Service Science
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Minimum Viable Product

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Recap

Start-up Definition (repeated)

- "A start-up is a **human institution** designed to create a **new product or service** under conditions of **extreme uncertainty**"
  Ries, Eric. The Lean Startup. The Crown Publishing Group
- Learning is the most vital function of organizations building under conditions of extreme uncertainty
- Start-up learning goal
  - Discover how to perform a **sustainable** (long term) **business**
  - Learn about which **elements of a strategy are working**, what **customers really want**, …
- Sustainable business:
  - To provide value to Customers
  - … and to Stakeholders
  - Long lasting (e.g., longer than initial aggressive advertisement campaigns)

Recap

… (more Details on the previous Lesson)

- (Failure Case) pets.com (on-line selling of pet products)
  - Very well known strategy: Get Big Fast (GBF)
    - Massive advertisement campaign
    - Initial aggressive below-the-cost pricing
  - Business model was not sustainable over time
    - Low profit margin sector (2% to 4%)
    - Not enough to cover the delivery costs
  - They failed to understand before running out of money
- (Success Case) Consumer Financial Protection Bureau (CFPB)
  - Tasked with protecting citizens against predatory financial services
  - Hotline (Call Center) as initial experiment to identify user needs

Traditional Approaches & Uncertainty

- Traditional Service Design and management ***Strategies*** *(*and related ***metrics****)* might be **not well suited** for highly **uncertainty scenarios**
- They strongly rely on existing knowledge
  - Planning and forecasting are only accurate when based on
    - a **long, stable operating history** and
    - a relatively static environment
  - Uncertain scenarios have neither

Two equally wrong Solutions

- Analysis (paralysis)
  - Endlessly refining strategies and plans
  - Unfortunately
    - most of the strategy **errors cannot be detected** at **whiteboard** level …
    - … because they depend on **subtle interactions** between **services/products** and **customers**
- "Just Do It" school
  - Summary: reduce planning/design activities and start work as early as possible
  - Unfortunately, this doesn't work either. Suggested reading "Robots slow down Tesla Model 3 production"
    https://www.theguardian.com/technology/2018/apr/16/elon-musk-humans-robots-slow-down-tesla-model-3-production

Very frequent Failures in Innovative Scenarios

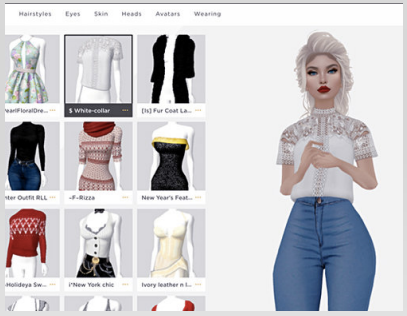
- A lot of “start-ups” / “new services”
  - either fail
  - or waste a lot of resources before working correctly
- Even if they have
  - a good plan
  - a solid strategy
  - prepared thorough market research
- **Call for a methodology**

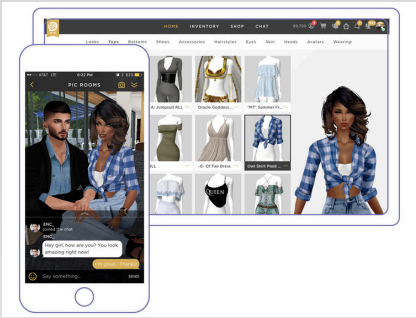
Minimum Viable Product

Introductory Case

IMVU Case

- IMVU
  - The world's largest avatar-based social network (… this is what they claim on their web site)
  - Already Introduced in previous lessons
- https://about.imvu.com/

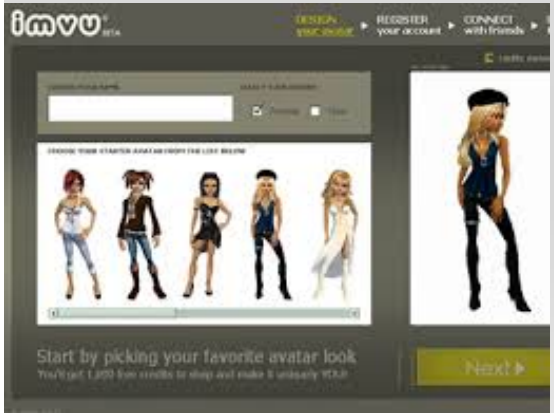




IMVU Beginning

- Start-up focusing on Instant messaging (IM) (e.g., MS Messenger, AOL Messenger, Yahoo Messenger, … <nowadays> Facebook Messenger)
- Idea: 3D Avatar based interaction

- Pictures of the (actual) avatar design process



Existing Knowledge & Assumptions

- The value of a Instant Messenger is on the customer base size (and of social network in general)
- Challenge: how to quickly build a large customer base?
- What would you do?
- IMVU initial choice: Plug-in for existing IM clients
  - Leverage existing IMs platforms and people connections
  - Further advantage, **avoiding "yet another IM application"**
- Underlying assumptions (in your opinion)?
  - People are likely to install the plug-in
  - Customers expected to invite friends
    - Leveraging existing contacts on Instant Messenger networks
    - Viral diffusion as expected growth strategy

Early Prototype Launch

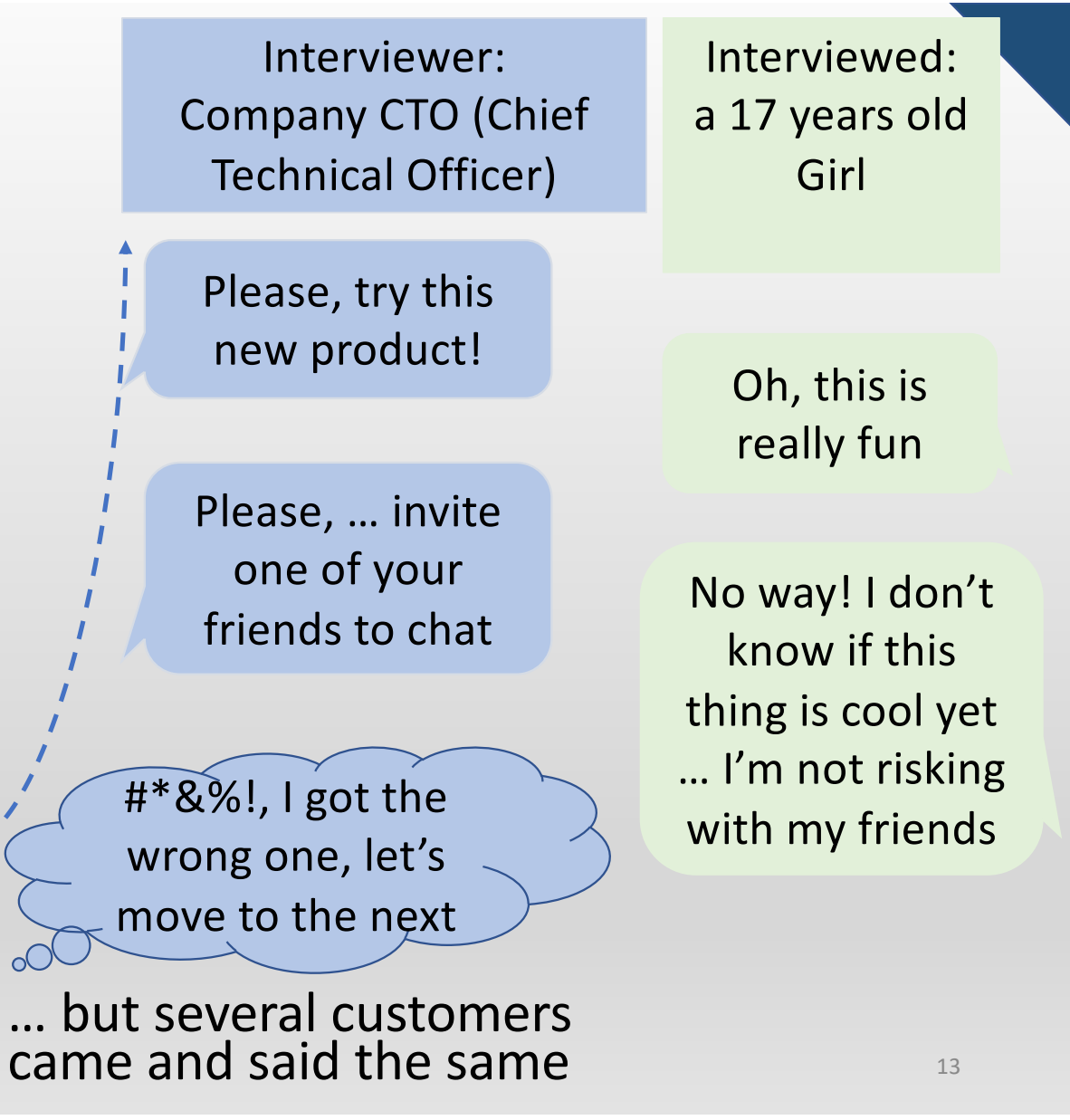
- Decision: early release of a *Low Quality* product
  - Deadline: **6 months to launch**
  - Product implications
    - A lot of missing features
    - Long discussions about priorities (which features to be in first prototype and which features to be added later)
    - A lot of bugs (i.e., not enough time for bug fixing)
  - Developers team very worried of loosing reputation
- What happened after launch?
  - **No downloads** at all
  - **Low quality** was **not a problem**, since **nobody was using the product**!

After launch Activities

- **Improvement activities** were immediately executed to counteract the disastrous beginning
- No noticeable improvement on download numbers
- Still (very) few people downloading the software
  - Many friends and family members were begged to download and use the product
  - But when they "run out of friends and family" … **customers**' behavior remained unchanged: they **still wouldn't use the product**

… We have a Problem!

- Customer interviews
  - Customers were not able to tell what they wanted
  - They revealed useful insights only through their action (or inaction) during experiments and interviews
- Interview example



Some more Experiments …

- "… I don't know if this thing is cool yet …"
- The management tried to add "single player mode" (expression borrowed from the gaming industries) to let people easily evaluate the product
  - Unfortunately, after single player mode customers still keep refusing … "No way, … I'm not inviting friends, …"
  - To summarize: the users called for a "feature" but eventually they didn't use it
- Users can hardly explicate what they want …
- … but they can recognize it when they see it

The turning Point…

- The “chat now feature” was created
  - The customer push a button …
  - … and is randomly matched with somebody else anywhere in the world …
  - … pushing the button at the same time.
- It worked and lead to a very interesting discovery

Interviewer: Company CTO

Interviewed:

Hey, I want to add [the just met guy] to my buddy list. Where’s my buddy list?

Oh, no, you don’t want a new buddy list; you want to use your [existing IM] buddy list.

Are you kidding me? A stranger on my [existing IM] buddy list?” I want here the buddy list

But you should manage yet another IM client

So what? **I already run 8 different IMs**. I want the buddy list!

Knowledge Harvested

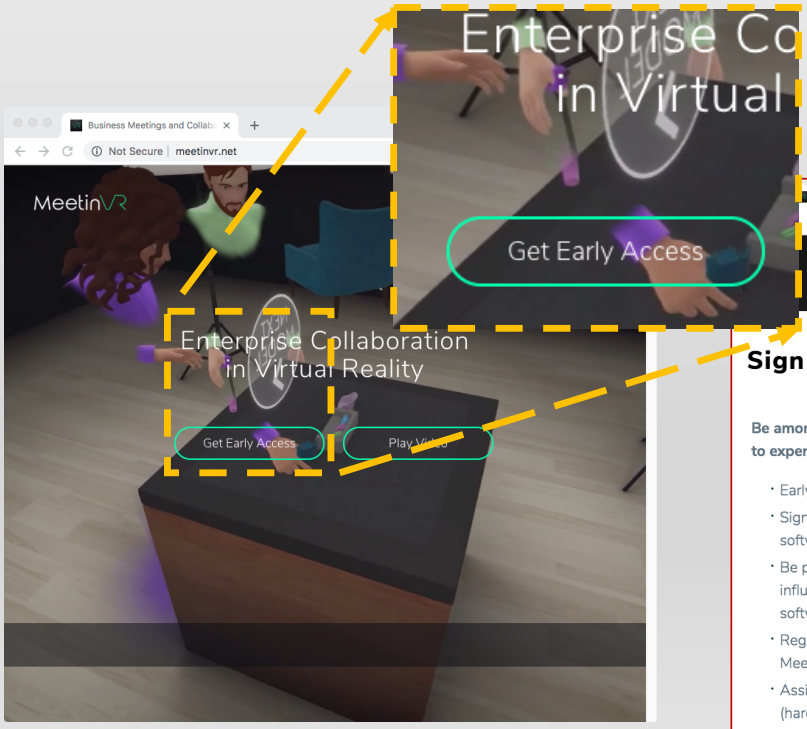
- The customers did not want an add-on for existing IMs; they wanted a new IM
  - "Yet-another-IM" was supposed being a problem …
  - … while the early adopters **already use many different IMs**
- Further experiments
  - Wrong assumption
    - "Customer want to use avatar-based IM with existing friends"
  - Discovery
    - Customers want to **make new friends** and …
    - … 3D avatars are particularly well suited

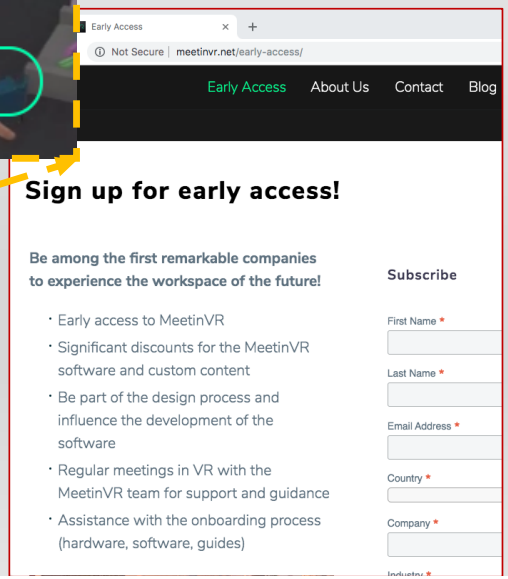
Post-Mortem Analysis

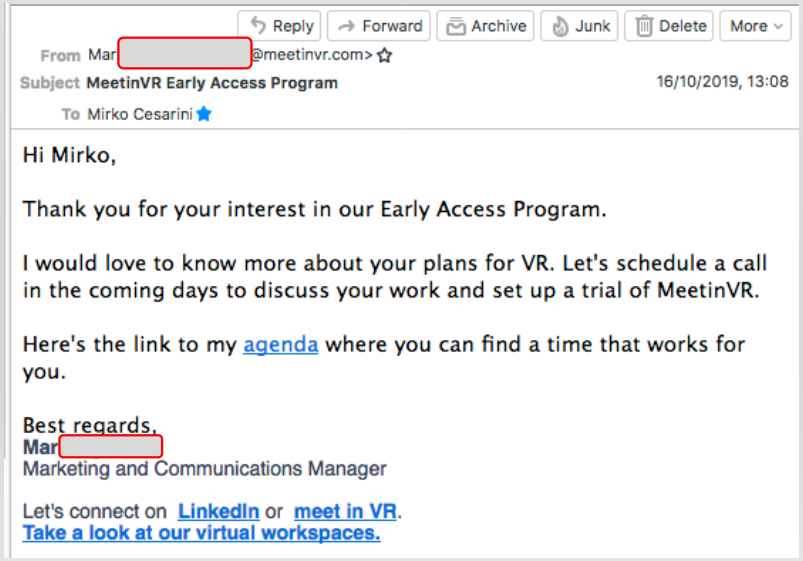
- 6 Months thrown away to build a product that customers refused to use
  - Better not doing the work at all?
  - No, otherwise the insights would never have been learnt
- **If the goal is learning, can it be done faster?**
  - E.g., an experiment offering a “fake download” / early adopters waiting list
    - No implementation. The download leads to a message: “ We are sorry … the product will be ready soon … would you like to join the waiting list?”
    - Goal:
      - Product/features appeal measured by the # of attempted downloads, #waiting_list_signin
      - Different feature sets can be tested with multiple experiment
      - Some customers can be contacted, given a demo, and interviewed
  - Real customer behavior observation is much more than asking them what they want

Reality Check

- Do you think the previous showed approach (i.e., fake_download/waiting_list) is not real?
- Web site meetingvr.net visited Oct 15th 2019





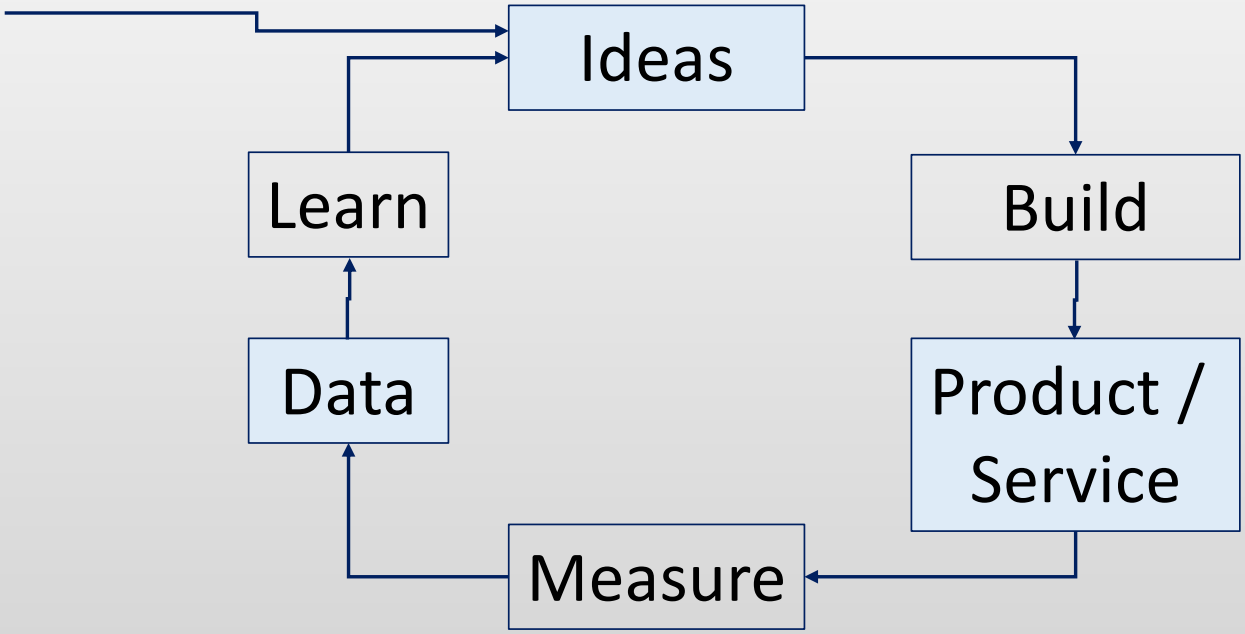


Validated Learning

Methodology & MVP

The Lean Start-up Methodology

Build-Measure-Learn Feed-back Loop



- Goals:
  - minimize the loop time
  - be sure that learning is real

What to learn?

- Every strategy/business plan is based on a set of **unproved assumptions** (which are frequently erroneous)
- Identify the **riskiest elements** of the plan
  - They are called "**leap-of-faith**" in the *lean start-up* terminology
  - The most important assumptions are always related to:
    - The **value hypothesis** (how the new service/product/… will bring value to the customers)
    - The **growth hypothesis** (how the organization is going to grew-up e.g., enlarging the customer base)
  - More on the next lessons

Assumptions & Questions

- Comparison with existing business can be useful
  - Analog: analogy
  - Antilog: reverse analogy
- Consider Steve Jobs evaluating whether to introduce the iPod or not
  - Will people listen to music in a public place using earphones?
    - Sony faced this question when introducing the walkman
    - (Analog) Apple already had the answer in the analog: Sony's Walkman
  - Would people pay for music?
    - (Antilog) Napster (audio sharing peer to peer community)
      - Free file sharing "peer to peer" network
      - Shut-down by lawsuit in 2011
- Analogs and antilogs can be useful
  - They can help formulating questions … and candidate answers
  - But don't give your definitive answers about your assumptions

Minimum Viable Product (MVP)

- How to effectively test hypothesis?
  - On real customers interacting with real products
  - Minimizing the effort of building a product
- Building a ***minimum viable product*** **(MVP)**
  - It is a product early version (not only a single test) ... E.g., you have to try to "sell" it
  - That enables to run the Build-Measure-Learn cycle
  - With **the minimum amount of** development **effort**
    - Everything not related to learning should be dropped!
    - Really everything!
  - Beware, if an MVP impact can't be measured (e.g., measuring potential customer reactions) it is not worth creating it

The MVP is that version of a new product which allows a team to collect the maximum amount of validated learning about customers with the least effort.

Ries, Eric. The Lean Startup. The Crown Publishing Group.

Example: Zappos Beginning

- In 1999 a company **selling shoes online** was launched
- The founder realized that there was no central online site with a large selection of shoes
- Inspiration came when the founder failed to find a pair of special shoes (brown Airwalks) at the local mall

Vision & Assumptions

- Zappos Vision
  - Large on-line catalogue (i.e., large selection of shoes)
  - Logistic and distribution excellence
- On-line selling was at the very beginning in 1999
- Riskiest assumption to be tested:
  - Would people buy shoes on the Internet without trying them?
  - Is there already sufficient demand for online shoes shopping?
  - Is the business sustainable?
  - How to test without building all the complex and costly infrastructure?
- What would you do?

Zappos MVP

- Nick Swinmurn, Zappos founder,
  - run an experiment
  - actually it was an MVP, not only an experiment
- He signed an agreement with some local shoe stores
  - He asked to take picture of the *shop inventory (catalogue) …*
  - … promising that
    - The pictures to be posted online and …
    - … Shoes bought from the local store at full price in case of sell

Zappos: not only an Experiment

- An experiment focuses on a single aspect while a well designed **MVP tests more aspects**
- E.g., Zappos prototype **tested several assumptions** involved with
  - Taking payment
  - Handling returns
  - Dealing with customers
- An early prototype can be **turned into** a **final product**, step by step
  - E.g., adding new features or improving existing ones
  - Activities can be prioritized on the basis of the obtained knowledge
- Interaction with **real customer behaviors** (… not on what customer think they want)
  - **Unexpected** customer **behaviors** revealed information not previously known to ask about e.g., customer returning shoes scenarios
  - Observation of **behaviors difficult to ask/predict in advance** e.g., what is the customer perception of discounted prices?

Zappos now

- Actually Zappos is an online shoe store, with annual gross sales in excess of $1 billion

- In 2008 Zappos was acquired by Amazon, but it keeps operating as an independent entity in the U.S.

Considerations on MPVs

- The **trick** with the MVP approach is to give customers the illusion of a **fully functional experience** even if it is not
  - As long as customers receive what they paid for,
  - it doesn’t matter if there is a clunky process behind the scenes
- An MVP delivers just enough functionality and value to appeal early adopters
- MVP Goals
  - To **validate** the **assumptions**
  - To **test hypotheses** about market needs,
  - To make **adjustments** to the service/product vision
  - To **prioritize** where to **invest** in future development