CENTER *for* NEUROTECHNOLOGY

*a National Science Foundation Engineering Research Center*

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# REU Seminar: Entrepreneurship and Industry

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# Agenda

Entrepreneurship
- What goes Wrong
- How to do it Right

Tech Transfer and Intellectual Property

What is Industry all about?

How do I get there?

# My Background

Research

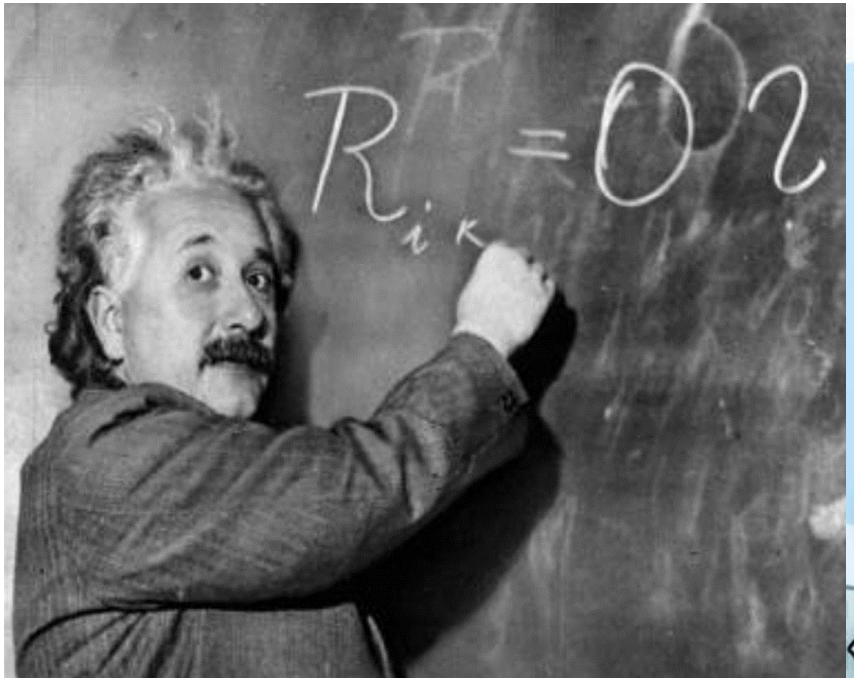
- Laryngeal Reanimation
- Injectable Microstimulators

Medtronic

- R&D Cardiac Rhythm Management
- Clinical
- Education

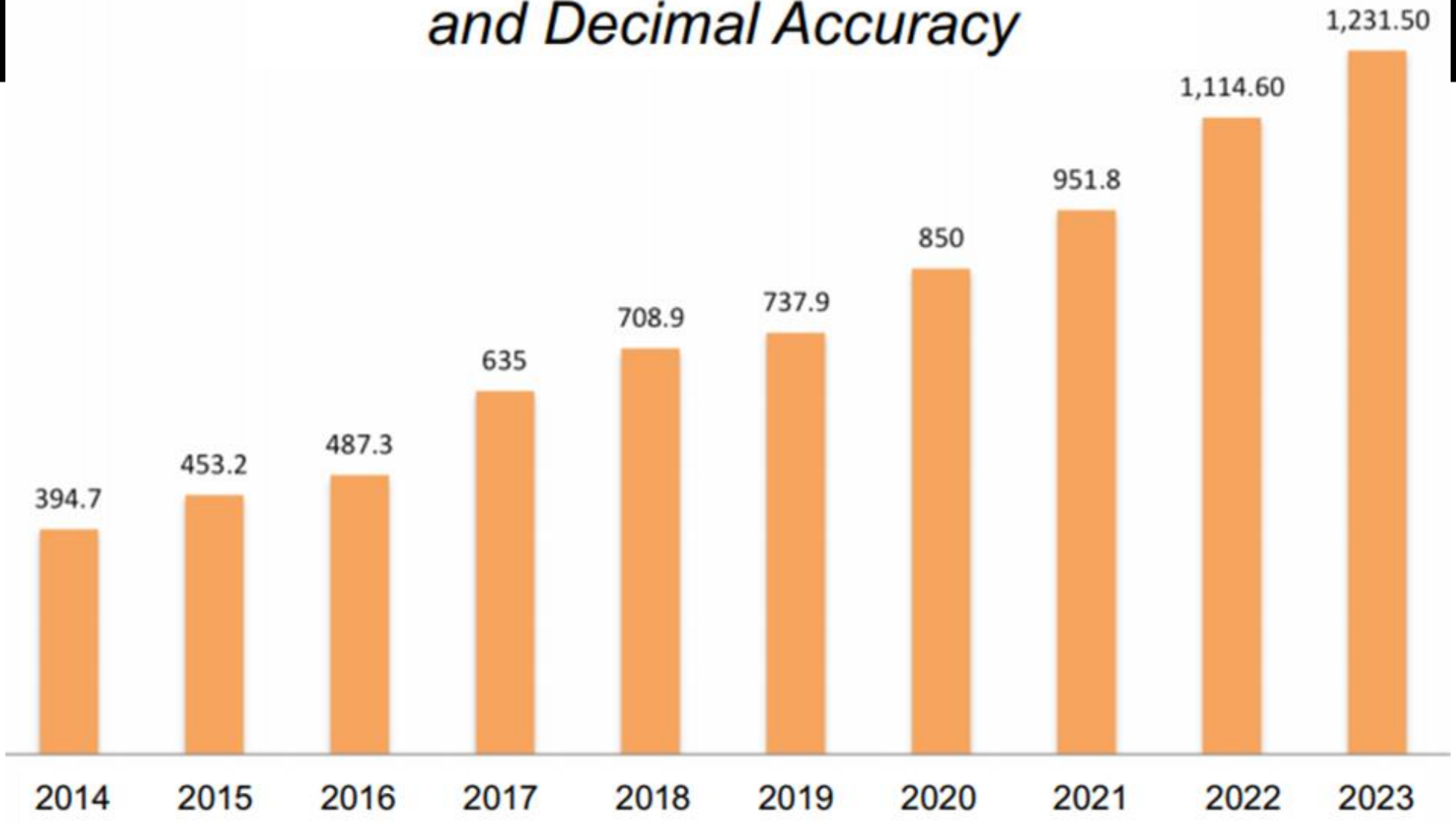
CNT, 3 startups, Tech Studio course

# Faith Based Entrepreneurship

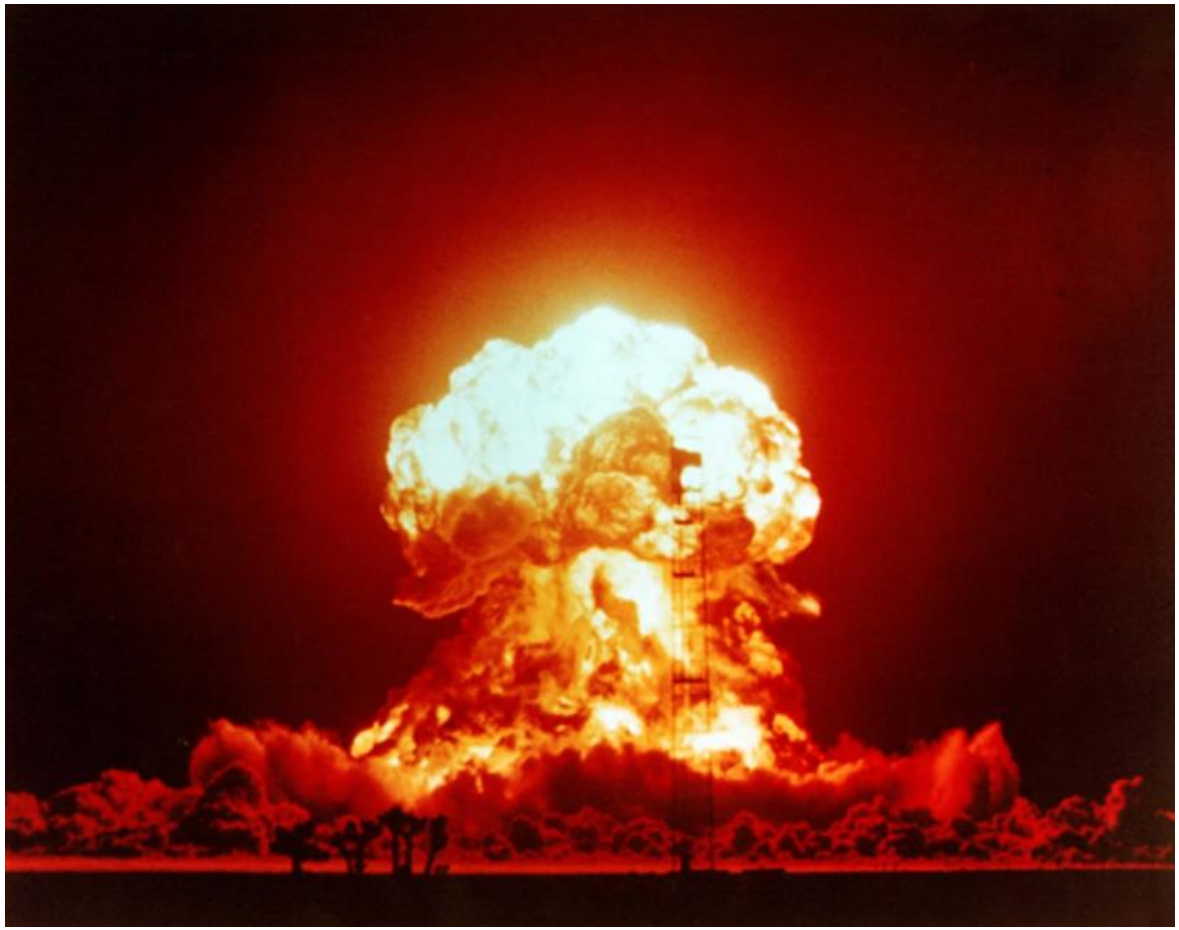


# FUTURE FORECASTS

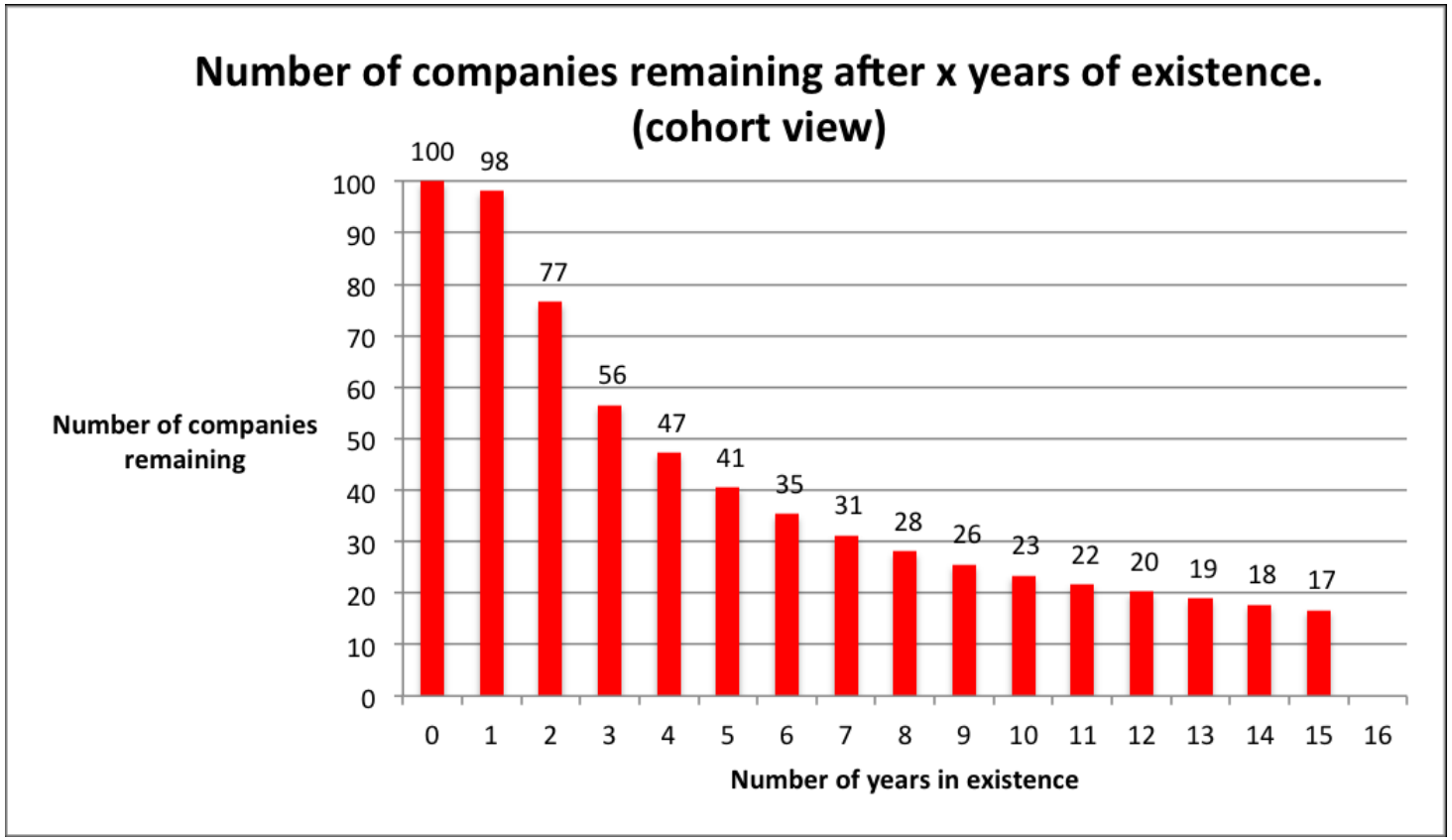
*With Tons of Details*
*and Decimal Accuracy*



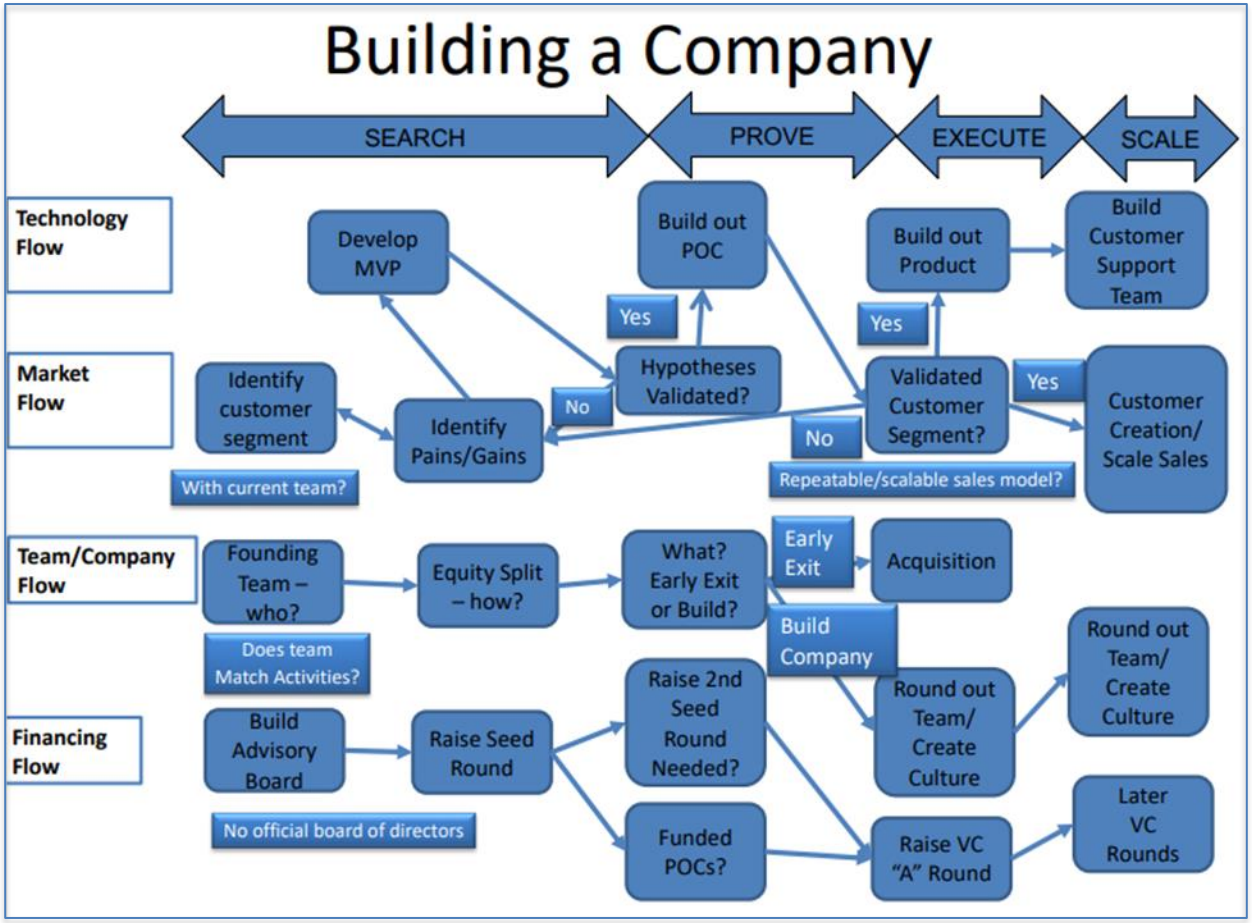
# Typical Outcome of Faith-Based Entrepreneurship



# Startup Failure Rate



# The Search


Building a Company
SEARCH
PROVE
EXECUTE
SCALE
Technology Flow
Market Flow
Team/Company Flow
Financing Flow
Develop MVP
Build out POC
Build out Product
Build Customer Support Team
Yes
Yes
Identify customer segment
Identify Pains/Gains
Hypotheses Validated?
No
Validated Customer Segment?
Yes
Customer Creation/ Scale Sales
No
With current team?
Repeatable/scalable sales model?
Founding Team – who?
Equity Split – how?
What? Early Exit or Build?
Early Exit
Acquisition
Build Company
Does team Match Activities?
Build Advisory Board
Raise Seed Round
Raise 2nd Seed Round Needed?
Round out Team/ Create Culture
Round out Team/ Create Culture
No official board of directors
Funded POCs?
Raise VC "A" Round
Later VC Rounds

# Entrepreneurship*

- **Entrepreneurship** is the process of starting a business or other organization. The **entrepreneur** chooses/develops a business model, acquires the human and other required resources and is fully responsible for it success or failure.

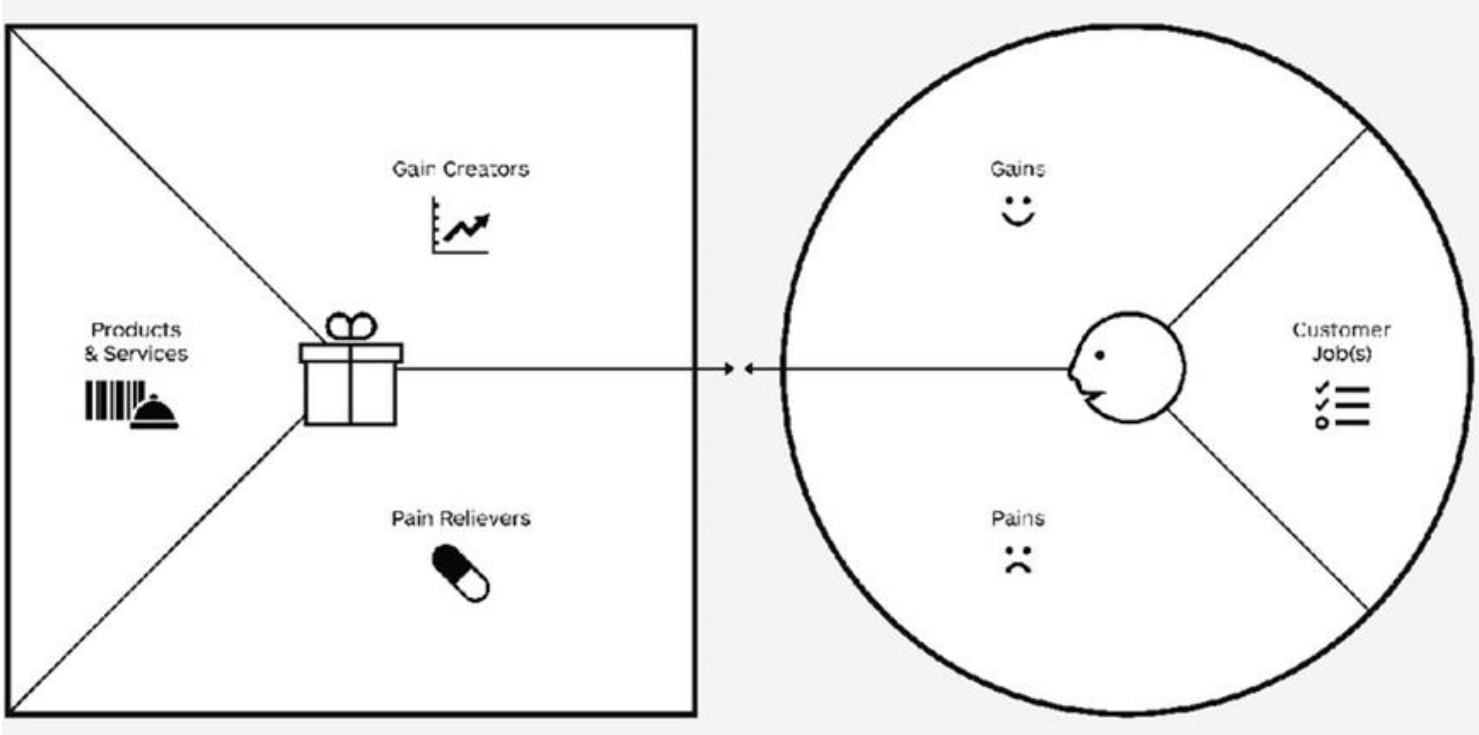
*Wikipedia: July 2014

# Innovation*

The design, invention, development and/or implementation of new or altered products, services, processes, systems, organizational structures, or business models for the purpose of creating new value for customers and financial returns for the firm

*Innovation Measurement
A Report to the Secretary of Commerce
January 2008

# Value Proposition and Customer Fit



# Scientific Method:
# *Exploring the **Unknown***

- Admit there are unknowns
- Develop hypothesis to probe unknowns
- Use appropriate metrics to validate
- Close the hypothesis-testing loop
- Rinse-and-repeat

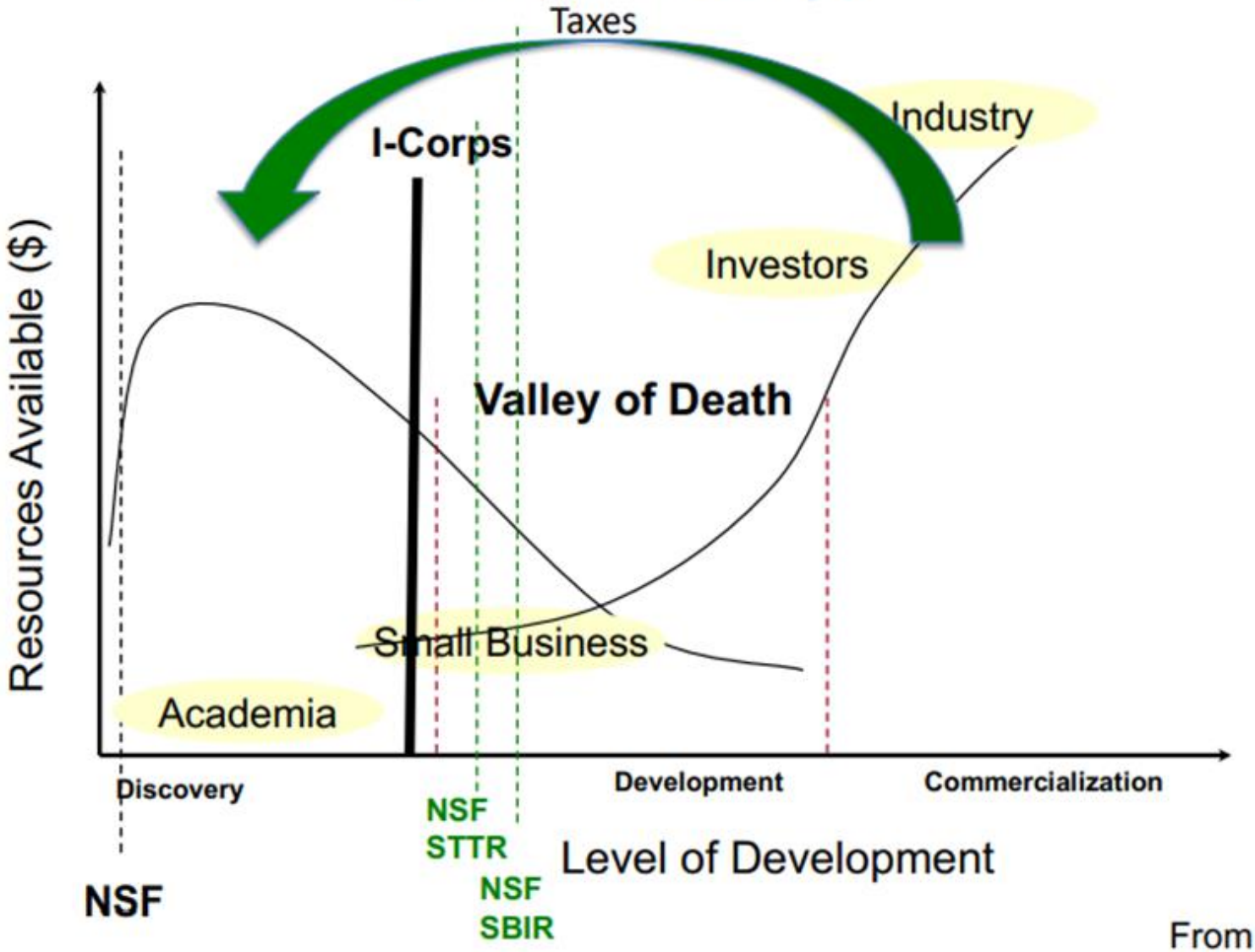
What happens when you ignore the unknown?

YOU BUILD SOMETHING NOBODY CARES ABOUT

Startups Fail because they Confuse Search with Execution

-Steve Blank

# Technology Innovation Spectrum (The Theory)




From Angus Kingon

# Sources of Funding for Innovation

Private Equity

Venture Capital

Company Profits

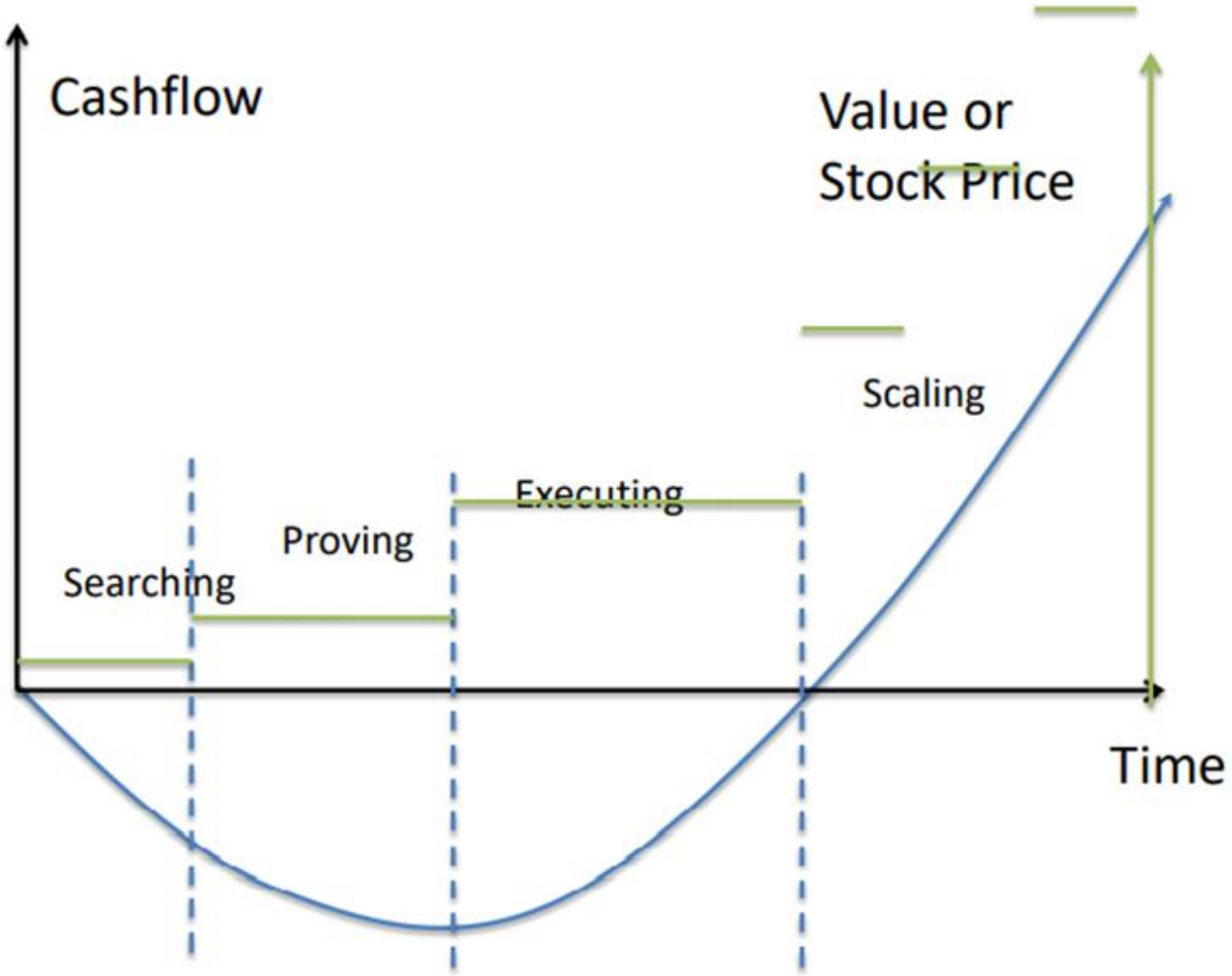
Angels / Friends & Family

Commercial Banks

The Government

Non-profits / Grants

# Financing 101



# What is Tech Transfer and IP?

- **Intellectual Property**
- **Invention Disclosure**
- **Patents**
- **Licensing**

## Intellectual Property

A work or invention that is the result of creativity, such as a manuscript or a design, to which one has rights and for which one may apply for a patent, copyright, trademark, etc.

# Invention Disclosure

Inventions are disclosed and assigned to the company.

The company protects some of these via patents, copyrights, and trademarks.

Patents, copyrights, and trademarks are used internally and/or licensed to other companies for commercial use.

Inventors may get Cash and/or stock bonuses, a plaque or other award.

# Patent

A patent is the grant of a property right to the inventor or his/her assignee for a limited period of time in exchange for a public disclosure of the invention.

In the United States, a patent grants, “the right to exclude others from making, using, offering for sale, importing, or selling” the invention in the US.

Must be: Novel, Non-obvious, and Useful

License

A license is a legal agreement where one party allows another to do something.

In technology transfer, a University may grant a company a license to commercialize an invention.

# What is the Tech Transfer Process?
# Commercialization

- File an Invention Disclosure
  - Who, what, where, when, why, how

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# Commercialization

- File an Invention Disclosure

- Assess Commercial Potential
  - Market Potential, Costs, Competition, etc.

# What is the Tech Transfer Process?
# Commercialization

- File an Invention Disclosure
- Assess Commercial Potential
- Develop a Commercialization Plan
  - Who, what, where, when, why, how…..

# What is the Tech Transfer Process?
# Commercialization

- File an Invention Disclosure
- Assess Commercial Potential
- Develop a Commercialization Plan
- Protect IP (file patents) if needed
  - Work with IP Attorney to write and file

# What is the Tech Transfer Process?
# Commercialization

- File an Invention Disclosure
- Assess Commercial Potential
- Develop a Commercialization Plan
- Protect IP (file patents) if needed
- License the technology to a company
  - Who, what, where, when, why, how…..

# What is the Tech Transfer Process?
# Commercialization

- File an Invention Disclosure
- Assess Commercial Potential
- Develop a Commercialization Plan
- Protect IP (file patents) if needed
- License the technology to a company
- Get lots of $$$

# Can you identify this valuable patent?

**United States Patent 6,285,999 September 4, 2001**

**Title: Method for node ranking in a linked database**

**Abstract: A method assigns importance ranks to nodes in a linked database, such as any database of documents containing citations, the world wide web or any other hypermedia database. The rank assigned to a document is calculated from the ranks of documents citing it. In addition, the rank of a document is calculated from a constant representing the probability that a browser through the database will randomly jump to the document. The method is particularly useful in enhancing the performance of search engine results for hypermedia databases, such as the world wide web, whose documents have a large variation in quality.**

**Inventors: Page; Lawrence**
**Assignee: The Board of Trustees of Stanford University.**

# Google and Stanford University

**Google began in Jan, 1996 as a research project by Stanford PhD student Larry Page.**

# What is Industry About?

Developing (inventing, creating, licensing….) technologies (ideas, software, processes, devices…) for the purpose of marketing and selling products for profit.
Meet customer needs, meet stockholder expectations

## Medtronic

- **Earl Bakken**

# How do I get there?

Technical Skills

Soft Skills

- Communication (listening, verbal, written)
- TEAMWORK
- Flexibility
- Leadership / Management
- Organization
- Dependability / Responsibility
- Honesty / Work Ethic / Professionalism

## Questions?

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