



Service Science
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Acceleration

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Innovation Accounting (Recap)

- (1) Create an **MVP** and select **metrics**
 - Metric matters. Without a clear-eyed picture of actual situation, progress cannot be tracked
 - **Identify the baseline** (the actual KPI values)
- Repeat several times
 - (2) **Tune** the **engine** from the baseline toward the ideal
 - Every strategy and or engine requires **tuning** before reaching **optimality**
 - Identify **target** and **deadlines** (i.e., learning milestones)
 - Several “Build-Measure-Learn Feed-back loops” to tune an engine of growth
 - (3) **Pivot** or **Persevere** i.e.,
 - Persevere if the company is making **good progress** toward the ideal (i.e., learning is effective)
 - Dilemma in case of continuous negative results (or not enough positive): Pivot or Persevere?

Acceleration

- Start-up's **runway**
 - It is the **number of pivots** it can still make
 - The remaining time is related to the **available resources**
- Life-or-death **struggle to learn** how to build a **sustainable business** before running out of resources
- A start-up team may be faced with the question: Quality or Speed?
- E.g.,
 - better focus on solving existing problems ...
 - ... or focus on adding new features?

Quality vs Speed

- **Trade-off** between quality and speed.
- Again a **knowledge problem**
 - The Build-Measure-Learn-Feed-back loop can't be executed if
 - New **features**/experiments are **not implemented**
 - The **MVP**/product/service is **not working**
 - On the other side, solving **problems** that **don't matter** for customers is a waste of resources
- Underlying problem: the team doesn't have unlimited energy/resources (**resource limitation**)

How much Effort to solve Problem(s)?

- How to deal a (single) problem?
 - Ignore the problem as much as possible?
 - Allocate resources to fix it (removing resources from other activities)?
 - When several solutions are available
 - Solution A., Optimal, 3 man/months
 - Solution B., Sub-Optimal, 1 man/month
 - Solution C., Minimal, 0.5 man/month
- How to choose?
- When several problems arises, how to prioritize interventions?

Call for Adaptive Organizations

- General suggestion: it's dangerous to trade quality for speed
 - Problems not addressed early might require a lot of work later
 - Early adopter customers are forgiving about errors,
 - Other customers might be very scared about problems
- Speed regulators are required to find the optimal pace of work

5 Ws Methodology

- When a problem arises, the root-cause relationships should be investigated
- Suggestion: 5Ws Methodology
 - Keep asking "**Why**" until the **problem root cause** is identified (usually 5 steps are enough)
 - Once the problem root cause is clear, identify the possible **corrective actions** considering
 - the required **effort**
 - the **advantages** brought by the correction

Example

- A company suddenly start receiving complaints from customers about a just released product version
- Problem: The new release turned off a feature
 - (W1) Why? Because a particular **server failed**.
 - (W2) Why did the server fail? Because a **subsystem** was **used** in the **wrong way**
 - (W3) Why was it used in the wrong way? An engineer **didn't know** how to use it properly
 - (W4) Why didn't he know? Because he was **never trained**
 - (W5) Why wasn't he trained? Because his **manager doesn't train** new engineers because he and his team are "too busy"

Solutions

- Steps of the complete solution (8 weeks activities)
 - a) Fix the server (1 day)
 - b) Change subsystem to make it less error-prone (1 week)
 - c) Educate the engineer (7 weeks)
 - d) Have a conversation with the engineer's manager (1 hour)
- Which one(s) to execute?
- Suggestion: do a proportional investment
 - If the **outage** is a **minor glitch**, make a **minor investment** in fixing/training e.g., only *step (a)* i.e., 1-day activity
 - If the problem occurs **again**, or reveals as more **severe**, **go further** along the complete solution plan e.g., 1, 7, or 8-week activities, depending on the problem severity

5 Ws as Pace Regulator

- Considering the problem of a start-up team deciding whether to trade **quality for time**
- The 5 Whys approach acts as a natural **speed regulator**
 - The team build new features
 - The **more problems** the team has, the **more** the team **invests** in solution to those problems
 - As the investment in fixing problems pay off, the the severity and number of **crises** are **reduced** and the team speeds up again