

Digitalization / Data Science
Project Phases

OC. Overall Capacity

1

Project Idea

2% OC.

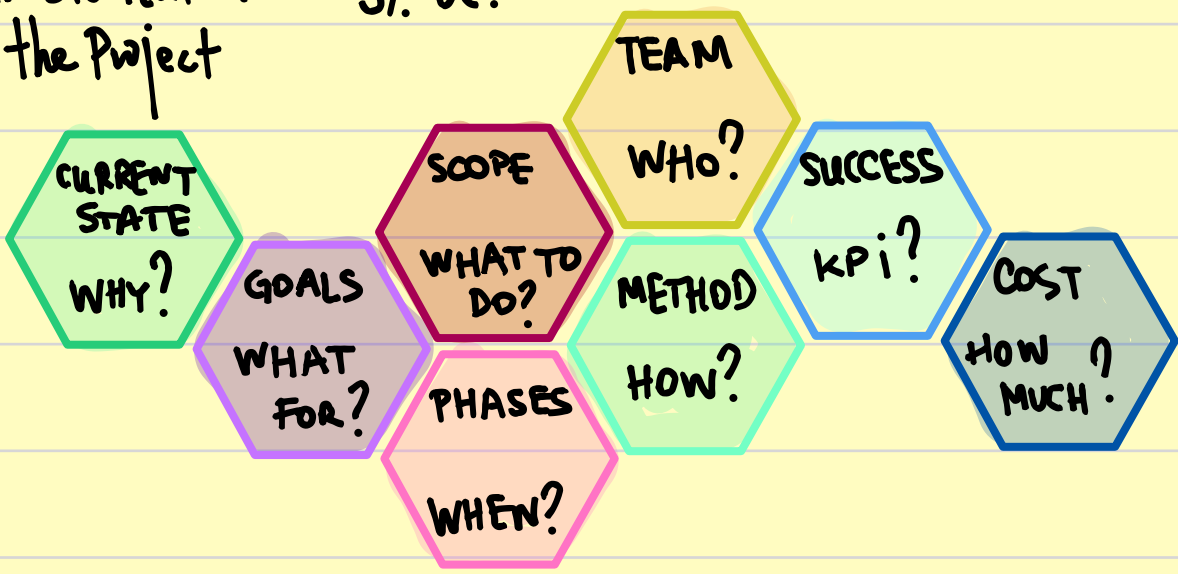
Who has the idea?

- IT-Department
- External Consultant
- Competition Project (Benchmarking)
- .. Roll-out / Standardization from Corporate (HQ)

2

Characterization of the Project

5% OC.



CURRENT STATE

OF THE VALUE STREAM

GOALS

- . COST CUTTING
- . Lead Time Reduction
-

SCOPE

WORKPACKAGES

PHASES

Time

TEAM

MIX of TALENTS

METHOD

- . SCRUM
- . LEAN
-
- . 6σ
- . AI

SUCCESS

- . KPI's
- . Time Performance
- . Budget "

COST

- . CASH FLOW
- . ROI

3

Data Identification 10% OC.

IIoT (Industrial Internet of Things)

- Every element in the process (including humans)

have a sensor attached to them. The sensor delivers data that needs to be computed.

- here we create **HUMAN-MACHINE** interaction that can be actionable at the next stages.

- We try to get / gather as much data from the customer and her behaviour as possible.

④ Data pre-processing 70% oc.

Netflix.
Million Dollar Code



4.1. Select the data.

- Anonymize data

- Data Security Policy

- Everything is written on paper

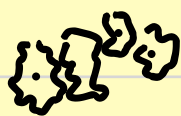
- How many variables?

- Transform the data.

- Clean the data.



4.2. Clean



4.3. Transform

- Normalizing / Scaling $[0,1]$ $[\mu, \sigma]$

- Remove outliers

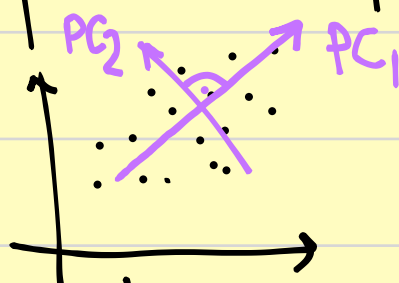
- Remove missing data

⑤ Analysis 10% oc.

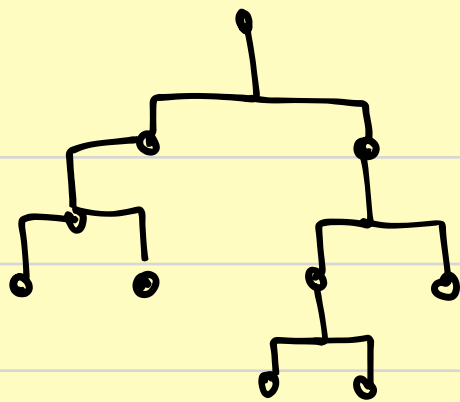
- Time Series



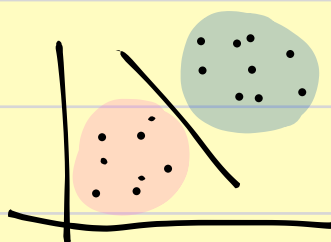
- Principal Component Analysis



- Hierarchical Clustering



• Support Vector Machines

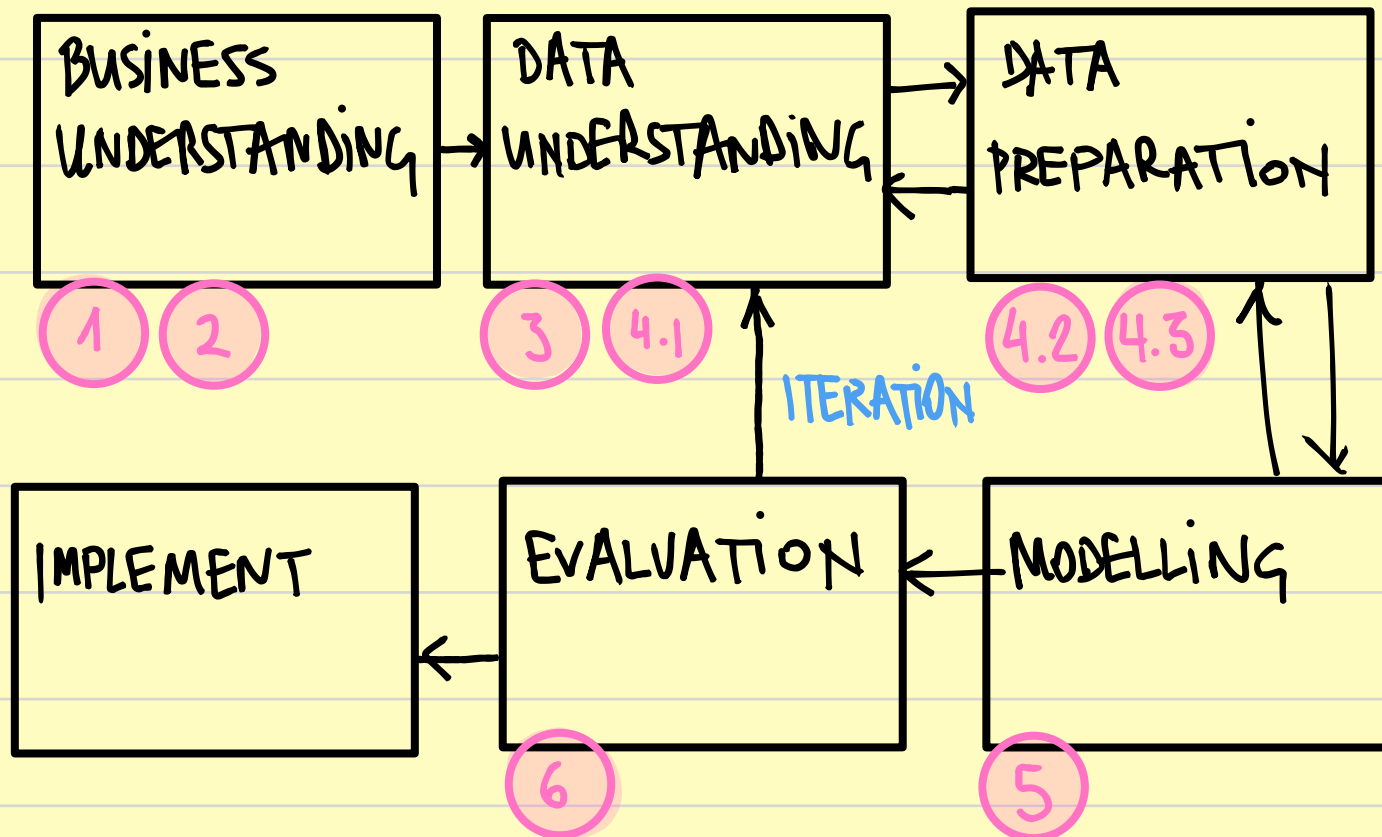


ANALYSIS	Characteristics	Implementation
Supervised (Experts)	We know how the solution looks like.	<ul style="list-style-type: none"> • Classification or Modeling. • Predictive Machine learning
Unsupervised	We do not know how the solution looks like.	<ul style="list-style-type: none"> • Clustering. • Dimensional reduction.
Semi-Supervised	Mixture of both	• Deep learning

⑥ Visualization of analysis results. 3% OC.

Here we make the analysis results available to the managerial level. In this manner, management can take proper decisions.

The logic of a digitalization project is ALWAYS iterative.



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