

# Principles of Software Design

## Lean startup

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# Lean Startup

- “Lean Startup: the application of lean thinking to the process of innovation” [7].

# Lean startup origins

- Lean manufacturing
- Customer development
- Agile

# Lean manufacturing [1]

- Value - Specify the value desired by the customer. "Form a team for each product to stick with that product during its entire production cycle", "Enter into a dialogue with the customer". . . .
- The Value Stream - Identify the value stream for each product providing that value and challenge all of the wasted steps (generally nine out of ten) currently necessary to provide it.
- Flow - Make the product flow continuously through the remaining value-added steps
- Pull - Introduce pull between all steps where continuous flow is possible.
- Perfection - Manage toward perfection so that the number of steps and the amount of time and information needed to serve the customer continually falls

# Lean manufacturing [1]

The Toyota way: seven types of waste [5]

- Overproduction
- Waiting (time on hand)
- Unnecessary transport or conveyance
- Overprocessing or incorrect processing
- Excess inventory
- Motion
- Defects

# Customer development [6]

## The four-step process

- Customer discovery first captures the founders' vision and turns it into a series of business model hypotheses. Then it develops a plan to test customer reactions to those hypotheses and turn them into facts.
- Customer validation tests whether the resulting business model is repeatable and scalable. If not, founders should return to customer discovery.
- Customer creation is the start of execution. It builds end-user demand and drives it into the sales channel to scale the business.
- Company building transitions the organization from a startup to a company focused on executing a validated model

# Customer development [6]

## Customer Development Manifesto

- There Are No Facts Inside Your Building, So Get Outside
- Pair Customer Development with Agile Development
- Failure is an Integral Part of the Search
- Make Continuous Iterations and Pivots
- No Business Plan Survives First Contact with Customers So Use a [Business Model Canvas](#)
- Design Experiments and Test to Validate Your Hypothesis

# Customer development [6]

## Customer Development Manifesto

- Agree on Market Type. It Changes Everything
- Startup Metrics Differ from Those in Existing Companies
- Fast Decision-Making, Cycle Time, Speed and Tempo
- It's All About Passion
- Startup Job Titles Are Very Different from a Large Company's
- Preserve All Cash Until Needed. Then Spend.
- Communicate and Share Learning
- Customer Development Success Begins With Buy-In



# Lean startup [3]

Principles and definitions (note that the definitions within lean startup may not match the traditional ones)

- Startup - Human institution designed to create something new under conditions of extreme uncertainty.
- Minimum viable product - version of a new product which allows a team to collect the maximum amount of validated learning about customers with the least effort
- Continuous deployment (only for software development)

# Lean startup [3]

Principles and definitions (note that the definitions within lean startup may not match the traditional ones)

- Split testing - different versions of a product are offered to customers at the same time.
- Actionable metrics - in contrast to vanity metrics—measurements that give "the rosier picture possible" but do not accurately reflect the key drivers of a business.
- Pivot - structured course correction designed to test a new fundamental hypothesis about the product, strategy, and engine of growth.

# The lean startup method [7]

- Entrepreneurs Are Everywhere (see definition of startup)
- Entrepreneurship Is Management
- Validated Learning
- Innovation Accounting
- Build-Measure-Learn

AARRR: an example of an actionable metric.

- Acquisition (or awareness) – How are people discovering our product or company?
- Activation – Are these people taking the actions we want them to?
- Retention – Are our activated users continuing to engage with the product?
- Referral – Do users like the product enough to tell others about it?
- Revenue- Are our personas willing to pay for this product?)




# Lean Startup

- Listen to this presentation: [E. Ries: The Leans Startup.](#)

# Resources I

- E. Ries: The Lean Startup.
- Wikipedia: Lean Startup.
- The lean startup: principles

# References |

-  [Wikipedia: Lean thinking](#)
-  [Wikipedia: Lean manufacturing](#)
-  [E. Ries: The Lean Startup.](#)
-  [Wikipedia: Lean Startup.](#)
-  [Wikipedia: The Toyota way](#)
-  [Wikipedia: Customer development](#)
-  [E. Ries: Lean Startup, Random House, 2011 .](#)