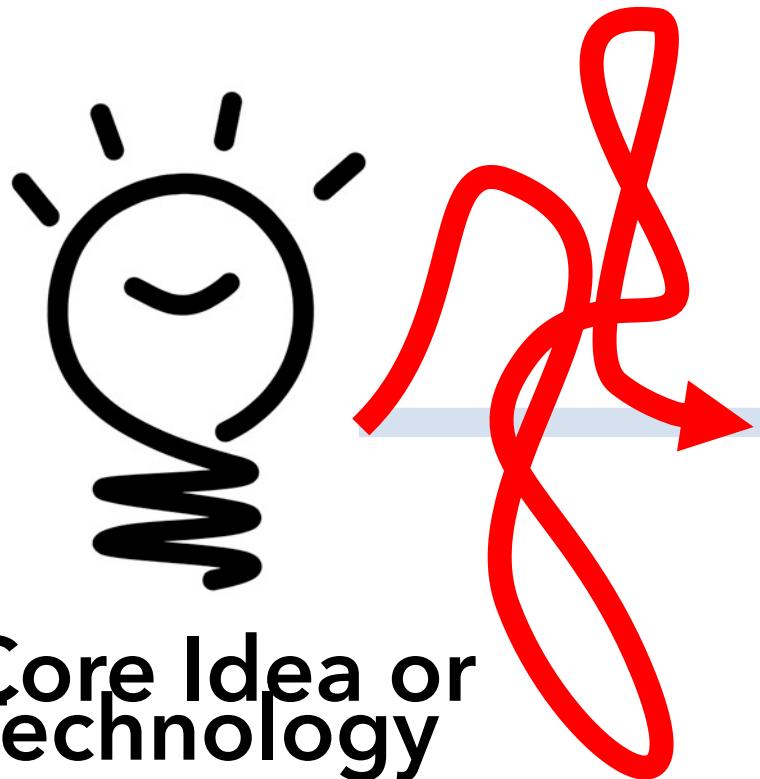
MAGICAL THINKING



Core
Technology



Company



**Core Idea or
Technology**

Company



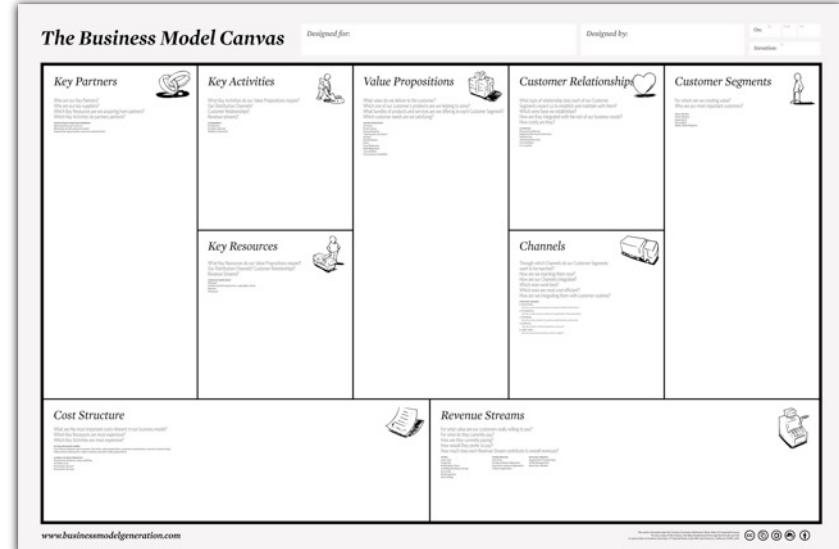
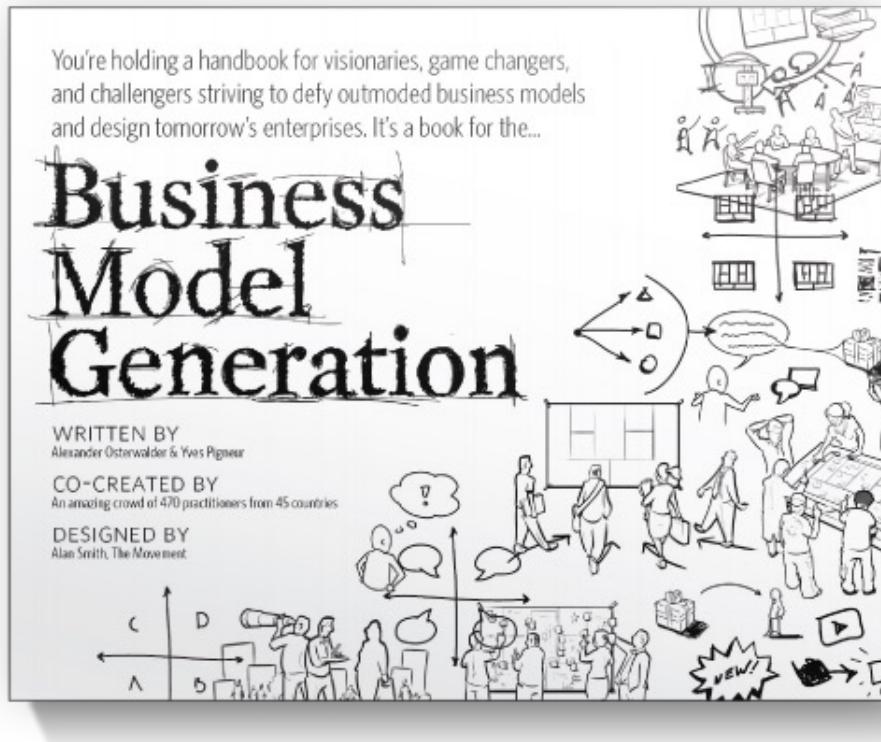
Core Idea or
Technology



Company

2010

Business Model Generation

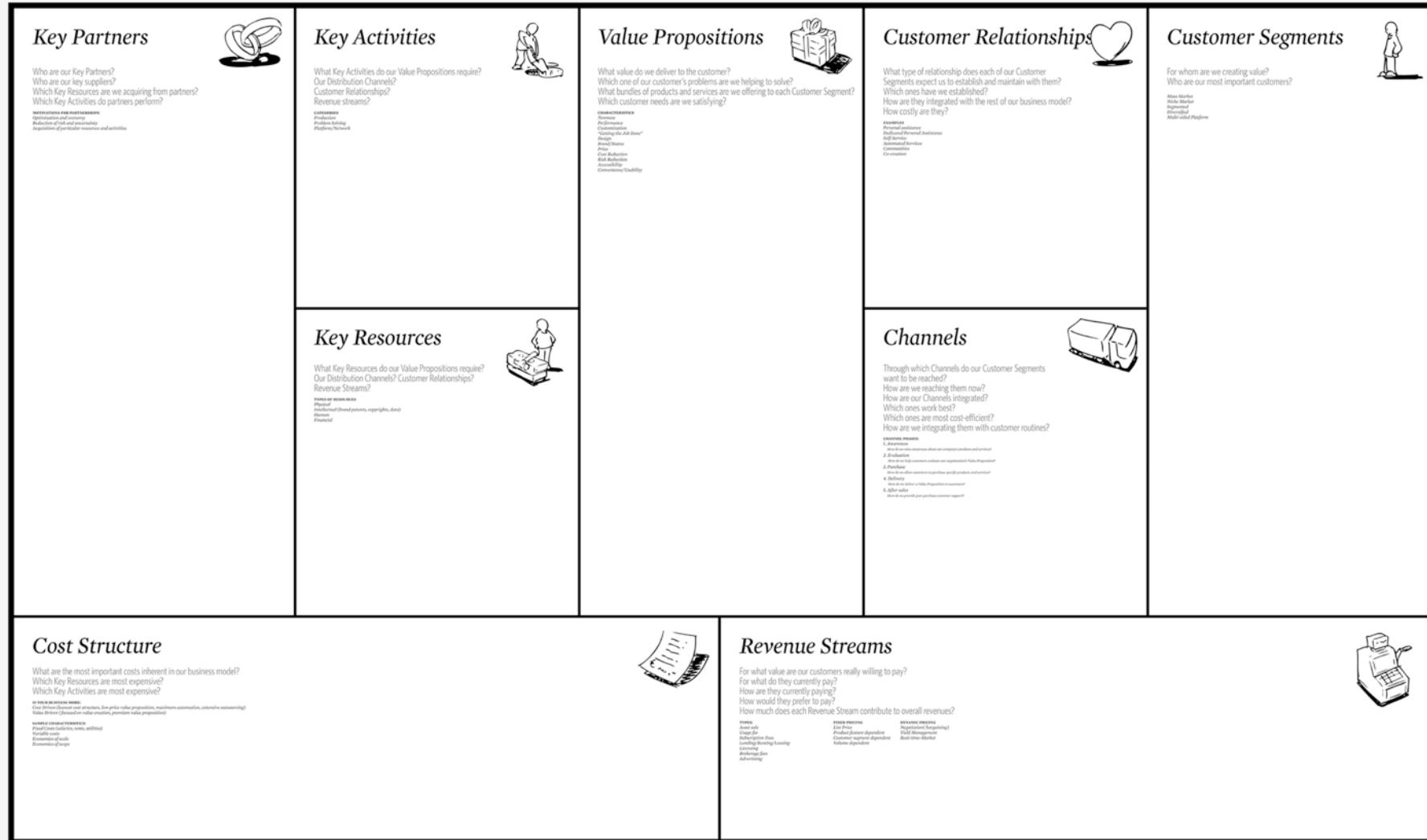


The Business Model Canvas

Designed for:

Designed by:

On: Day Month Year
Iteration: No.



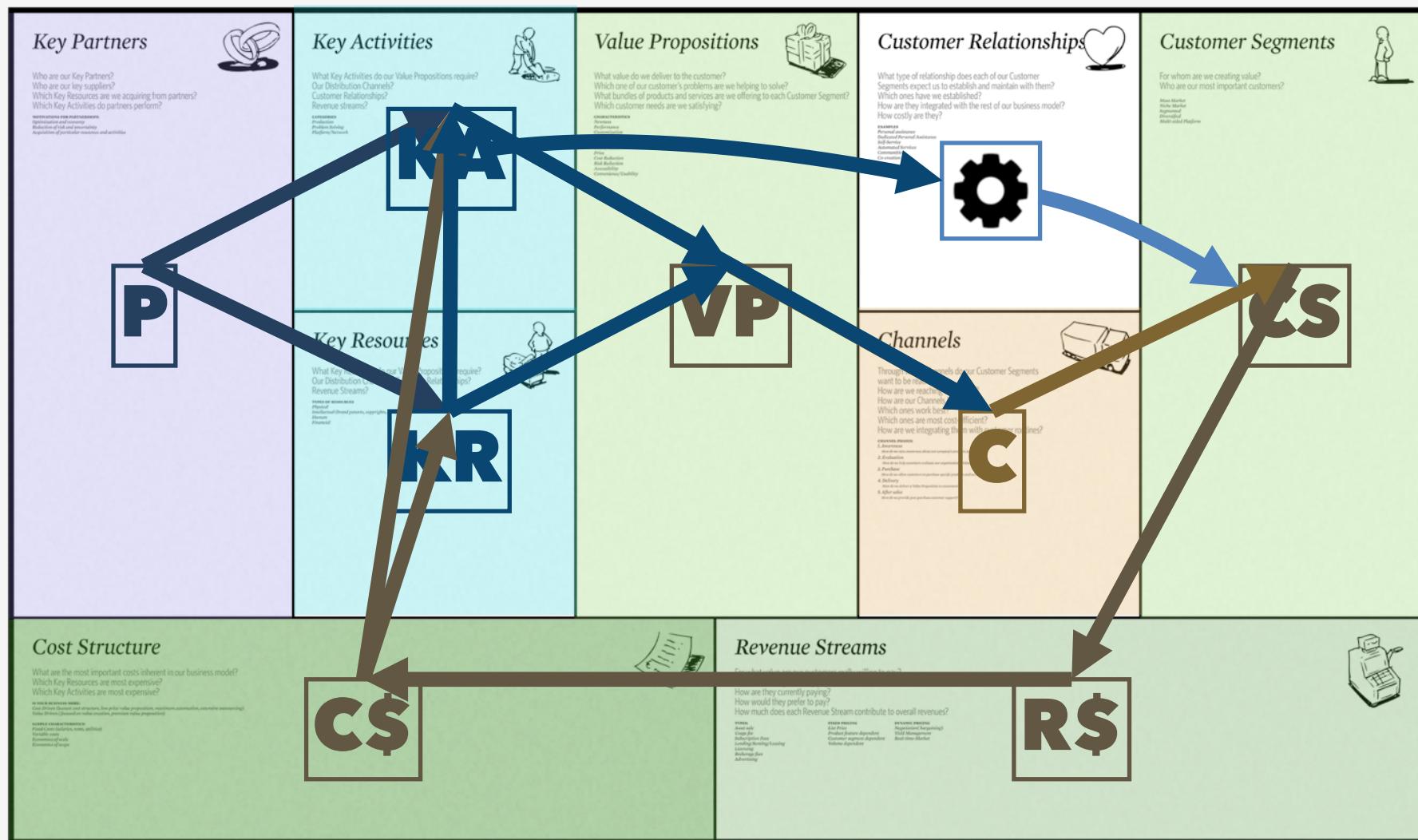
The Business Model Canvas

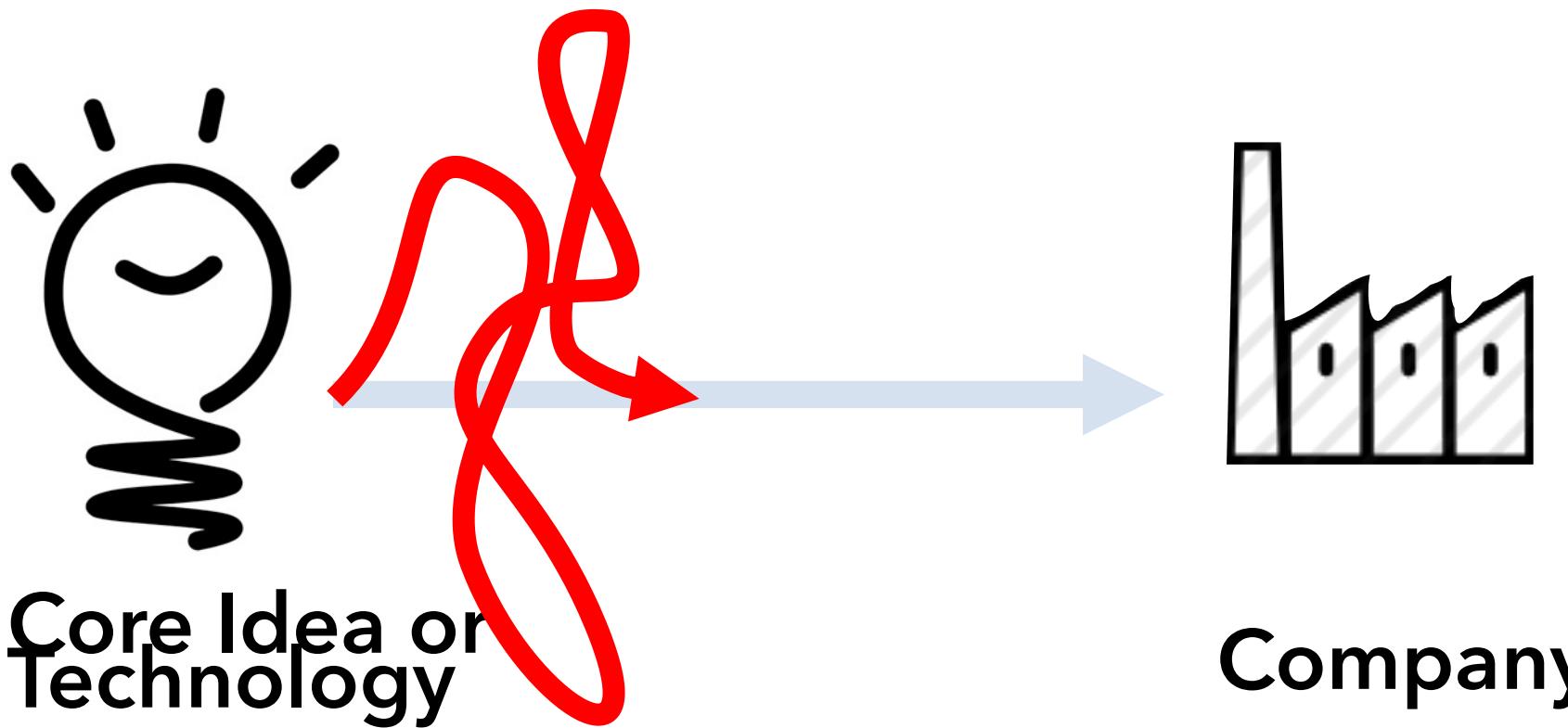
Designed for:

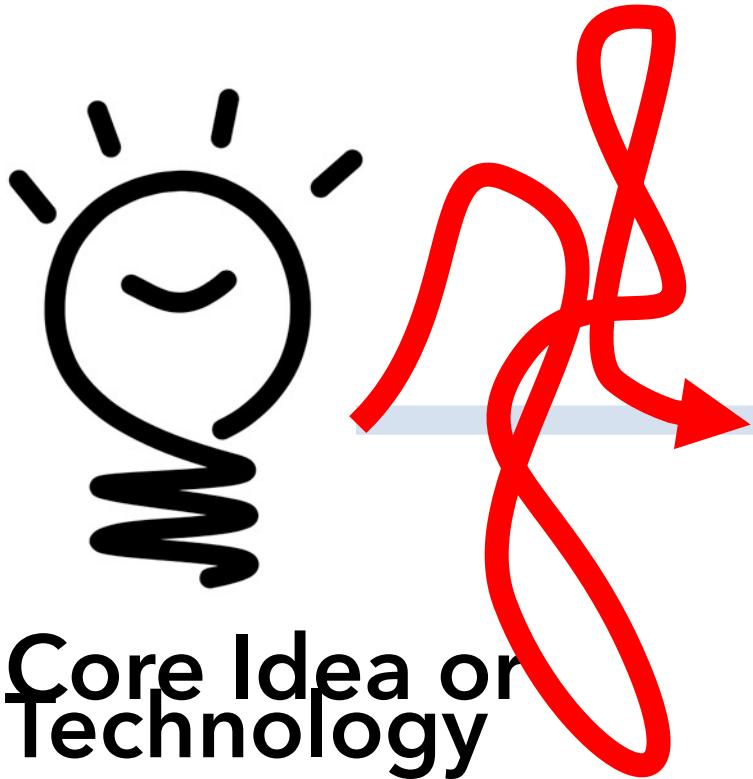
Designed by:

On: Day Month Year

Iteration: No



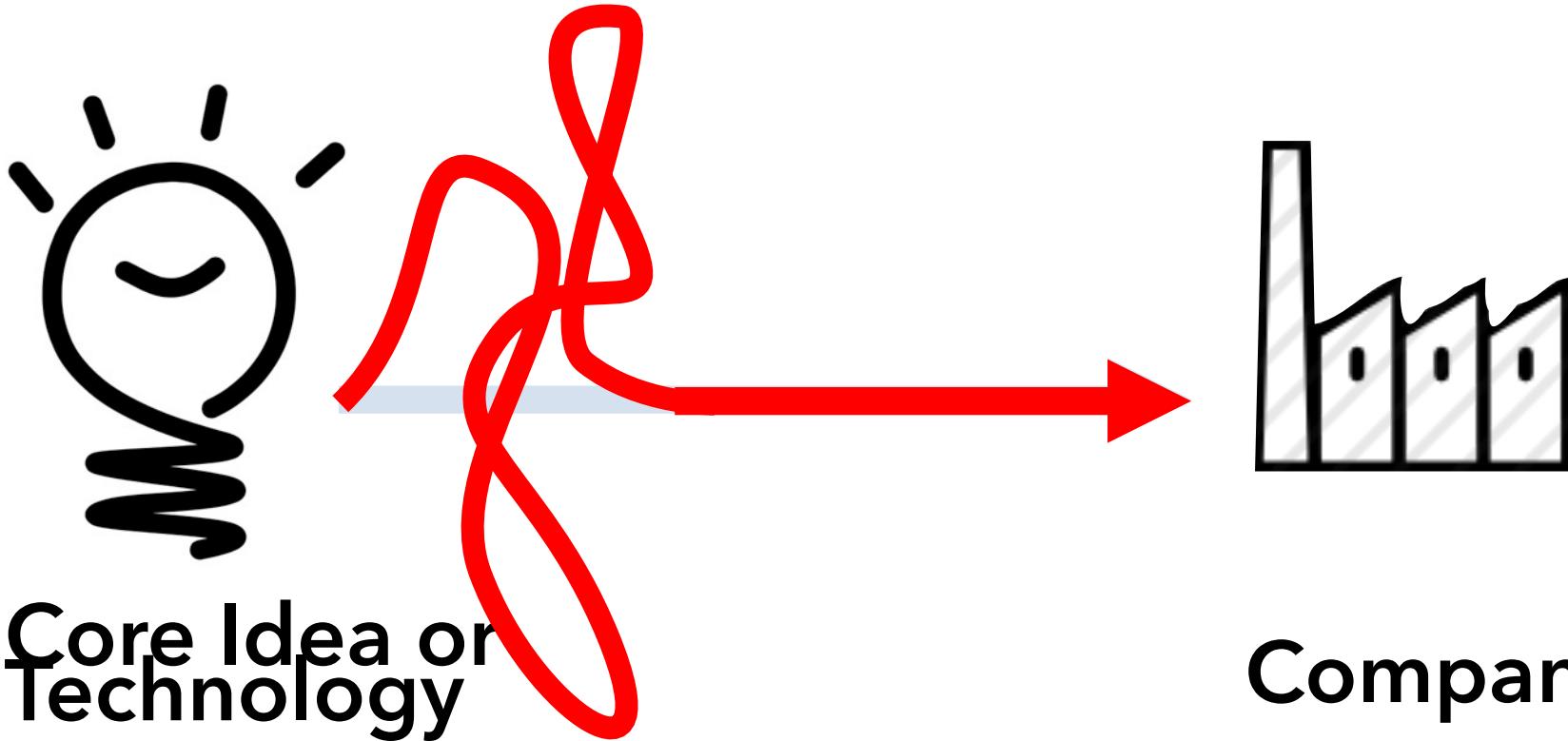




Core Idea or
Technology

Company





Core Idea or
Technology

Company

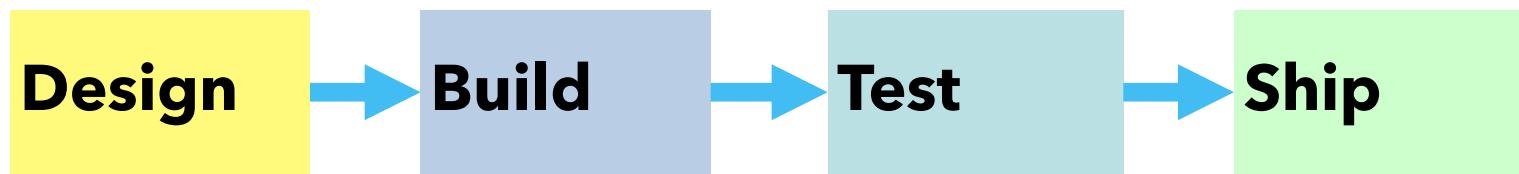


**We were wrong about
what a startup does**

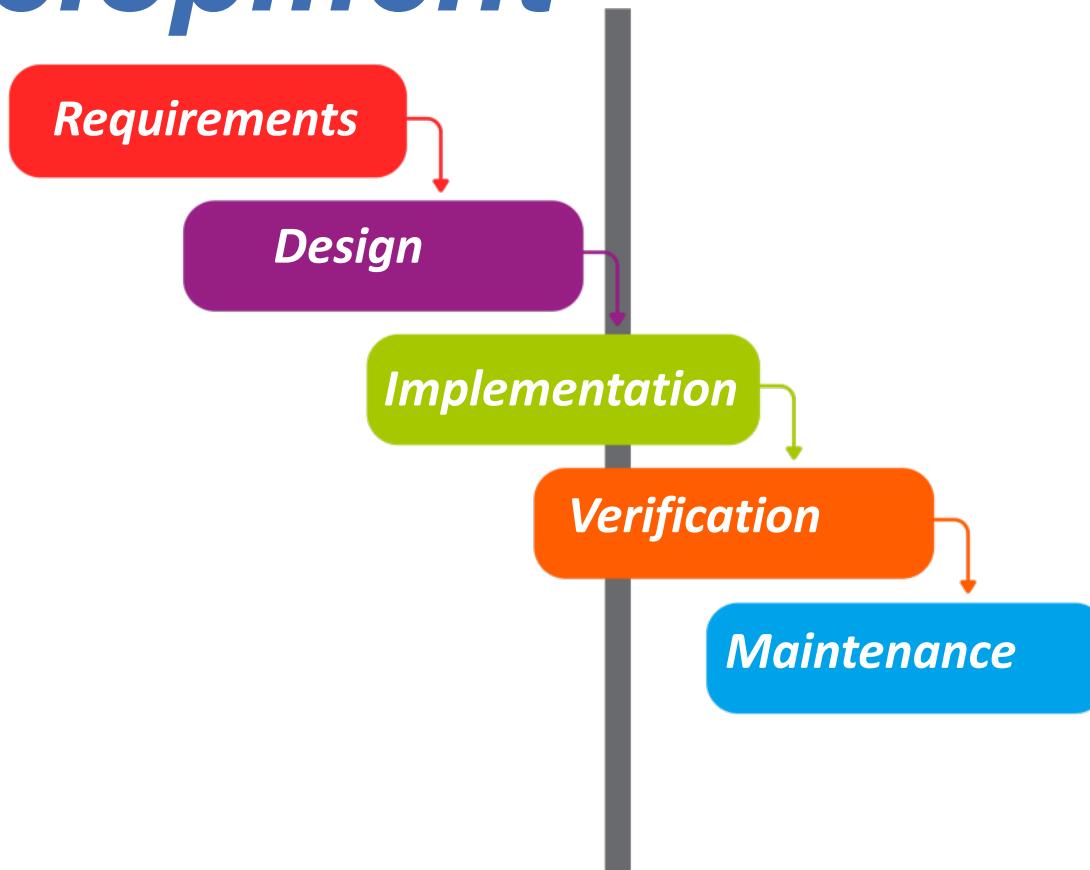
Design & Build Product

Go To Market

Product Introduction Model

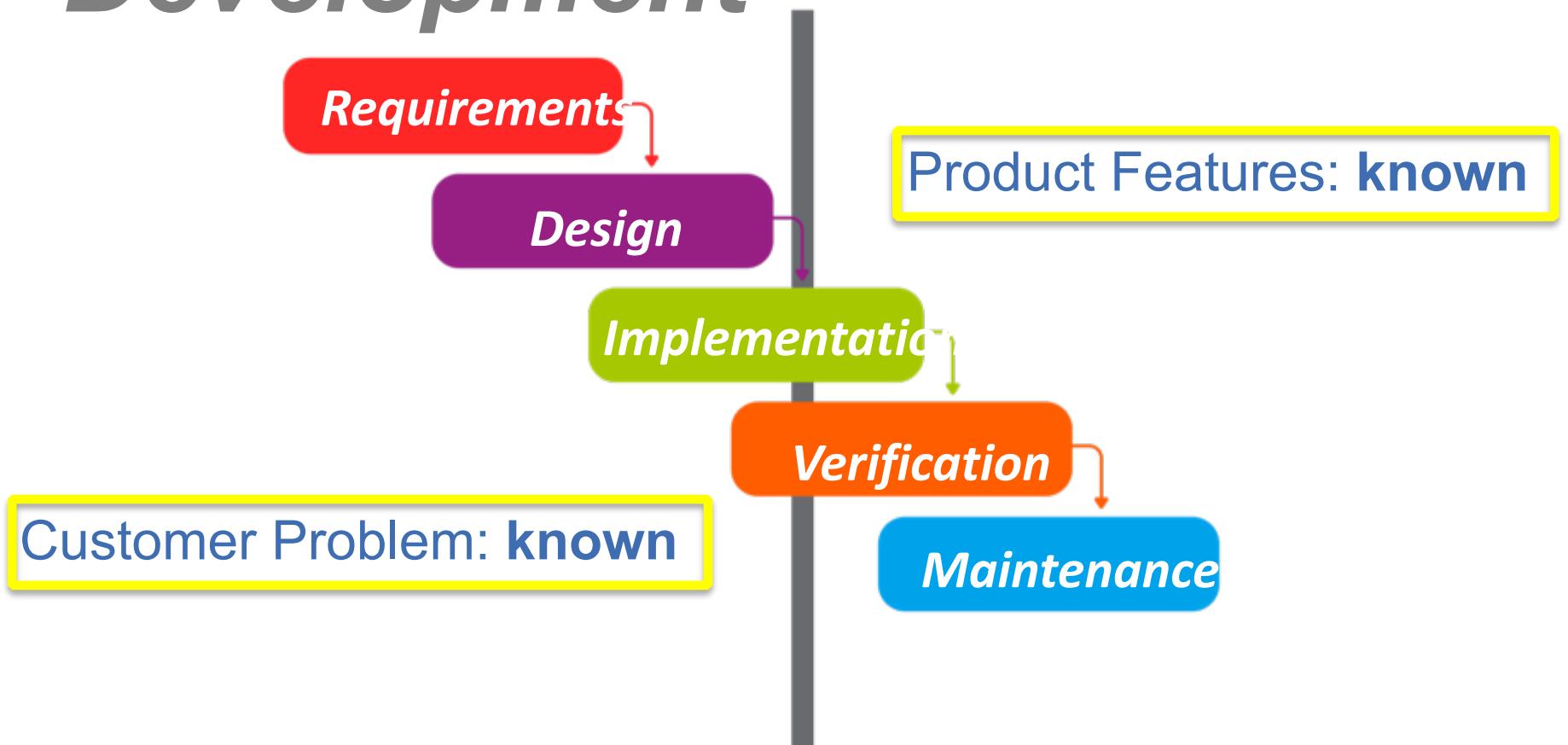


Software Waterfall Development



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

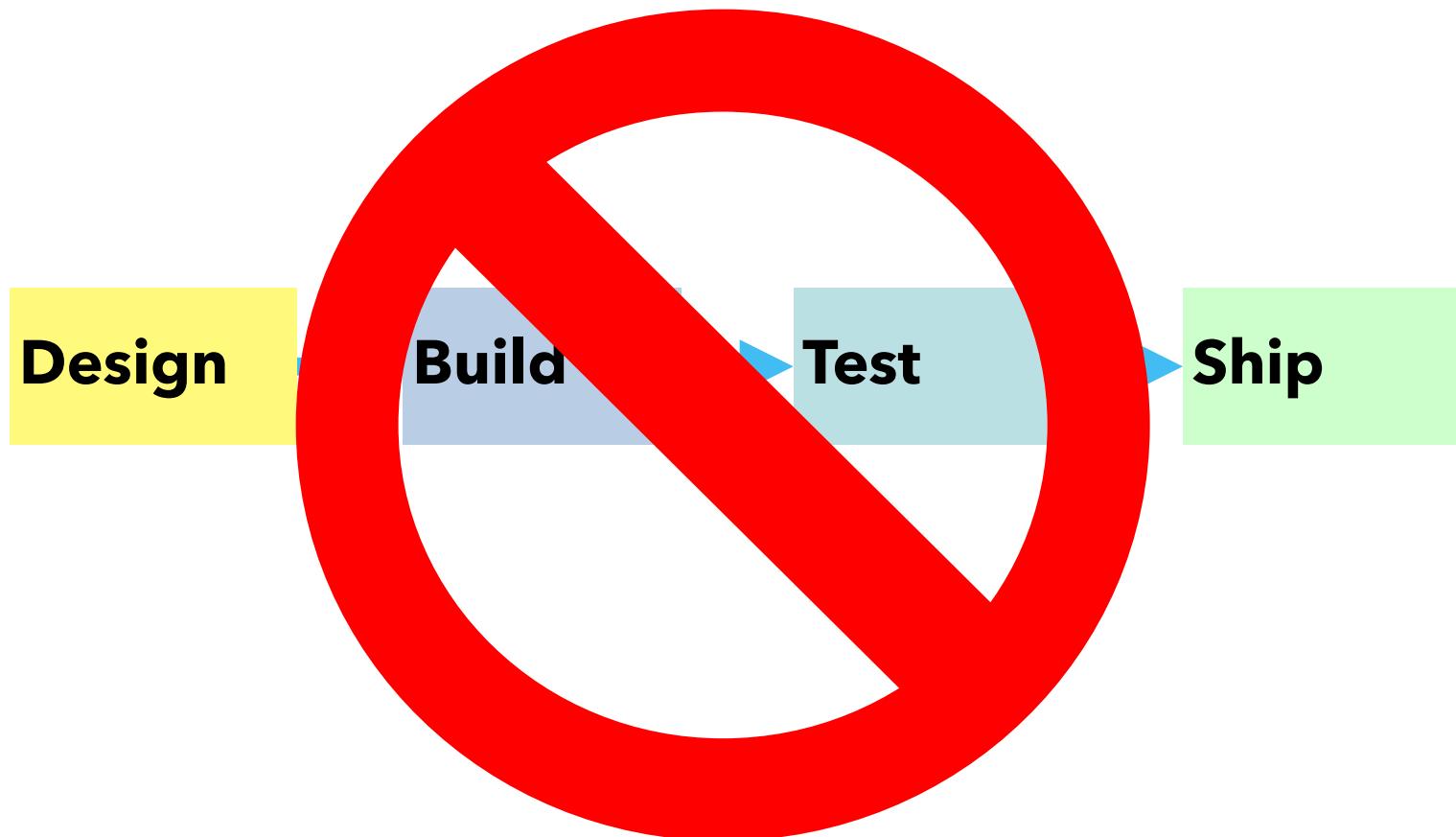
Software Waterfall Development



Source: Eric Ries

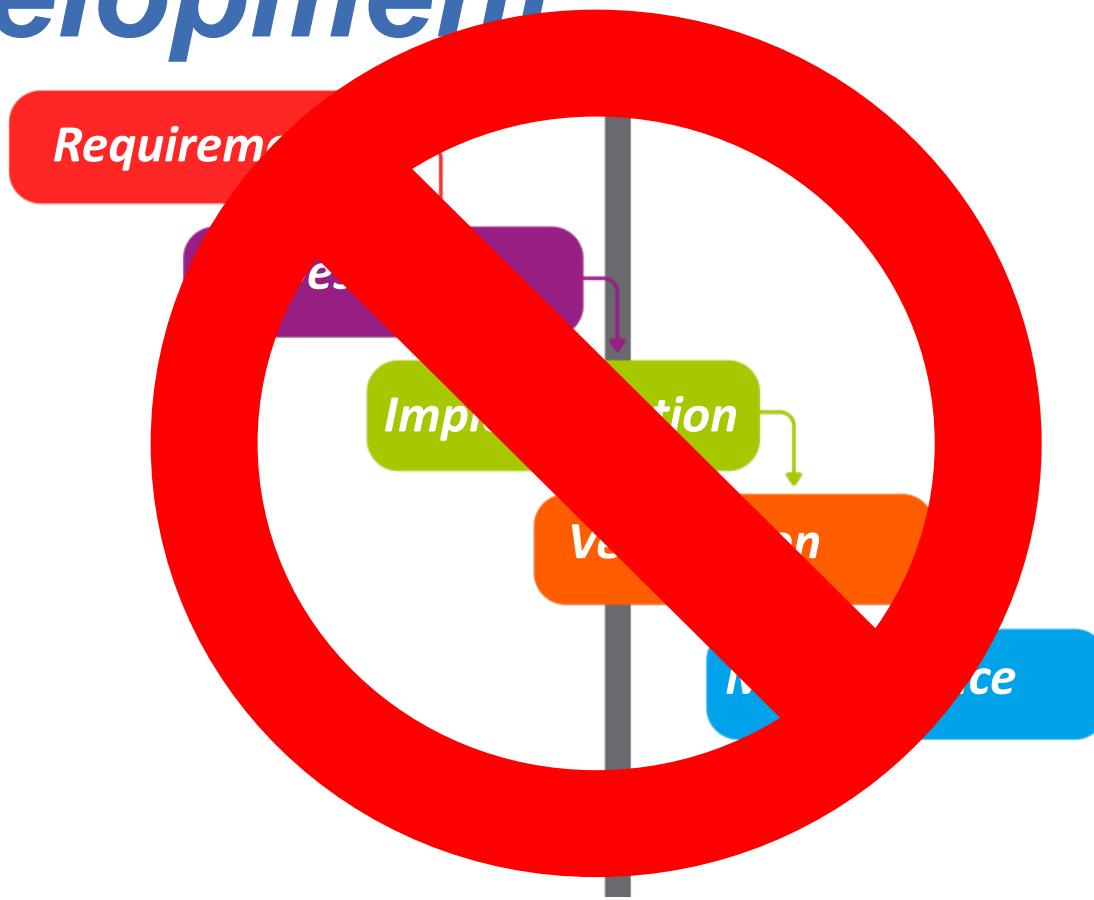
<http://startuplessonslearned.blogspot.com>

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



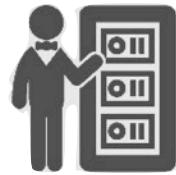
4. Derivative Idea



5. Obstinacy



6. Hiring Bad Programmers



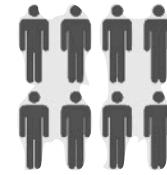
7. Choosing the Wrong Platform



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>

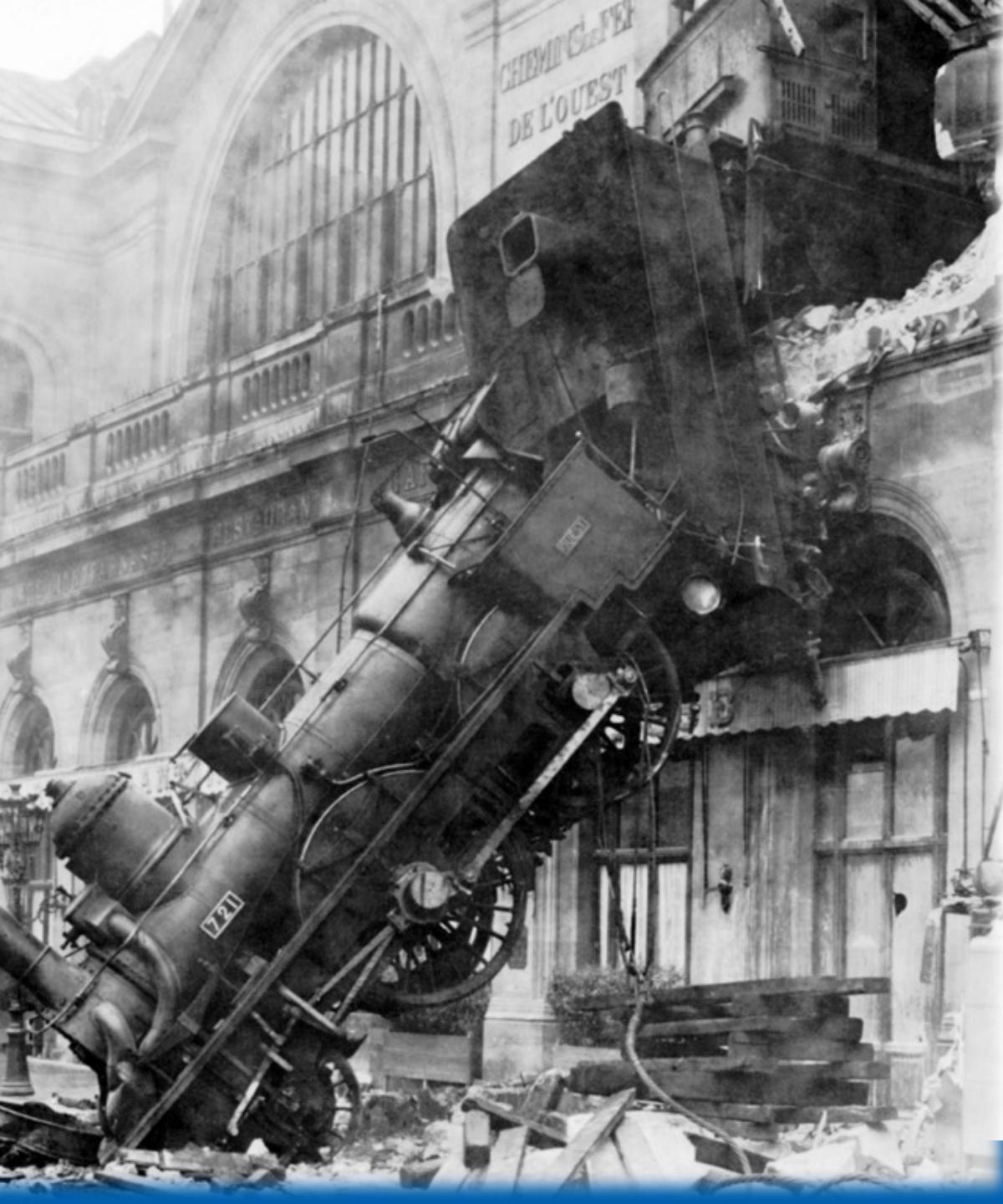
visualized by
Mark Vital

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

etc.

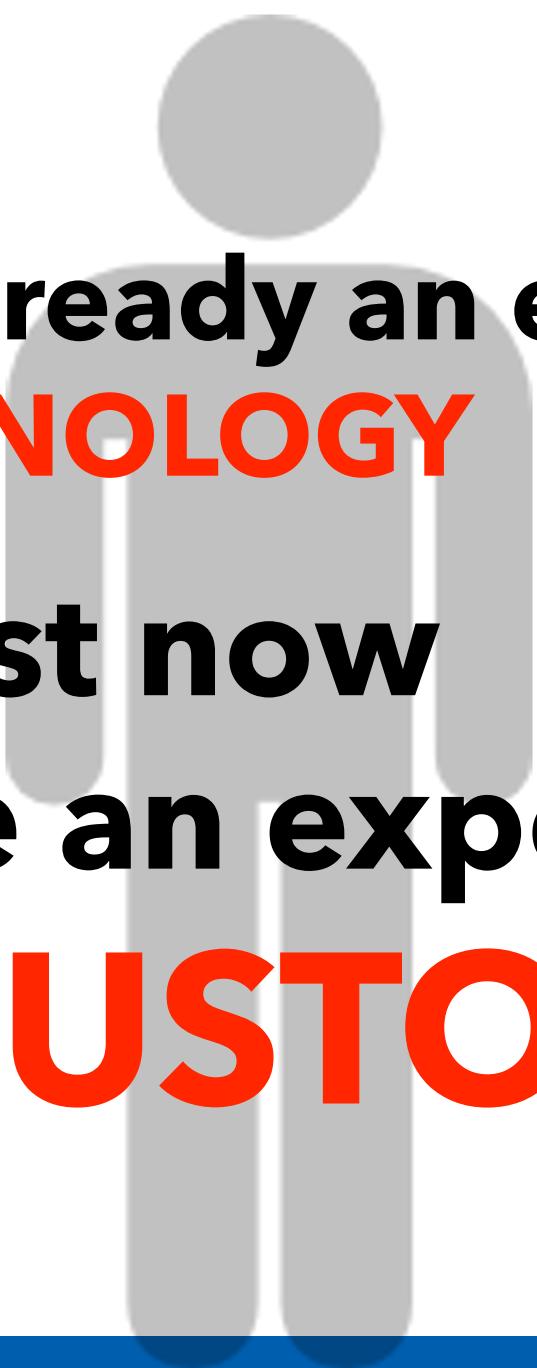
TOP 10 STARTUP MISTAKES





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

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

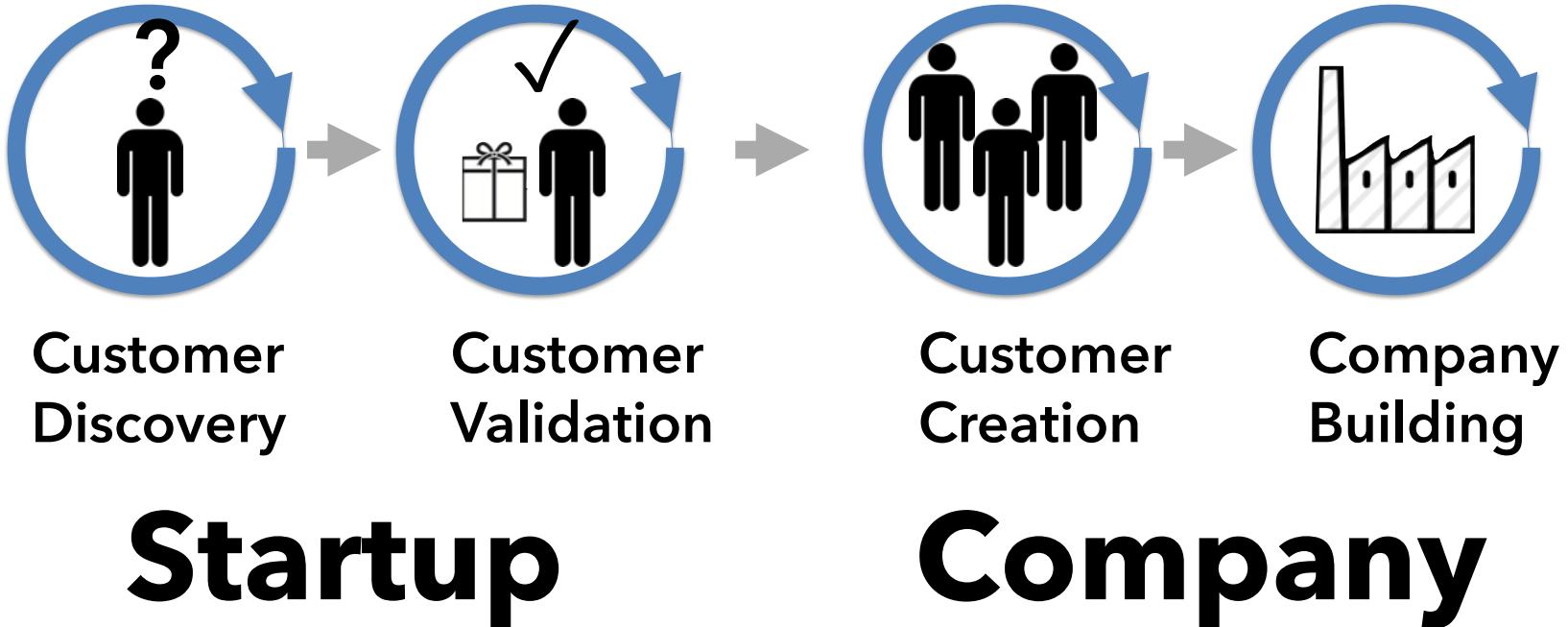
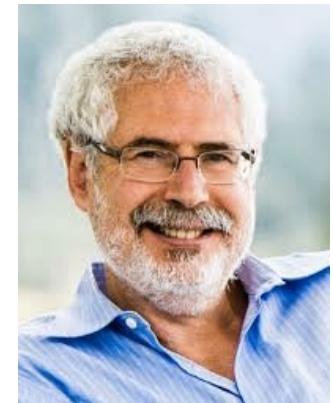


**You are already an expert in
the TECHNOLOGY**

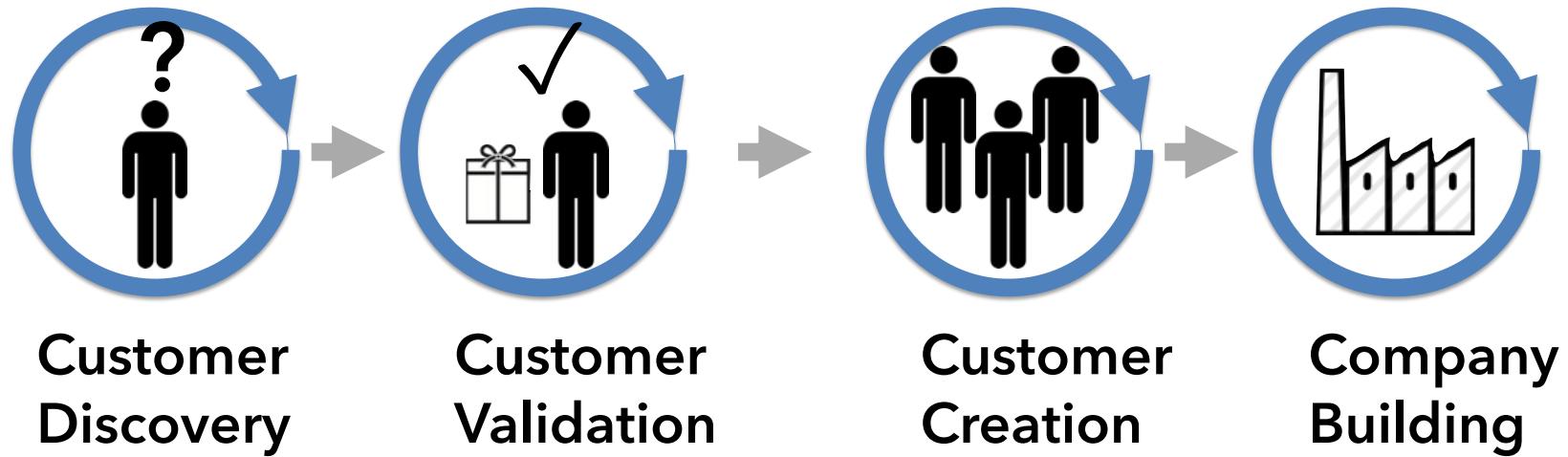
**You must now
become an expert in
the CUSTOMER**

Customer Development

Steve Blank



the transformation

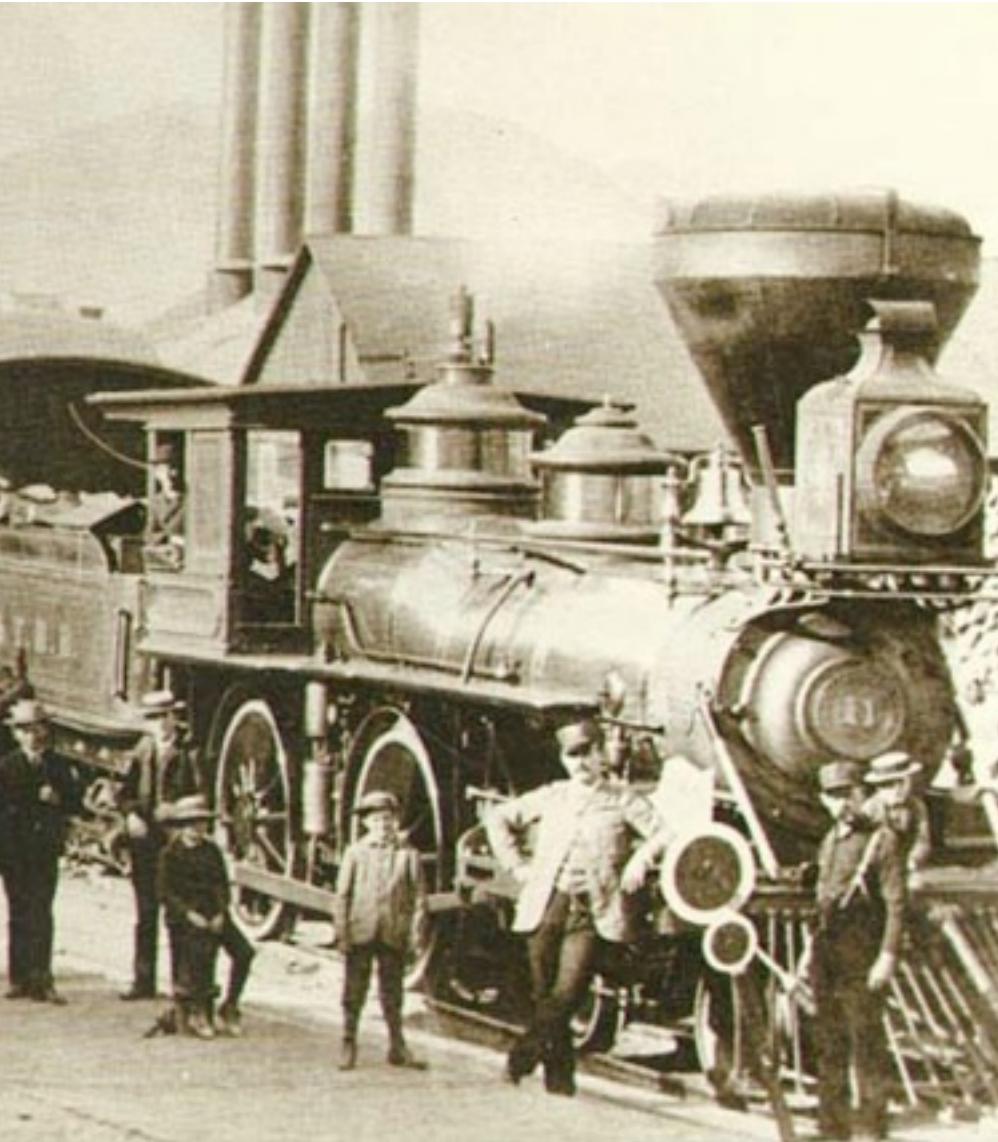


Startups
Search

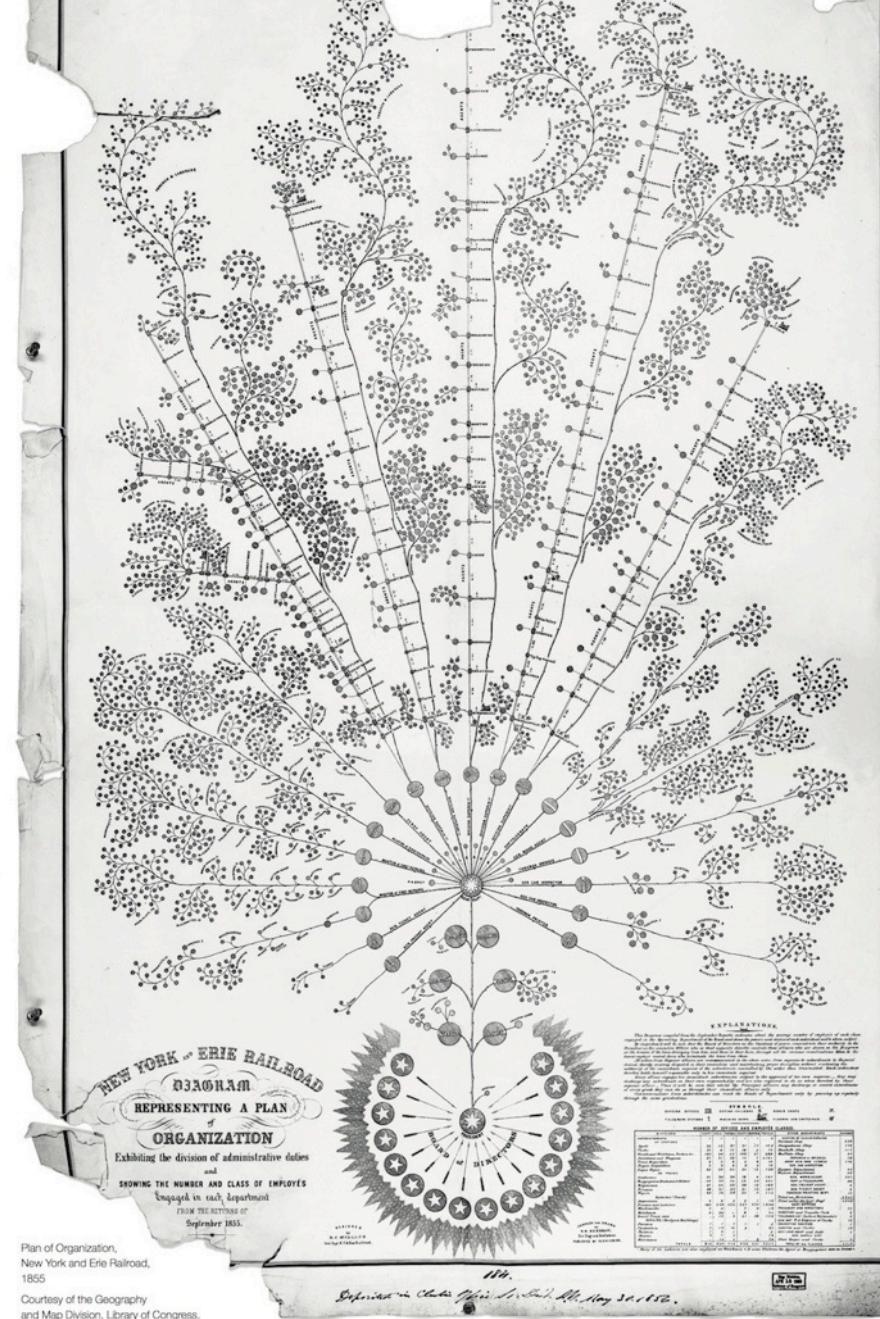
Companies
Execute

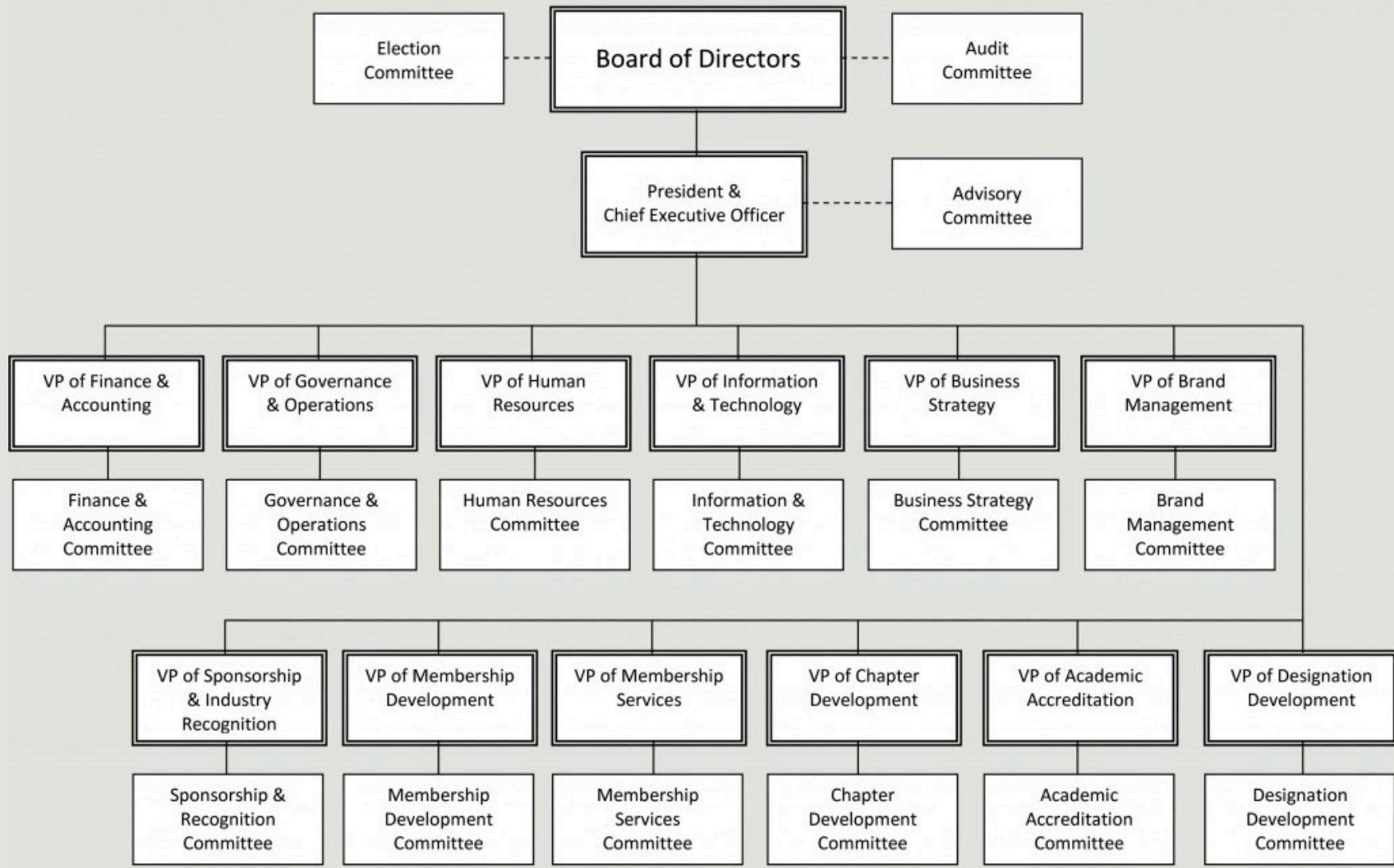
**We were wrong about
how to organize
a startup**

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

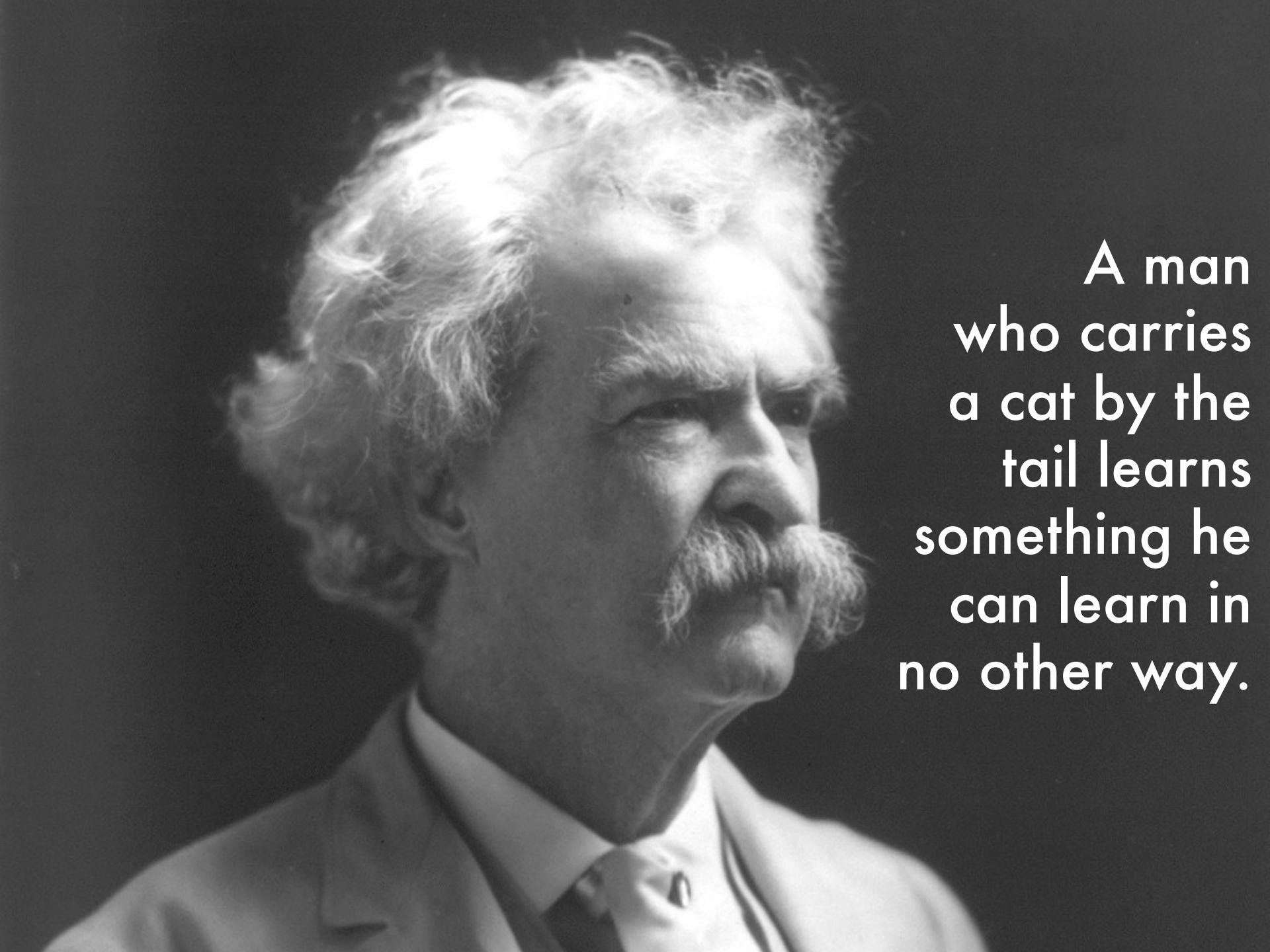
Entrepreneurship is a

**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

Innovation Ethics

Report and get Feedback – **Repeat**

Present Final Business Model & Critique other's

Everything via Blackboard

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

Course Notes

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
- Startup 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

Announcements

**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**