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Information Systems and Technology Management

INFS2603 Lecture Series

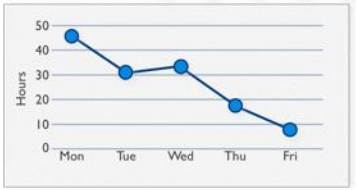
Business Analysis and Lean Startup

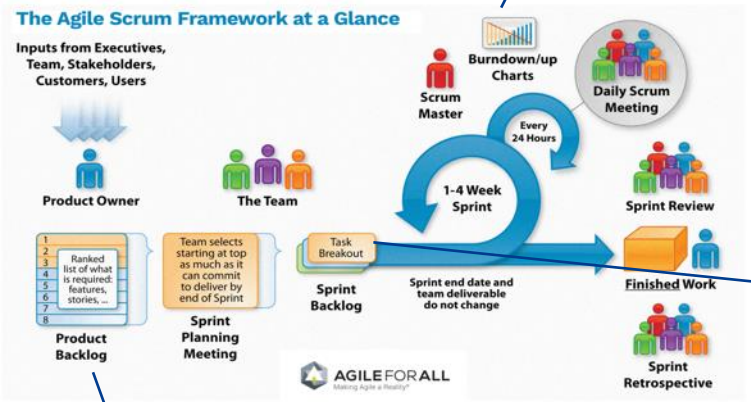
Week 08 Recap: Scrum Artifacts

BURNDOWN CHART

- Sprint tracking mechanism
- A display of *what work has been completed and what is left to complete*
- one for each developer or work item
- updated **every day**

Tasks	Mon	Tue	Wed	Thu	Fri
Code the user interface	8	4	8		
Code the middle tier	16	12	10	7	
Test the middle tier	8	16	16	11	8
Write online help	12				





SPRINT BACKLOG

- List of tasks identified by the Scrum team to be completed during a sprint
- User Stories picked from Product Backlog
- Estimated work remaining is updated daily
- Any team member can add, delete change sprint backlog
- Work for the sprint *emerges*

User Story	Tasks	Day 1	Day 2	Day 3	Day 4	Day 5	...
As a member, I can read profiles of other members so that I can find someone to date.	Code the ...	8	4	8	0		
	Design the ...	16	12	10	4		
	Meet with Mary about ...	8	16	16	11		
	Design the UI	12	6	0	0		
	Automate tests ...	4	4	1	0		
	Code the other ...	8	8	8	8		
As a member, I can update my billing information.	Update security tests	6	6	4	0		
	Design a solution to ...	12	6	0	0		
	Write test plan	8	8	4	0		
	Automate tests ...	12	12	10	6		
	Code the ...	8	8	8	4		

PRODUCT BACKLOG

- Prioritized list of User Stories with Story Points
- Created and Groomed by the Product Owner
- Reviewed at the end of each Sprint
- User Story Maps can be used as a Product Backlog

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Week 08 Recap: Business Analysis in an Agile Environment

Workplace type	Me and my team	My tools and methods	My collaborative networks	My manager's mindset
Conservative	Single function practice (e.g., BA Practices), farmed out to a project Single role per person	Business use cases, business requirements specifications including Plan based waterfall delivery method	Vertical; Limited to your own department plus incidentals within your own organisation	Hierarchical; Command and control; Conformity & uniformity "I'm the fire fighter"
Progressive	Cross-functional platform (persistent team) with a pipeline of work Multiple roles per person, where one may be the main role (3 Amigos: Dev, BA, QA)	Change based 'agile' delivery method Inceptions, User stories, Elaborations Acceptance criteria	Whole organisation; Vertical and horizontal (across departments) within your own organisation	Servant Leadership Tolerance and Flexibility Delegate authority "I'm the fire stoker"
Avant-garde	Cross-functional platforms and Multi-functional groups Ability to customise your role (with freelancing) % of platform, team or department work and % via internal, social marketplace (e.g. Google)	Design thinking, Lean and Agile delivery method Lean canvases Experiments Inceptions Continuous delivery DevOps	Extended across whole of your organisation and extending out to other connections you have and your colleagues have outside the organisation	Flatter structure Diversity and creativity Distributed authority "I'm the fire starter"

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Focus of Week 09-11

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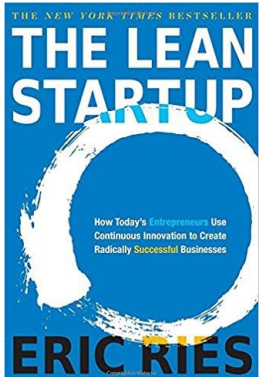
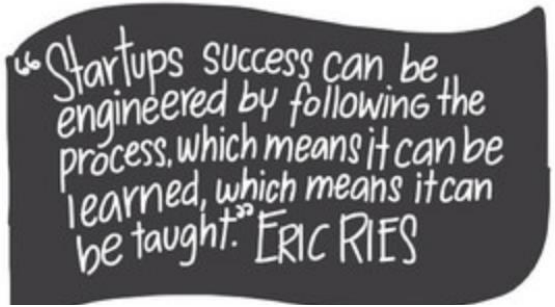
What is the Lean Startup Methodology?

- Is a Methodology!
  - Borrows ideas from Lean Manufacturing
  - Prescribes how ideas should go from inception to implementation
  - Can be used in any type of organisation - startups and large companies alike
  - Claims: there are no “born” entrepreneurs
  - Key figures: Eric Ries, Steve Blank





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What problem is Lean Startup trying to solve?

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

Every business plan fails the first time it makes contact with the customer. – *Steve Blank*

Mike Tyson on pre-fight strategies

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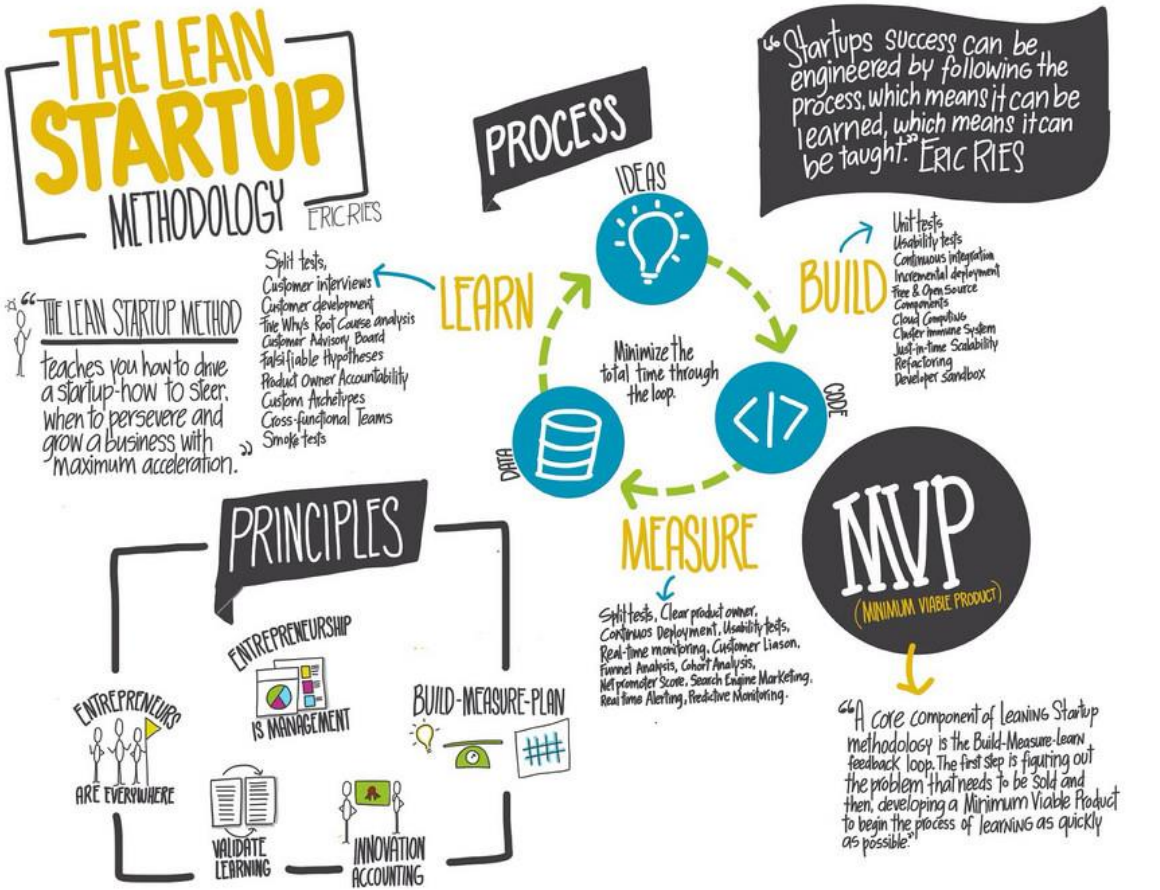

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Lean Startup Principles

1. Entrepreneurs are everywhere
2. Entrepreneurship is management
3. Validated Learning
4. Innovation Accounting
5. Build – Measure - Learn

Founder, IMVU

Entrepreneur in Residence, Harvard Business School

https://www.meetup.com/en-AU/Lean-Startup-Sydney/

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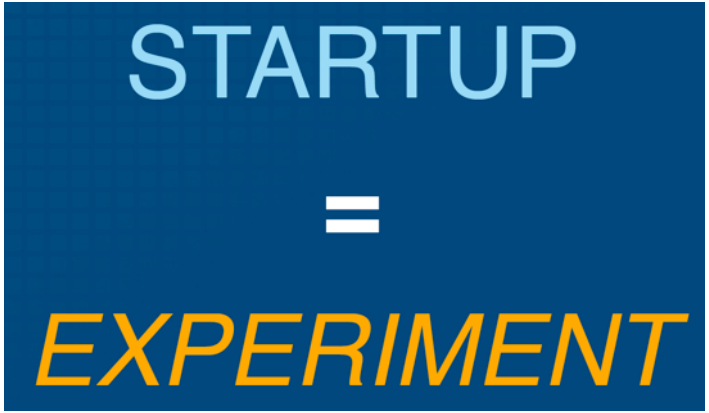
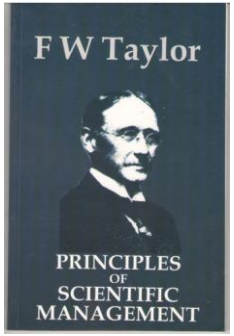
Entrepreneurs are everywhere

- A **startup** is a **human institution** designed to deliver a new product or service under conditions of **extreme uncertainty**
  - Can we build this?
  - If we build this, will they come?
  - And if they come, can we realize value?
- Nothing to do with size of company, sector of the economy, or industry
- *"Startup success can be engineered by following the process, which means it can be learned, which means it can be taught."* – Eric Ries



Entrepreneurship is management

- The goal is to create an (sustainable) **institution**, not just a **product**
- Need practices and principles geared to the startup context of **extreme uncertainty**
  - Not just for “two girls/guys in a garage



Validated Learning

- Startups exist to **LEARN** how to build sustainable businesses, and this **LEARNING** can be tested through experimentation
- If we're building something **nobody wants**, what does it matter if we accomplish it:

  On time?

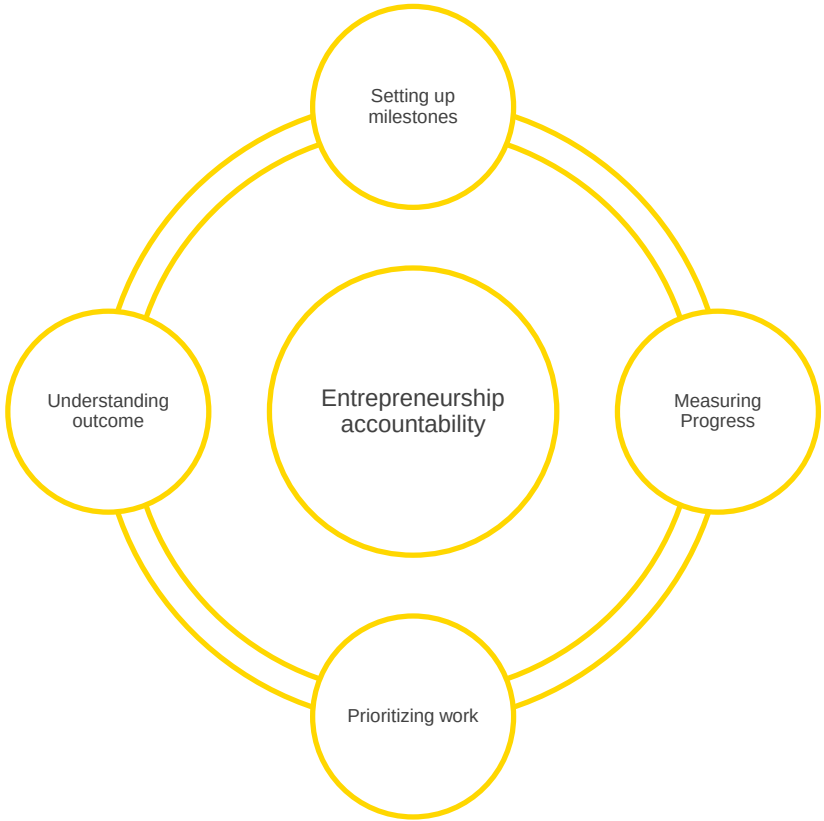
  On budget?

  With high quality?

  With beautiful design?

- Achieving Failure = successfully executing a bad plan
- "The customer is the most important part of the production line." –Edward Deming

Innovation Accounting



- **Establish the baseline**
  - Build a Minimum Viable Product (MVP)
  - Measure how customers **behave right now**
- **Tune the engine**
  - Experiment to see if we can improve metrics from the baseline towards the ideal
- **Pivot or persevere**
  - When experiments reach diminishing returns, it’s time to pivot.

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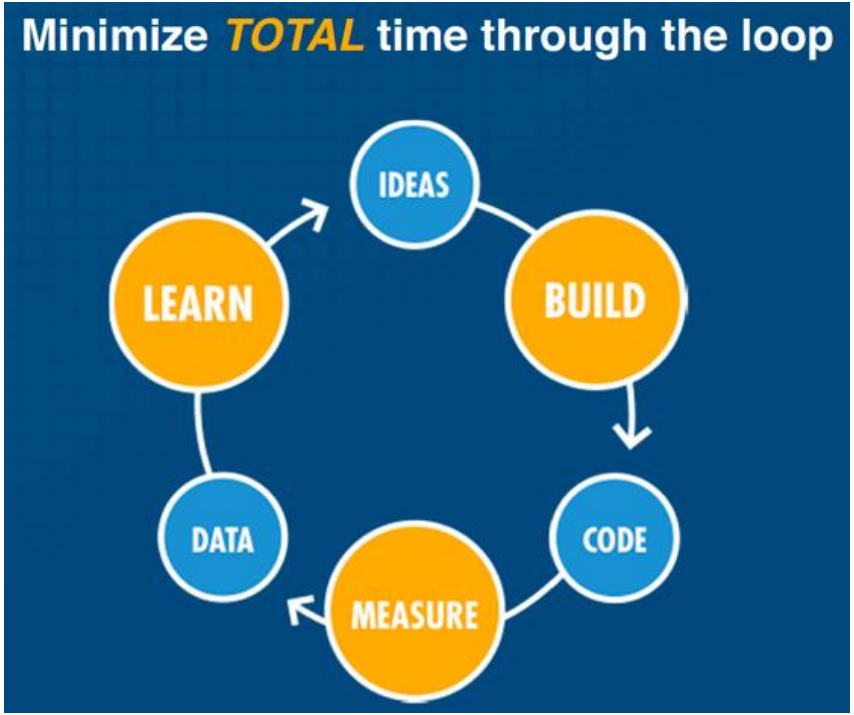
Build - Measure - Learn



Lean Startup Process

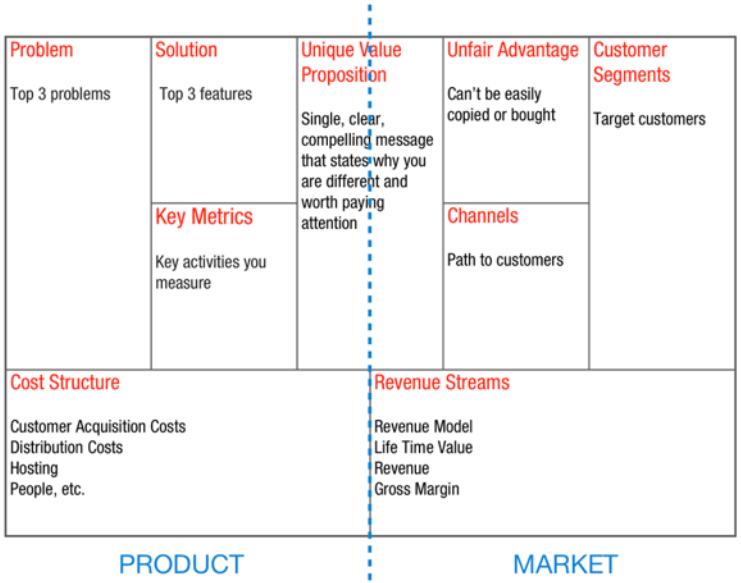
1. Start with a **“Lean Inception”** and a **“Lean Canvas”**
2. **Identify** and **prioritise** your **assumptions**
3. Figure out how to **test assumption** quickly – build your **hypothesis**
4. Build the **MVP** and launch the experiment
5. **Learn** from your experiment - **Pivot or Persevere!**
6. Iterate

1. Lean Inception and Lean Canvas

The Lean Inception		
	morning	afternoon
Monday	Introduce the inception, kick off, and Write the Product Vision	The product Is – Is not – Does – Does not
Tuesday	Describe the Personas	Discover the Features
Wednesday	Technical and Business Review	Show the User Journeys
Thursday	Display Features in Journeys	Sequence the Features
Friday	Build the MVP Canvas	Showcase the results of the inception to those interested in the project

Source: Martin Fowler, ThoughtWorks

User Story/Journey Mapping for understanding/creating the MVP

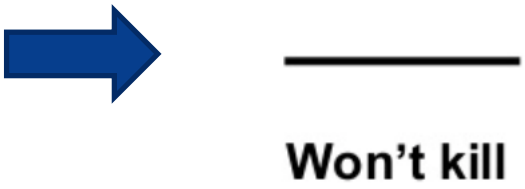


2. Identify and prioritise your assumptions

- Starts with “I believe that” statements
  - Problem, Solution, Customer (among others), in your Lean Canvas/Product Vision statement
- Clarifies your current understanding of what you don’t know with certainty
- Some are more important than others
- Identify and isolate critical assumption
  - What is the riskiest assumption?
  - How can we validate/invalidate the riskiest assumption?

“In a city where space is extremely limited, **{I believe that}** people will pay a small amount of money, for a small amount of space... they don’t need a hotel.”

airbnb



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3. Develop hypothesis for your assumptions

- "If … then" statement that helps design **tests for an assumption**
- Clarifies your current understanding of **what uncertainty** you seek to resolve
- Helps to design and build an MVP
- **Value** and **Growth** Hypothesis
  - Value hypothesis tests if a product is ***valuable*** *to potential customers*
  - Growth hypothesis tests how you assume *users will* ***find*** *your product*

"**If** we display professionally shot pictures of rooms, **then** we will have more bookings"

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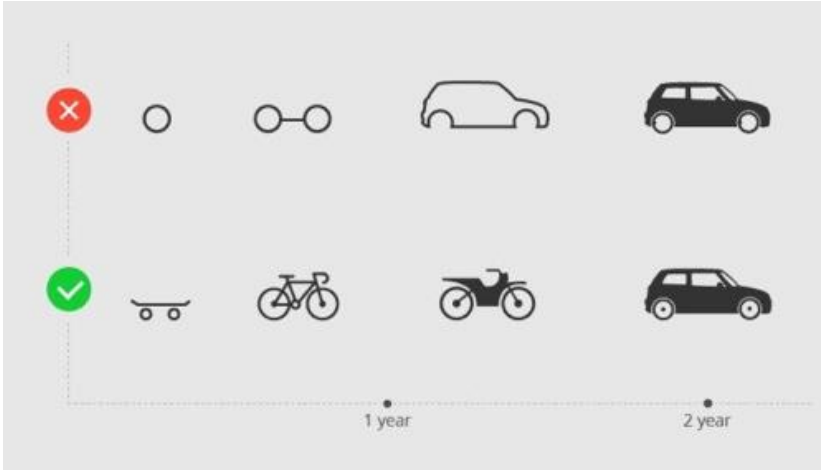
4. Building a Minimum Viable Product

- MVP is essentially an Experiment that helps you validate (or invalidate) hypotheses about the **value** or **growth** potential for a new product
- “Should we even build this product?”
- “it is the simplest thing that you can show to customers *to get the most learning at that point in time”* - Steve Blank



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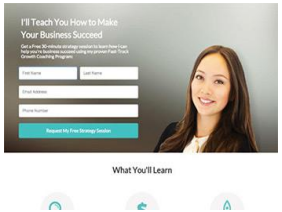
4. Building a Minimum Viable Product

- Low-fidelity and High-fidelity MVPs



Landing Pages

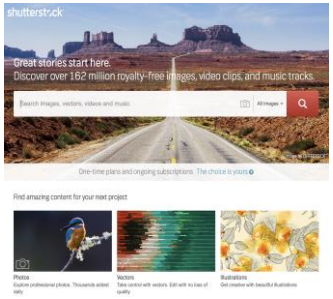
Presentation Deck

Sign-up booths

Concierge

Non-Prototype

Wireframes



Coded Prototype

Prototype

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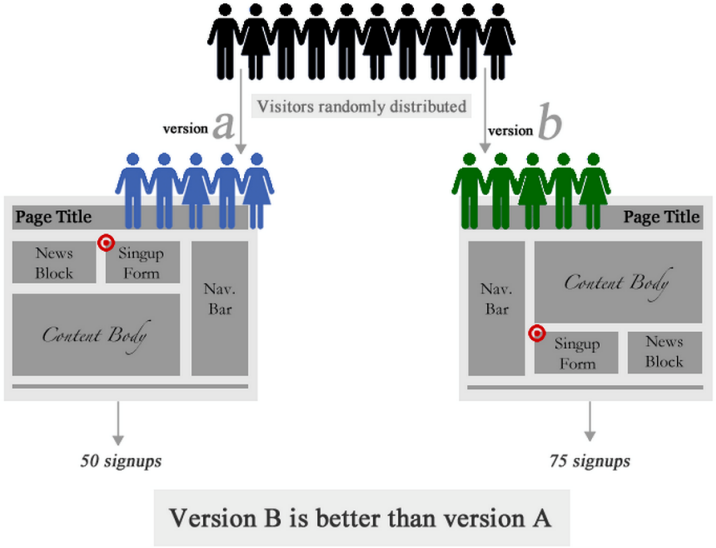
4. Building a Minimum Viable Product – experiment example

Version B

Version A



A/B Testing (split testing) in AirBnB

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4. Building an MVP - identify metrics that will measure your experiment

How to choose your metrics?

Actionable: demonstrate a clear cause and effect relationship so that you can take definitive action in response to it.

Accessible: be easily understood and available widely to people in the company.

Auditable: be able to go back to the source of data to prove that the metrics were telling the true (and entire) story.

AirBnB	Cohort A (With pro-images)	Cohort B (without pro-images)
# Registered	1045	900
# Bookings	10000	5500
% Repeat Bookings	55%	24%

- An MVP helps you answer a specific question about one of your assumptions
  - Test one assumption at a time
- Building an MVP is not a one-time event
- Measure **cohort-based** (i.e., a customer segment/group) metrics over time

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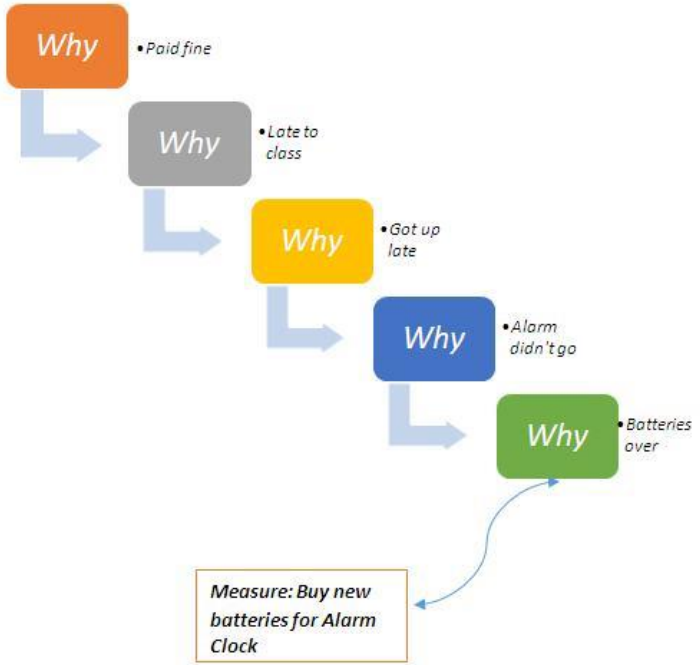
5. Learn from the results of the experiment

Five Whys Root Cause Analysis

- Ask “why” five times when **something unexpected happens.**
- Make **proportional investments** in prevention at all **five levels** of the hierarchy.
- Behind every supposed **technical problem** is usually a **human problem**. Fix the cause, not just the symptom.



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5. Learn from the results of the experiment

"I'm not leaving you. I'm pivoting to another man."

Pivot or Persevere?

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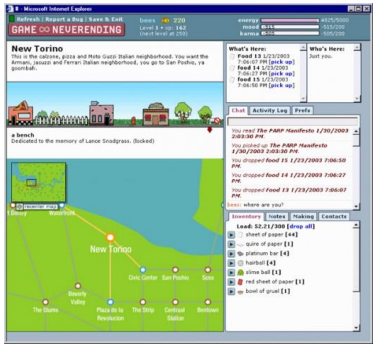
5. Learn from the results of the experiment

- **When do you Pivot?**
  - Your experiments show diminishing returns
- **When do you Persevere?**
  - You continue to learn from your MVPs, and your experiments show increasing returns



Flickr from MMORPG to Photo Sharing

YouTube from Video-Dating site To Video Sharing

Types of Pivots (not exhaustive)

1. Zoom-in pivot
2. Zoom-out pivot
3. Customer segment pivot
4. Customer need pivot
5. Platform pivot
6. Business architecture pivot
7. Value capture pivot
8. Engine of growth pivot
9. Channel pivot
10. Technology pivot

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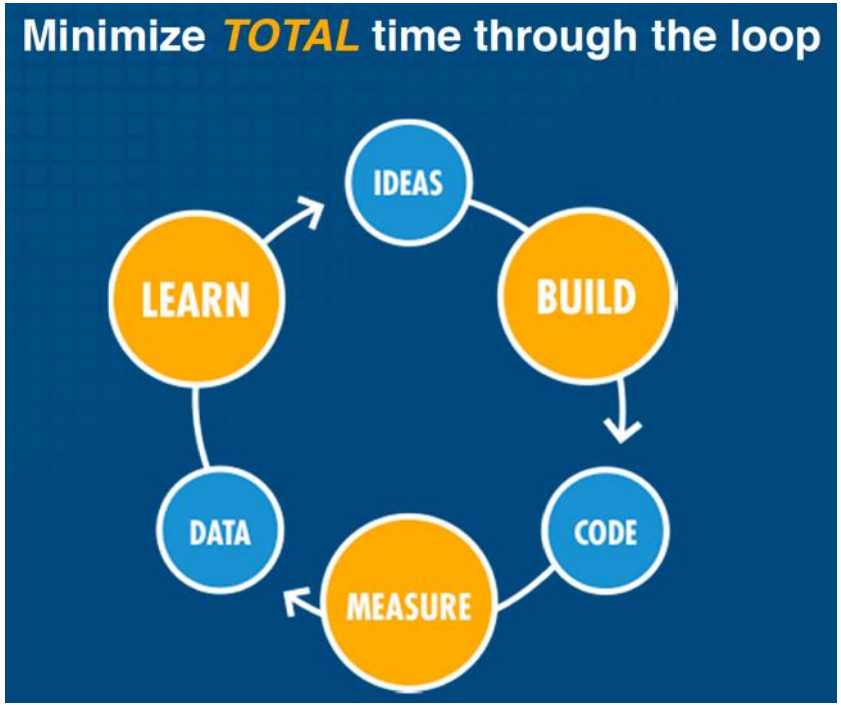
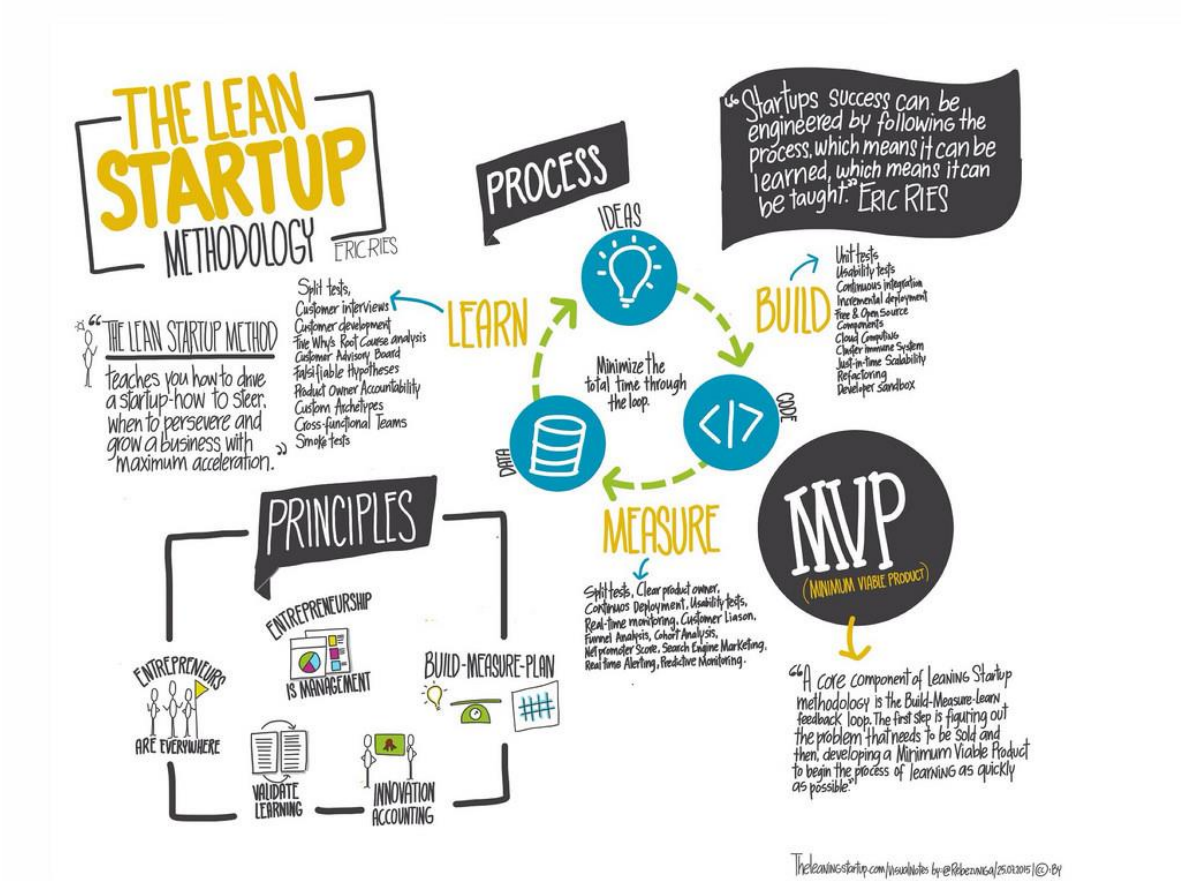
6. Iterate


Minimize TOTAL time through the loop
IDEAS
BUILD
CODE
MEASURE
DATA
LEARN

In Summary



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Business Analyst in a Lean Startup Environment

- **BA skill set: a gentle reminder**
  - Eliciting requirements
  - Customer interaction
  - Facilitation between business and tech
- **Where do BAs fit in?**
  - Design experiments
  - Analyse data
  - 5Whys
  - Customer development