Target World Analysis (TWA)

A Method for Effectively Getting A Deep Understanding of The Customer's World

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1. Why Target World Analysis?

Why Do The Computer Systems Still Frequently Fail ?

- One reason: The developers do not have an deep enough understanding about the customer's world
  - There are many approaches: workshops with customers, "what do you want" kind of interviews, user observations, etc.
  - the results, however, are not convincing
- The results of usability evaluations show that
  - design problems that are most difficult to fix are due to the fact that the developers did not understand customer's world
- Steve Jobs: "*To be truly simple, you have to go really deep*".
  - Applied to Target World Analysis: "*To truly meet customer expectations, you have to go really deep*".

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What Is 'Target World'?

- *Target world is the section of the customer's world that the system-to-be-developed should support*
- For example, when a system developed to support the doctoral studies at the university, the target world is the *doctoral studies* of the university
- Analogously, the target world is
  - *enrollment to a hospital* (an enrollment system of a hospital)
  - *education of medicine* (education support system)
  - *operations of a company* (enterprise planning system)
- Target world depicts the customer – it is not specification of the computer system

The Rationale for Target World Analysis

- *The development team needs to have a deep knowledge about the target world, from the very beginning of the development project*
- By doing this, the design team ensures that
  - the design team starts to develop right system that fits the customer's world, from the very beginning the development
  - the team avoids unnecessary, difficult to fix problems later during the development cycle
- The customer has very seldom – if ever – a well analyzed and structured understanding of his/her own world
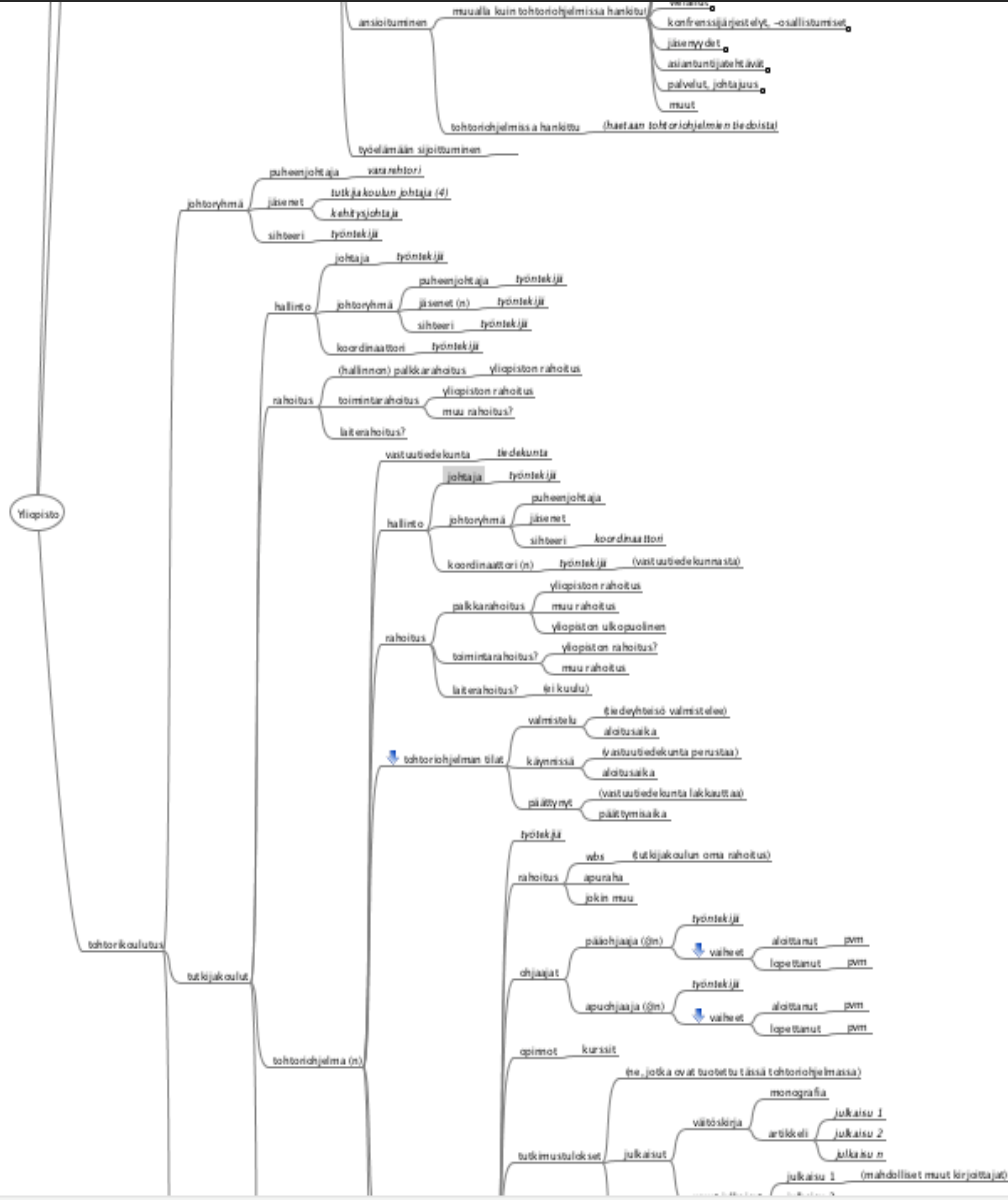
2. Three Fundamentals of Target World Analysis

Three Fundamentals

- The fundamentals are derived from user-centered design
  - specially, from usability testing and expert evaluations
- The fundamentals
  1. *The development team – not the customer - has the sole responsibility for the analysis, understanding, sense making, extensiveness and correctness of the target world*
  2. *It is possible to get a deep understanding of the target world in the very beginning of the development project with few resource.*
  3. *The result is a hierarchical model of the appropriate conceptual things of the target world, and their mutual relationship*

- ansioituminen
  - muualla kuin tohtoriohjelmissa hankitut
    - vierailut
    - konferenssijärjestelyt, -osallistumiset
    - jäsenyydet
    - asiantuntijatehtävät
    - palvelut, johtajuus
    - muut
  - tohtoriohjelmissa hankittu (haetaan tohtoriohjelmien tiedoista)
- työelämään sijoittuminen

johtoryhmä
- puheenjohtaja — vararehtori
- jäsenet
  - tutkijakoulun johtaja (4)
  - kehitysjohtaja
- sihteeri — työntekijä

hallinto
- johtaja — työntekijä
- johtoryhmä
  - puheenjohtaja — työntekijä
  - jäsenet (n) — työntekijä
  - sihteeri — työntekijä
- koordinaattori — työntekijä

rahoitus
- (hallinnon) palkkarahoitus — yliopiston rahoitus
- toimintarahoitus
  - yliopiston rahoitus
  - muu rahoitus?
- laiterahoitus?

vastuutiedekunta — tiedekunta

hallinto
- johtaja — työntekijä
- johtoryhmä
  - puheenjohtaja
  - jäsenet
  - sihteeri — koordinaattori
- koordinaattori (n) — työntekijä (vastuutiedekunnasta)

rahoitus
- palkkarahoitus
  - yliopiston rahoitus
  - muu rahoitus
  - yliopiston ulkopuolinen
- toimintarahoitus?
  - yliopiston rahoitus
  - muu rahoitus
- laiterahoitus? (ei kuulu)

tohtoriohjelman tilat
- valmistelu
  - (tiedeyhteisö valmistelee)
  - aloitusaika
- käynnissä
  - (vastuutiedekunta perustaa)
  - aloitusaika
- päättynyt
  - (vastuutiedekunta lakkauttaa)
  - päättymisaika

- työntekijä
- rahoitus
  - wbs (tutkijakoulun oma rahoitus)
  - apuraha
  - jokin muu
- ohjaajat
  - pääohjaaja (@n)
    - työntekijä
    - vaiheet
      - aloittanut — pvm
      - lopettanut — pvm
  - apuohjaaja (@n)
    - työntekijä
    - vaiheet
      - aloittanut — pvm
      - lopettanut — pvm
- opinnot — kurssit
- tutkimustulokset
  - (ne, jotka ovat tuotettu tässä tohtoriohjelmassa)
  - julkaisut
    - väitöskirja
      - monografia
      - artikkeli
        - julkaisu 1
        - julkaisu 2
        - julkaisu n
    - julkaisu 1 (mahdolliset muut kirjoittajat)

Yliopisto
- tohtorikoulutus
- tutkijakoulut
  - tohtoriohjelma (n)

3. How the Target World Analysis (TWA) Is Described?

How the Target World Analysis Is Described?

- Target World Analysis is a method
  - methods, in principle, consist of steps:
    - "Do step #1, do step # 2, etc."
  - one option is to describe a method as a 'cook book'
- The 'cook book' approach, however, does not work
  - Target World Analysis in an 'intellectual' method (as many other methods are)
  - applying the method requires thinking and understanding
  - a simple 'follow these steps' application of the method does not work
- Therefore, the method is described with *three pillars*

The Three Pillars

1. *Principles*
   – thinking and operational principles (nine) that are applicable throughout the analysis process
   – for example: "*The analyst 'does the work' and has the responsibility of the quality of the result of the analysis*".

2. *Modeling*
   – how to create, and what are the characteristics of the result, the *TWA model*
     - how to create a hierarchical model, created with a mind map tool (a necessity!)
     - how to include the right things and their relationships, and how to appropriately structure them as hierarchy
     - the right terminology (unique, customer driven names of the things)

3. *Process*
   – the 'cook book' part of the description: how the interviews, modeling and thinking form a step-wise process

4. Experiences of The Target World Analysis

How Many Resources Are Needed?

- The amount of the required resources depends on
  - how complex the target world is
  - how well the interviewees know the target world
  - how well the interviewees can articulate what they know
- In many cases, three (3) consultancy days are adequate to achieve a reasonable good insight of the target world
  - includes three interview sessions, and time for 'thinking' and modeling

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Feedback

- Feedback statements
  - *"One gets an overall picture in a glance, and also can go into details to make sure that everything is included".*
  - *"It is surprising how much we advanced in a single interview session".*
  - *"The basics of specifications, we always go back and check the TWA model".*
  - *"A concise package of a large amount of knowledge".*
  - *"The viewpoints of all participants are included".*
  - *"One understands how large is the subject matter".*
- A kind of summary feedback:
  - *"An must approach to start any project, so that one is able to make sure that all speak the same language and understand the things in the same way".*
- My summary
  - *When the analyst understands the customer's world, the customer understands it, too".*

Thank you!

- Any questions: timo.jokela@joticon.fi
- The book (in Finnish): https://www.ketteratkirjat.fi/kirjat/36229

Jouni's addition

During the TWA process, you should ask your customer's

- data needs (queries, forms and reports)
- quantities (amount of data) and type of data

$\Rightarrow$ Helps completing the data models

$\Rightarrow$ Helps deciding what the target DBMS is and what indexes are needed