Portland State University

PDXScholar

Spring 2018

Lean Startups and Strategic Management

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Title: Lean Startups and Strategic Management

Course Title: Strategic Management of Technlogy
Course Number: ETM-526
Instructor: Weber
Term: Spring
Year: 2018
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Report No.:
Type: Student Project
Note:

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Strategic Management of Technology, ETM 526, Dr. Weber

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Outline

Lean startup methodology overview
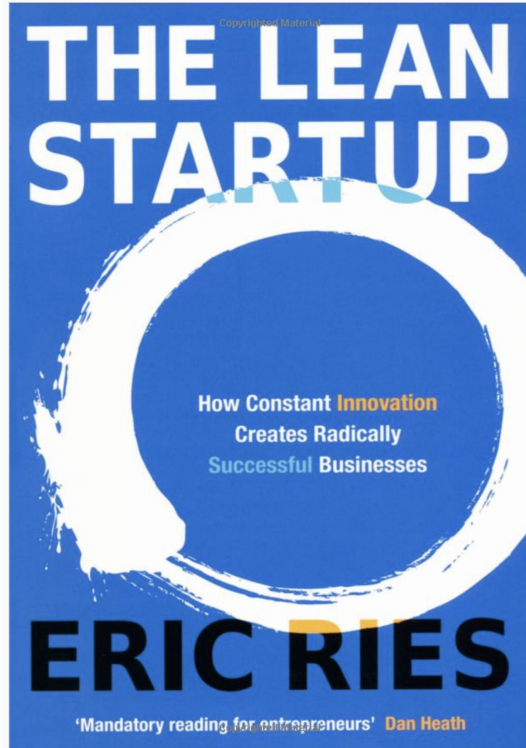
Challenges and solutions

Case studies

Research on lean

Lean and strategic management

Recommended Reading

Steve Blank and Bob Dorf, *The Startup Owner's Manual*, (2012)

Steve Blank, "Why the Lean Start-up Changes Everything," *Harvard Business Review* 91:5 (2013), pp. 635 - 672

Erik Ries, *The Lean Startup: How Constant Innovation Creates Radically Successful Businesses* (2011)

Definition & Comparison to Traditional Startup Method

The Lean Startup Method "favors experimentation over elaborate planning, customer feedback over intuition and iterate design over traditional "big design up front" development." (Blank, 2013)

Lean	Traditional
Strategy	
Business Model Hypothesis-driven	Business Plan Implementation-driven
New-Product Process	
Customer Development Get out of the office and test hypotheses	Product Management Prepare offering for market following a linear, step-by-step plan
Engineering	
Agile Development Build the product iteratively and incrementally	Agile or Waterfall Development Build the product iteratively, or fully specify the product before building it

Lean | Traditional

Organization

Lean	Traditional
Customer and Agile Development Teams Hire for learning, nimbleness, and speed	Departments by Function Hire for experience and ability to execute

Financial Reporting

Lean	Traditional
Metrics That Matter Customer acquisition cost, lifetime customer value, churn, viralness	Accounting Income statement, balance sheet, cash flow statement

Failure

Lean	Traditional
Expected Fix by iterating on ideas and pivoting away from ones that don't work	Exception Fix by firing executives

Speed

Lean	Traditional
Rapid Operates on good-enough data	Measured Operates on complete data

Key Elements of Lean Startups: Terms

Business Model Canvas

- Summarized framework of to-be-tested hypotheses (see next slide for example)

Minimum Viable Product (MVP)

- The most simplified version of a working product that can be used to get feedback from early adopters

Pivoting

- A big change in the product (or company direction) based on consumer feedback

Product Marketing Fit (FMF)

- When your product matches the consumer demand (a key metric for commercial production)

Agile Development

- Eliminates wasted time and resources by developing the product iteratively and incrementally

Sketch Out Your Hypotheses

The business model canvas lets you look at all nine building blocks of your business on one page. Each component of the business model contains a series of hypotheses that you need to test.

(Blank, 2013)

KEY PARTNERS

Who are our key partners?

Who are our key suppliers?

Which key resources are we acquiring from our partners?

Which key activities do partners perform?

KEY ACTIVITIES

What key activities do our value propositions require?

Our distribution channels?

Customer relationships?

Revenue streams?

KEY RESOURCES

What key resources do our value propositions require?

Our distribution channels?

Customer relationships?

Revenue streams?

VALUE PROPOSITIONS

What value do we deliver to the customer?

Which one of our customers' problems are we helping to solve?

What bundles of products and services are we offering to each segment?

Which customer needs are we satisfying?

What is the minimum viable product?

CUSTOMER RELATIONSHIPS

How do we get, keep, and grow customers?

Which customer relationships have we established?

How are they integrated with the rest of our business model?

How costly are they?

CHANNELS

Through which channels do our customer segments want to be reached?

How do other companies reach them now?

Which ones work best?

Which ones are most cost-efficient?

How are we integrating them with customer routines?

CUSTOMER SEGMENTS

For whom are we creating value?

Who are our most important customers?

What are the customer archetypes?

COST STRUCTURE

What are the most important costs inherent to our business model?

Which key resources are most expensive?

Which key activities are most expensive?

REVENUE STREAMS

For what value are our customers really willing to pay?

For what do they currently pay?

What is the revenue model?

What are the pricing tactics?
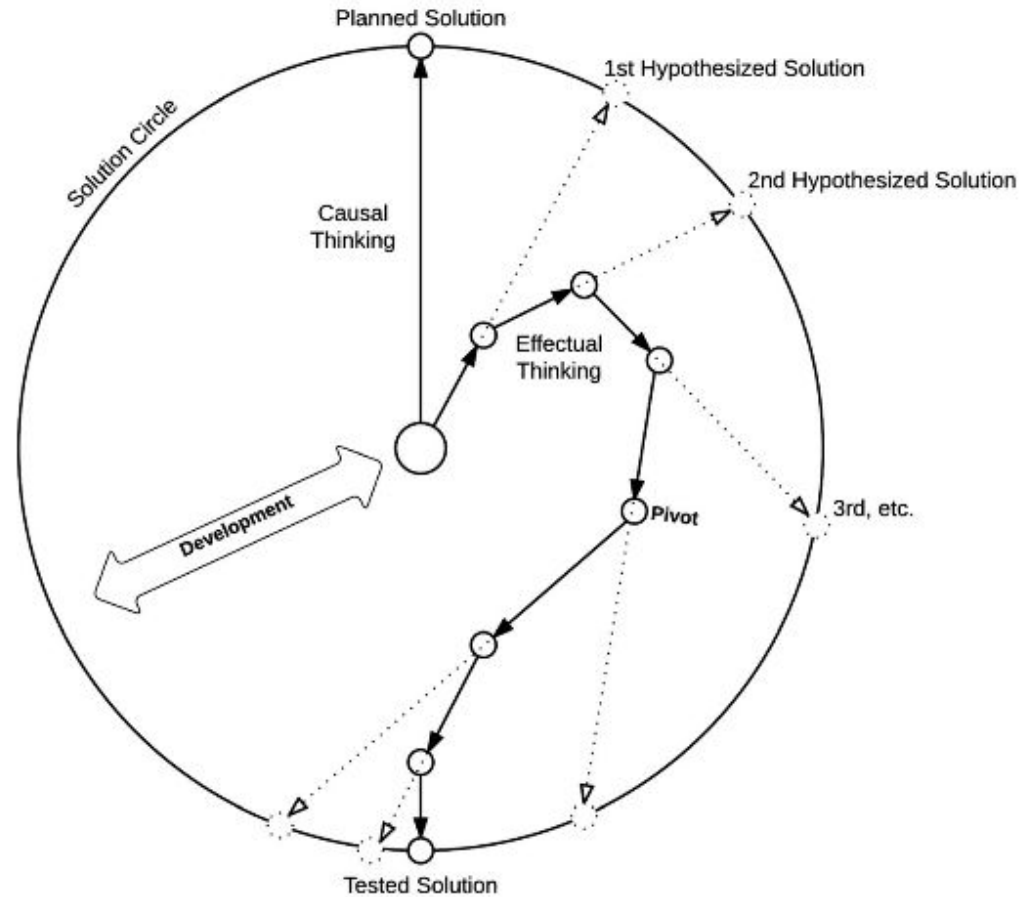
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Key Elements of Lean Startups: Principles

The lean startup method has three key principles (Blank):

1. Instead of beginning/developing a fully formed business plan, "entrepreneurs accept that all they have on day one is a series of untested hypotheses."

2. Product developers utilize a customer development approach to test their hypotheses.

    a. Customer input informs iterations of the product, adding or subtracting to the product's features accordingly.

    b. Customer input can also inform substantial "pivots" in product definition and design.

3. Product developers embrace and practice "agile development," driving rapid iterations of products under development.

Lean Start-up Process

1. "Determine whether the product vision can be matched with a problem worth solving using a combination of qualitative customer observation and interviewing techniques."
2. Develop a product prototype to serve as the minimum viable product.
3. Seek and document customer feedback.
4. Iterate product design based on customer feedback.
5. Repeat steps 1 - 4 until a product marketing fit is reached.
6. Commercialize product and scale up before seed money is exhausted.

Planned Solution

Solution Circle

1st Hypothesized Solution

2nd Hypothesized Solution

Causal Thinking

Effectual Thinking

Development

Pivot

3rd, etc.

Tested Solution

Causal vs effectual approach to entrepreneurship mapped over a 'solution circle'

(Frederiksen and Brem, 2017)

Common Business Culture Barriers

Legacy business cultures' placement of high value upon approved business plans prior to startup execution

The persistence/emergence of business cultures that have embraced the mentality that "failure is not an option"

In order to benefit from the nimbleness and speed of the lean startup method, the startup team must first be capable of agile development behavior.

Incrementalism must be valued and adopted by executives; instant gratification (wanting everything too fast) can complicate efforts and distract the team from its solve-problems-as-you-go approach.

Black box/stealth mode mentality is anathema to the lean startup method
- Rapid development of a customer-informed product requires up-front (and repeated) customer feedback to inform incremental iterations.
- This can be a problem from both an internal and external perspective

Common Challenges & Solutions

Quality is required for customers to buy and sometimes the biggest reason they buy a product

- More validation may not necessarily be better

Too much feedback from customers might cause the entrepreneurs to change the idea so frequently that they become disheartened.

- Set clear constraints
- Creation of a "false negative"

Not having a clear rule for when entrepreneurs and entrepreneurs should declare victory, stop testing, and begin scaling production.

- Declare a clear threshold for Go/ No Go decisions

IMVU

Started by Eric Ries - 3D IM client / virtual social network.

Started as an addon to popular IM platforms at the time (AIM, MSN, Yahoo, etc.)

Was not able to capture users, so developers started interviewing their current customers and any potential new customers.

Through interviews they discovered that customers had a completely different usage method from what creators originally intended.

Groupon

Originally invented as an activism platform

Founders remade the site, and started over with a minimum viable product (MVP) idea of a wordpress site where people could buy one discounted thing per day.

MVP process helped them go through the process of learning what worked and what didn't very quickly.
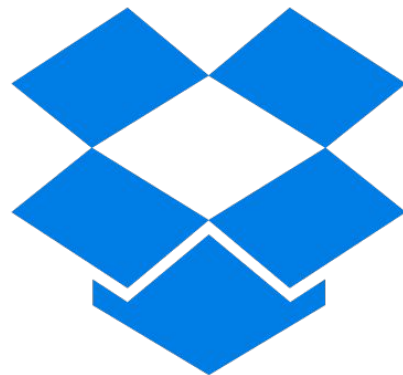
Taps into the Build-Measure-Learn feedback loop.

GROUPON®

Dropbox

Company made up mostly by engineers, focused on the logistical aspects of making the service work.

Adopted Lean startup methods and grew company exponentially in 18 months.

Initial MVP turned out to be a demonstration video of Dropbox.

intuit TurboTax

Established company adopting LEAN startup practices with TurboTax.

From one major release per year, they're trialing up to 70 different tests per week. Based on feedback from users, they review tests and then rebuild from there.

Allows them to learn and run many concurrent projects/ideas at once. It reduces politics and encourages entrepreneurship.

Build-Measure-Learn Feedback Loop
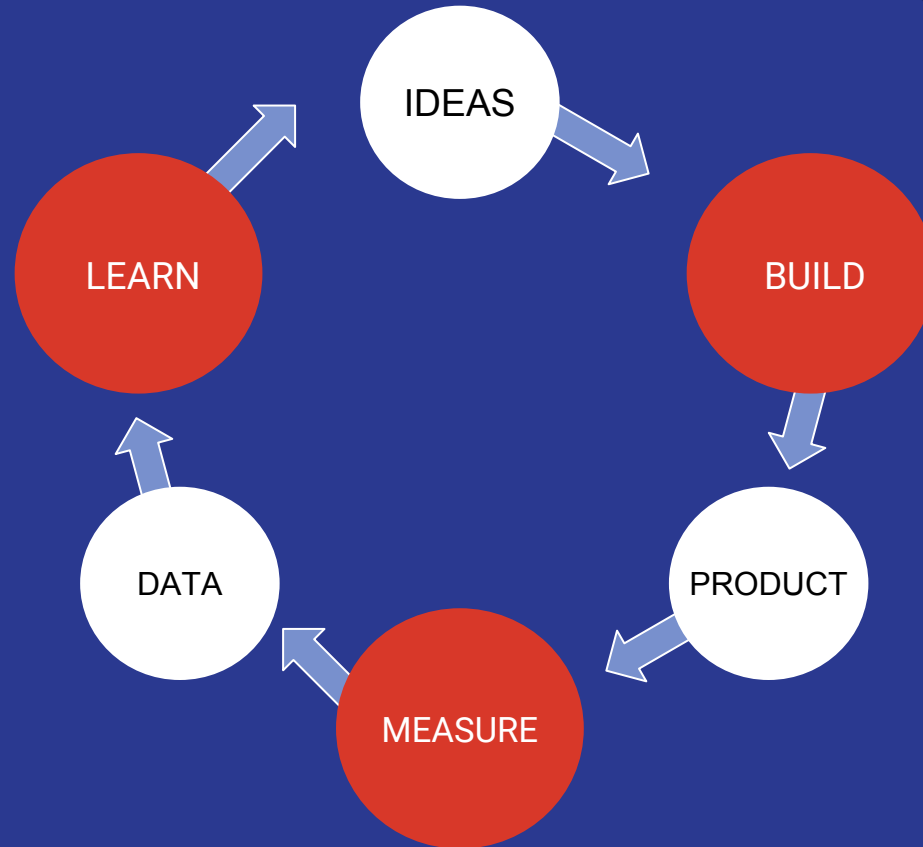
Research: Product-Market Fit

Failure of early-stage software companies; Lit review followed by multiple case study

Milkplease - crowd-based grocery shopping app that allows users to order groceries for delivery through their mobile device.

Picteye - provided a web marketplace where people could sell and buy pictures

Lack of systematic feedback, particularly around product-market fit

Were improving user experience prior to understanding product-market fit

(Giardino et al 2014)

Research: Lean in a Large Corporation

Lean Startup inside large corporations to seek radical innovation

Single case study; one of the largest software developers in Europe - develops antivirus, cloud content and computer security software; introduced Lean startup in 2012

Lessons learned
   a.   Entrepreneurs are everywhere - not difficult to find employees that have big ideas
   b.   Entrepreneurship is management - the internal startup has to do some research about the new product and also responsible for its commercialization
   c.   Build-measure-learn - increases the speed of development; 2 releases/year vs. 12/year.
   d.   Validated learning - internal startup involved the customers in development phase which reduced the time to validate ideas
   e.   Innovation accounting - the customers for the internal startup are the end users and top management.
   f.   Customers - both end users and management

Research: Decision-Making Bias

Bias	Description	Mitigation techniques
Selection bias	seeking information from "friendly" confirmatory sources resulting in unrepresentative sampling of the target market(s)	founding team members pair up in "getting out of the building" and check each other's assumptions at all times careful attention to selection of interview targets
Representativeness bias	generalizing from small, non-random samples of data and/or information from respondents who do not represent the target market(s)	conducting customer development interviews as an iterative and continuous process, checking previous generalizations against new data
Acquiescence bias	respondents' tendency to give the answers they believe the entrepreneur wants to hear	carefully structuring customer development interviews to avoid "yes/no" answers; not asking respondents to speculate on future behavior, but focusing on past and current behavior

(York and Danes 2014)

Research: Decision-Making Bias

Confirmation Bias	interpreting information to confirm prior beliefs	maintaining open-ended interview discussion focused on problems, not proposed solution improper linear model development to simulate data-driven decision where actual measurement data is impractical if not impossible
Overconfidence bias	overestimating the knowledge and precision of customer suggestions and/or the entrepreneurs information	engaging mentors and advisors to provide an unbiased perspective on the information gathered and to create an environment of System 2 thinking around the startup premortem exercises looking at potential causes of failure rather than assuming success; a belief that only the paranoid survive

Research: Decision-Making Bias

Optimism bias

the entrepreneur's belief that he/she is unlikely to experience negative outcomes or fail

analogical reasoning - engaging in "reference class forecast" activities comparing to other similar startups"consider the opposite" activities to force more critical thinking

Research: Validation in the Literature

Table 2 Overview of covered areas and their support

Area	Support	Literature
User and customer involvement	Very strong	(Chesbrough et al. 2006) (Huizingh 2011) (Cheng and Huizingh 2014)
Iterative NPD	Strong	(Gassmann et al. 2006) (Sandmeier et al. 2010) (Salerno et al. 2015)
Experimentation in NPD	Medium	(Thomke 1998) (Lynn et al. 2003) (Hauser et al. 2006) (Andries et al. 2013) (Kerr et al. 2014)
Early Prototyping for proof-of-business (MVP)	Medium	(Block and MacMillan 1985) (Coviello and Joseph 2012)
Effectual Thinking	Strong	(Block and MacMillan 1985) (Sykes and Dunham 1995) (Sarasvathy 2001) (Read and Sarasvathy 2005) (Baker and Nelson 2005) (Lange et al. 2007) (Sommer et al. 2009) (Brinckmann et al. 2010) (Chandler et al. 2011) (Coviello and Joseph 2012) (Fisher 2012)

Research: Extending Lean

Interviewed 9 start-ups in Sweden and focusing on the lean startup methodology

Findings: few were using lean because many found lean hard to actually apply

Ries' work heavily influenced by several others, including Steve Blank (Customer Development Model in 2005) John Mullins and Randy Komisar (Getting to Plan B in 2009)

Gaps:
    1. Investigating multiple product ideas in parallel, as part of an idea portfolio.
    2. Insufficient validation criteria for moving product ideas forward through process stages.
    3. No clear guidance on when to abandon a product idea.
    4. Insufficient suggestions of what techniques to use and when, while validating product ideas.

(Björk et al 2013)

Connecting Lean to Strategic Management

•Since the beginning of time companies have been using strategy to beat out their competition. It is used to begin a new company and also by companies in their mid life to analyze how a they'll will be successful in the long term.

•Since the early 2000's when Lean Startup methodology was introduced, startups have introduced innovations that have made light years of advancements to our overall quality of life.

•These life altering advancements include products like Search Engines (Google), GPS Mapping (GoogleMaps), Smartphones (iPhone), Groupon (web based couponing), Dropbox (virtual file sharing), and Turbotax (online tax preparation).

Connecting Lean to Strategic Management

•Many of these innovations would have wowed critics in the seventies in the fictional sci-fi movies and now they are a reality, giving everyone super-power like abilities regardless of age, country, or social status. These new powers include the ability to consume and distribute massive amounts of information all while reducing costs, time, and complexity.

•This is similar to what we saw in the 80's when companies were applying The Porters five forces to those game changing innovations we've read about – Costco, and PC's, software

Connecting Lean to Strategic Management

Startup Methodology

- Lean Startup
  - Go to market quickly
  - Constantly validate and iterate
  - Keep costs low

Planning Strategies

- Product Positioning Based
- Porters Five Forces (external)
  - Cost advantage through quick build-measure-learn
  - Enhanced likelihood of product differentiation
  - Reduces threat of substitution by product differentiation
- Resource Based
- Resource Based View (RBV)(internal)
  - Enables technological leads by faster-to-market times
  - More clarity on the best sequencing of market entries
  - Efficient resource use through pivots

References

J. Björk, J. Ljungblad, and J. Bosch, "Lean Product Development in Early Stage Startups," in From Start-ups to SaaS Conglomerate: Life Cycles of Software Products Workshop (IW-LCSP 2013), Potsdam, Germany, 2013, pp. 19–32.

S. Blank, "Why the Lean Start-Up Changes Everything," *Harvard Business Review*, May 2013, pp. 65 - 72.

H. Edison, X. Wang, and P. Abrahamsson, "Lean Startup: Why Large Software Companies Should Care," in Scientific Workshop Proceedings of the XP2015, Helsinki, Finland, 2015, pp. 2:1–2:7.

D. L. Frederiksen and A. Brem, "How do Entrepreneurs Think They Create Value? A Scientific Reflection of Eric Ries' Lean Startup Approach," International Entrepreneurship and Management Journal, vol. 13, no. 1, pp. 169–189, 2017.

C. Giardino, X. Wang, and P. Abrahamsson, "Why Early-Stage Software Startups Fail: A Behavioral Framework," in Software Business. Towards Continuous Value Delivery, 2014, pp. 27–41.

E. Ries. *The Lean Startup: How Constant Innovation Creates Radically Successful Businesses.* New York, NY: Crown Business (2011), pp. 1-146.

J. L. York and J. E. Danes, "Customer development, innovation, and decision-making biases in the lean startup," Journal of Small Business Strategy, vol. 24, no. 2, p. 21, 2014.

Zappos

Started as an experiment, but had a very intense focus. One guy going to shoe stores to see if people would buy shoes online.

Direct customer interaction compared to "market research"

From MVP to bought out by amazon for 1.2B(?)