VSR | EDU

Current Trends
in
Web Engineering

Current Trends in Web Engineering

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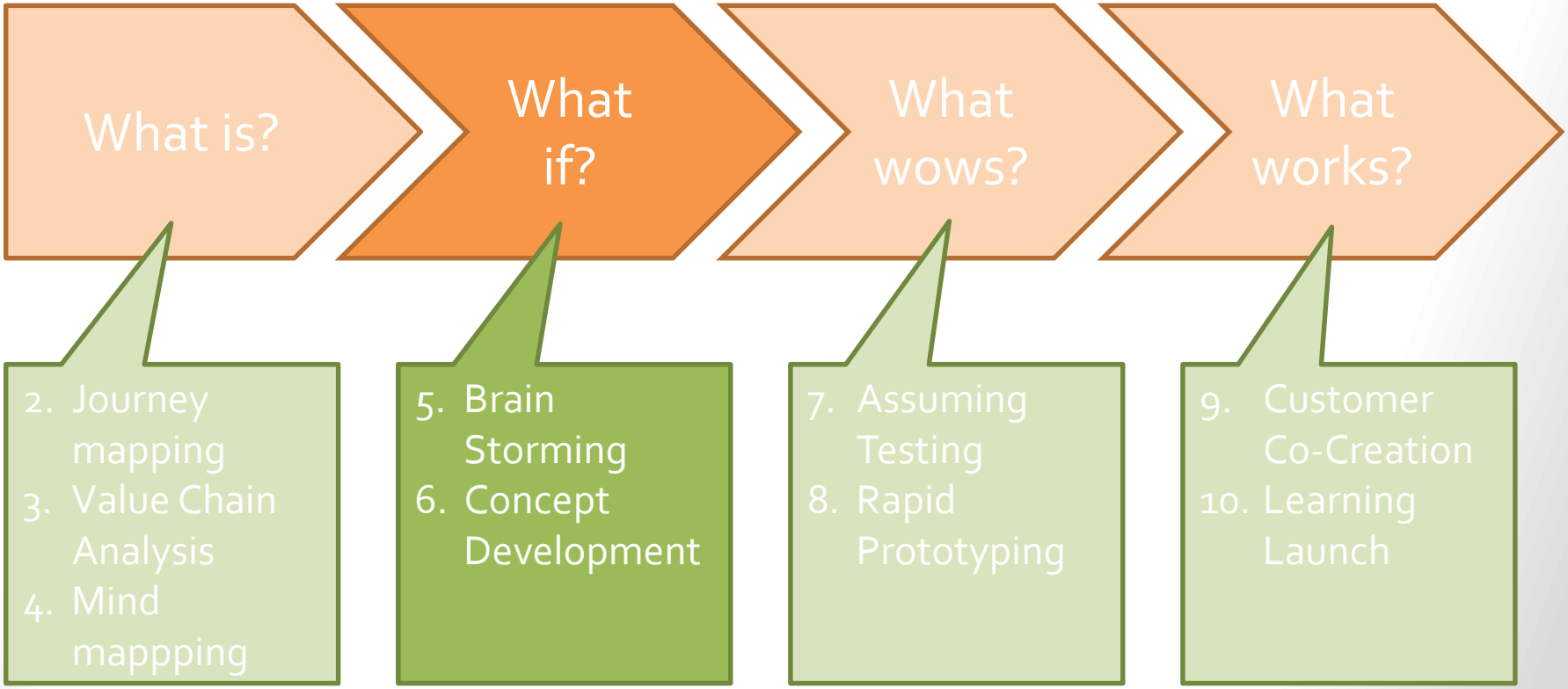
SECTION://4

- What if?

[based on "Designing for Growth", Liedtka and Oglivie]

Four Questions, One set of tools/methods



1. Visualization (apply for all questions in all phases)*

* Check the many books out there about learning to visualize things. Try it at home.
(Some Books: "Gamestorming", "Unfolding the napkin", "Visual Meetings", "Sketchnote Handbook“ etc.)

Design Criteria

- Extends the information related to the design brief
- Specifies in more detail project´s scope and direction
- Structure
  - Design Goal
    - Create a scalable web site that fits well for desktop and mobile devices for the customer pain point:
      Searching for the University
  - User Perception
    - Easy to use
    - Trustable – because of transparency regarding source of data
  - Physical Attributes
    - -- Usually not applicable in our case --
  - Functional Attributes
    - Responsive Design
    - Should allow to compare universities
  - Constraints
    - Proof-of-concept model possible in 6 months

Tools/Methods

- **Start creating MANY IDEAS**
  - Brainstorming (cf. Gamestorming)
  - Create more ideas
  - Ideally done by a diverse group
- **Concept Development** – choosing the best ideas to make ideas real
  - Build a set of concepts to offer a choice to the audience
  - E.g. 12 concepts, test 3 with customers, finally implement 1
  - Ideally done by a core team

104 H G D

Create
Brainstorm New Solutions

Facilitator Notes

Time:
45-60 mins.

Difficulty:
★★★★☆

Step 1. Prepare 3-5 "How Might We...?" opportunity statements from those generated previously. Place each statement on a separate wall or board. Give each person post-it notes and a marker.

Step 2. Remind people of the rules of brainstorming. Tell them to be very specific about the ideas they are proposing. Use big markers (not pens) so everyone can see what the idea is. Write only one idea per post-it.

Step 3. Begin by asking the group to generate a list of barriers related to the opportunity statement.

Step 4. Protect all participants by enforcing the Rules of Brainstorming. If ideas slow down, prompt the group to think about one of the barriers listed during the warm-up. Or share a story from the research to spark thinking (i.e. "So what ideas would encourage Shashu to adhere to her medication?")

Step 5. When the ideas really slow down, switch to a new opportunity area. This might be 15-30 minutes per HMW.

STEP 5

BRAINSTORM NEW SOLUTIONS

Brainstorming gives permission to think expansively and without any organizational, operational, or technological constraints.

Some people think of brainstorms as undisciplined conversation. But conducting a fruitful brainstorm involves a lot of discipline and a bit of preparation.

The practice of generating truly impractical solutions often sparks ideas that are relevant and reasonable. It may require generating 100 ideas (many of which are silly or impossible) in order to come up with those three truly inspirational solutions.

TIP

SEVEN BRAINSTORMING RULES

- **Defer judgment**
  There are no bad ideas at this point. There will be plenty of time to judge ideas later.
- **Encourage wild ideas**
  It's the wild ideas that often create real innovation. It is always easy to bring ideas down to earth later!
- **Build on the ideas of others**
  Think in terms of 'and' instead of 'but.' If you dislike someone's idea, challenge yourself to build on it and make it better.
- **Stay focused on topic**
  You will get better output if everyone is disciplined.
- **Be visual**
  Try to engage the logical and the creative sides of the brain.
- **One conversation at a time**
  Allow ideas to be heard and built upon.
- **Go for quantity**
  Set a big goal for number of ideas and surpass it! Remember there is no need to make a lengthy case for your idea since no one is judging. Ideas should flow quickly.

(Source: Human Centered Design Toolkit, 2nd Edition, by IDEO)

And now that we have 3+ concepts?

- We need to compare them…

SECTION://5

- What wows?

[based on "Designing for Growth", Liedtka and Oglivie]

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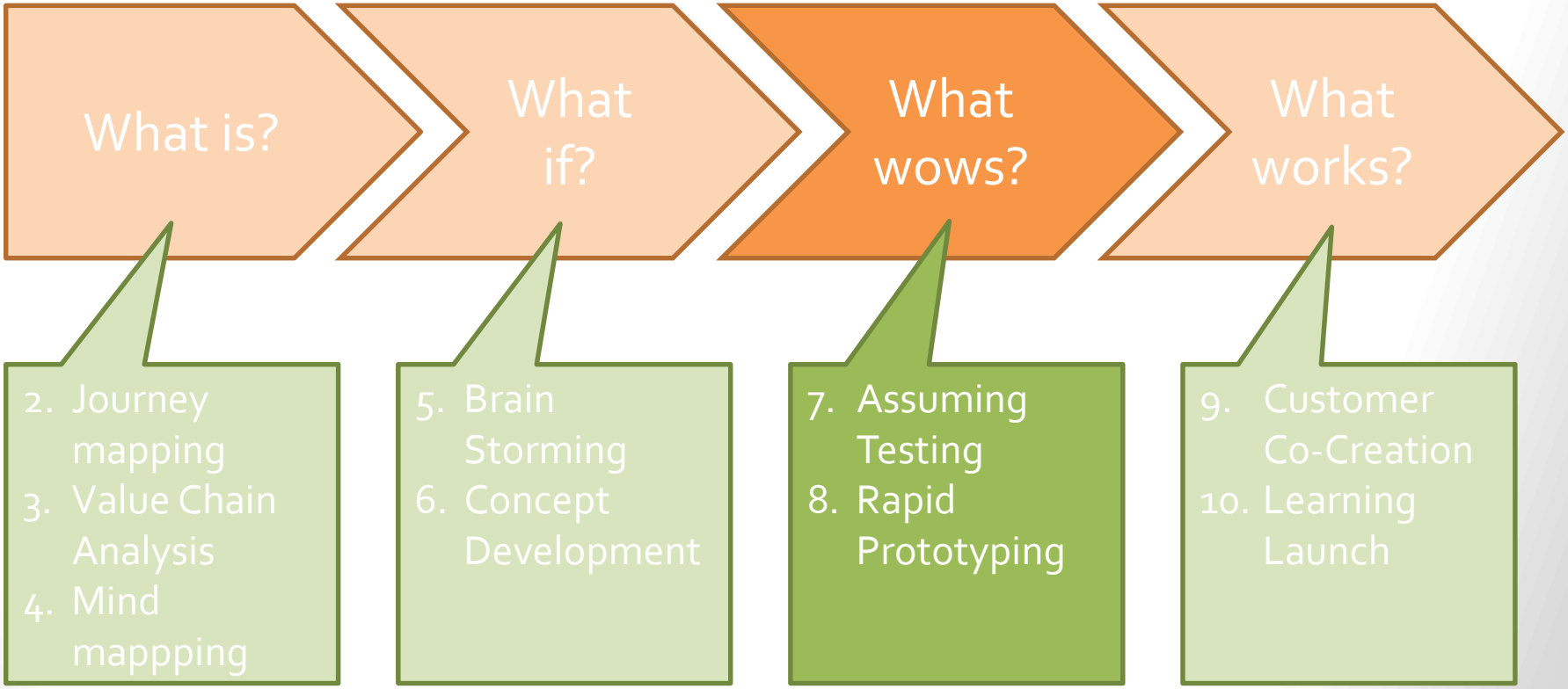

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Napkin Pitch

- It is not elivator pitch
- Helps to compare different concepts with more depth, focusing on
  - Need
    What is the customer's unmet need we are addressing
  - Approach
    What is our approach to address the need and what is novel about it
  - Benefit
    How does the customer and we benefit
  - Competition
    What competition will we face and what are our advantages

Napkin Pitch: Search Support Web Site	
Need • Finding information about a dedicated university program • Want to feel safe (well informed) before drawing decision	Approach • Web Site registered with 5 most influential study-sites • Pay-to-be-found • 1 Single site with all necessary information • Easy to navigate (including mobile devices)
Benefit • Candidates are supported on their devices (smartphone) • A/B Testing of future programs • Getting contact details	Competition or Other Service Providers • … • …

Tool/Method: Assumption Testing

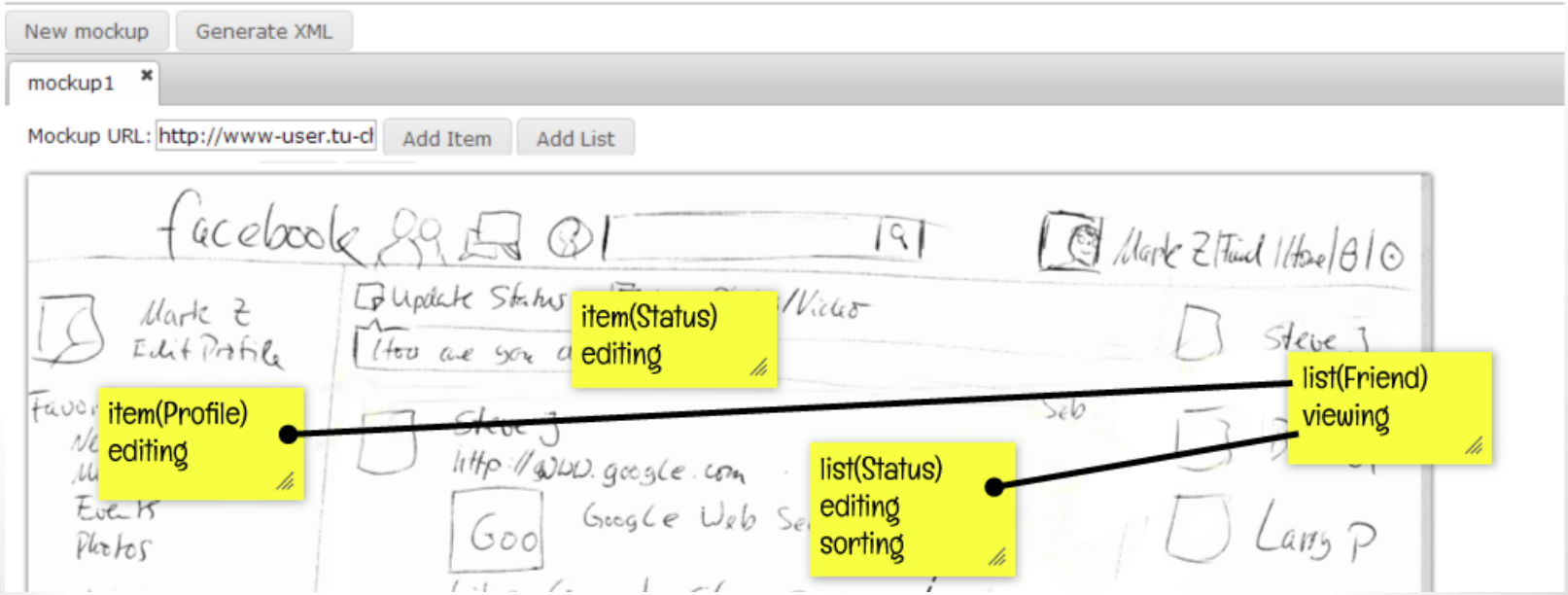
- Introduction to the tool:
  - Any new business concept is acutally a hypothesis, i.e. a well-informed guess about what customers desire and what they will value
  - The hypothesis is built on some assumptions – so, it is necessary to proof if these are valid
- When to use it:
  - Apply when concepts defined
  - Might even be applied earlier in the process

Tool/Method: Assumption Testing

- How:
  1. Define generic business tests your new concept must pass
  2. Define specific business tests your new concept must pass
  3. Make sure assumptions addressed in each individual test are as explicit as possible
  4. Determine which assumptions are most critical/important to attractiveness of the new concept
  5. Identify required data to test assumptions (include these of the doubting colleagues)
  6. Sort data you need (e.g. by what you know, don't know, can't know, and don't know but could
  7. Figure our how you could quickly get data
  8. Design experiment to prove assumptions

Tool/Method: Rapid Prototyping

- Develop first prototypes to better understand your solution – focus on time and costs
- Developing code is usually a bad approach



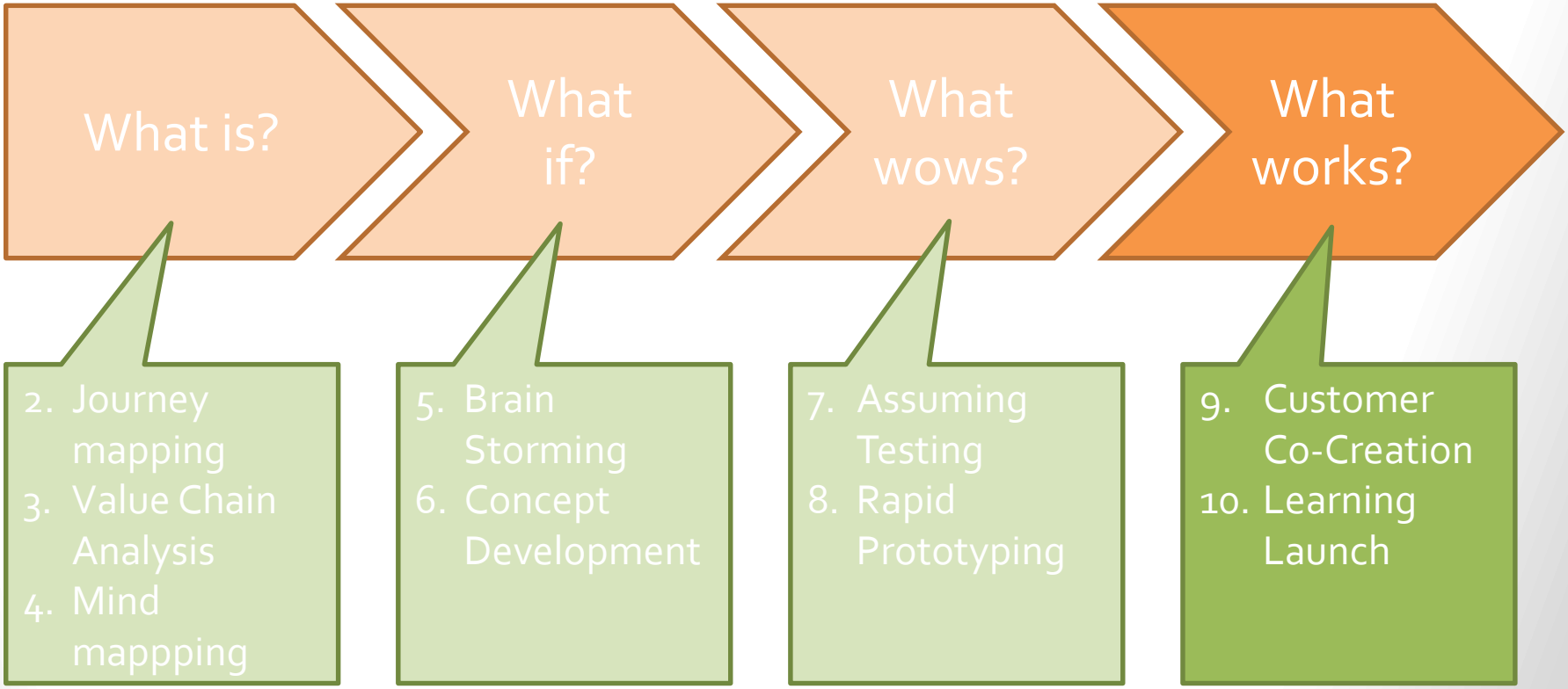
José Matías Rivero, Sebastian Heil, Julián Grigera, Martin Gaedke, Gustavo Rossi: "MockAPI: An Agile Approach Supporting API-first Web Application Development", in LNCS Spring "Web. Engineering - 13th lntemational Conference"

SECTION://6

- What works?

[based on "Designing for Growth", Liedtka and Oglivie]

Four Questions, One set of tools/methods



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Time to get real

- Get in touch with the market place
- Check Your **Invention versus** (…is it also an) **Innovation**
- Does the invention create economic value

- Time to check with reality and customers

Not a pilot – customer co-creation

- Learn from potential customers
  - Enroll customers you care about
  - Enroll customers that would find you via dedicated sources (e.g. based on adwords)
- Make some prototypes available and observe reactions, regarding
  - Missing functionality
  - Questions about Potential Price Offerings
  - Etc.
  - And your assumptions
  - The more you learn the better – ask questions if face-to-face testing
- Co-creating is also possible without any prototype: A/B testing of potential product/service announcements

After all that…

- Stop or plan your launch.

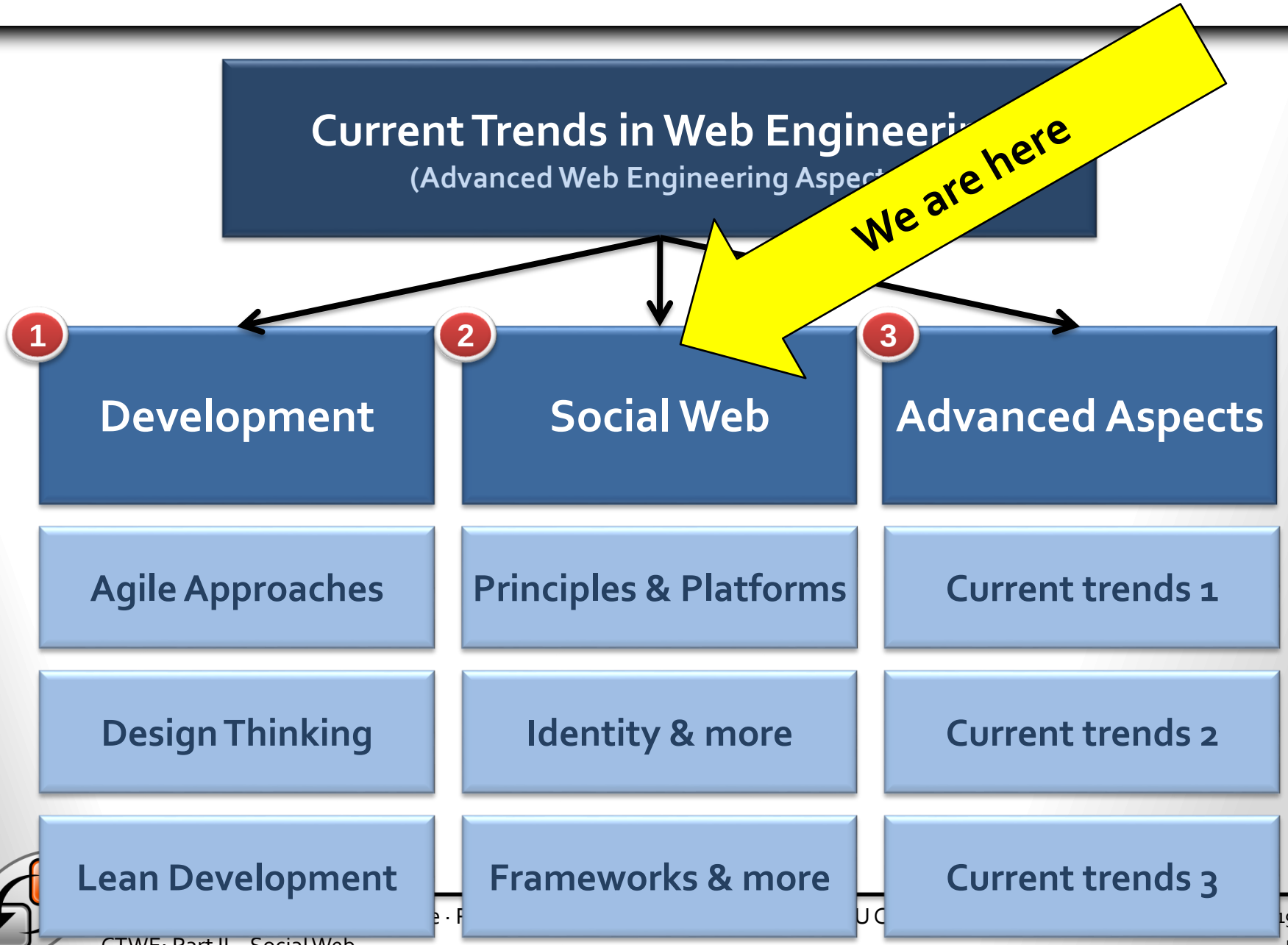
Demo

- A Quick View at HCD for more sources about methods/tools

PART II

- Social Web

Lecture Outline



Important MUST-DO Homework

- Goal is to discuss the technologies, architecture, principles, methods, and processes used in the new trend defined by the project **solid**, which focuses on giving users control over their data back in a revolutionary way.
  - Introduced by Tim-Berners Lee
  - https://medium.com/@timberners_lee/one-small-step-for-the-web-87f92217d085
- This is a MUST-READ document
  - https://solid.inrupt.com/docs/getting-started
- Please also check out and read the corresponding documents of the solid community for discussing in the next lectures:
  - https://solid.mit.edu
  - https://solid.inrupt.com

The SoLiD Specification

- So, let's talk about SoLiD:
  - https://github.com/solid/solid-spec/blob/master/README.md
- What about? Can you answer or explain?
  - Identity – how is this implemented?
  - Profiles – what are WebID Profile Documents?
  - Authentication – How is it implemented?
    - Primary Authentication – What is it & why is it difficult?
    - WebID-TLS – How does it work?
    - Alternative Authentication Mechanisms – Are there any?
  - Authorization and Access Control – How does it work?
    - Web Access Control – What is it?
  - Content Representation – What is an LDP server?
  - Reading and Writing Resources – How does it work? What is globbing?
  - Social Web App Protocols – What are they for?