TDDD75

Effects-Driven Development and Human-Centred Design of Interactive Systems

Effect HCD

Teachers

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- Johan Blomkvist, Senior lecturer in Design, Examiner and course leader

- Stefan Holmlid, Professor in Design

- Eva Ragnemalm, Senior Lecturer in Computer Science

Aim

- You will in this course acquire knowledge about design and evaluation methods for human-centered and effects-driven development and procurement of interactive systems.

Task

- **Re-invent** an interactive service for students and/or employees at the university.

After the course you will be able to

- Utilize human-centered methods in the form of a design thinking toolkit to define values in use for an interactive system

- Identify and define measurable effect goals for an interactive system using impact mapping

- Conduct a user evaluation of an interactive system and argue for improvements to it based on the user evaluation in relation to its effect goals, using assumption testing, rapid prototyping, and customer co-creation in relation to impact mapping

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Organization

- Three assignments with related workshops.
    - Assignment 1 and 2 form steps in a group work project with two mandatory presentations, and they also contain non-mandatory individual parts that should be completed if you strive for grade 4 or 5.
    - Assignment 3 is an individually performed review of the literature and includes mandatory participation in workshops.
- Course literature
- Workshops

Examination

- ## Assignment 1–2:
  - Grade 3: Active participation in the group work.
  - Grade 4 or 5: In addition, *Individually* performed assignments at the end of the course.

- ## Assignment 3:
  - Grade 3: Preparations to and attendance at workshops.
  - Grade 4 or 5: In addition, a more comprehensive literature review with analytical distinction at the end of the course.

- ## Course grades:
  - The mean of the grades for the three assignments (3.5 is rounded up to 4, and 4.5 is rounded up to 5).

Course Evaluation

- The course worked well with a balanced workload.

- Changes to this year:

  - The lectures were not well-attended and have been merged with the seminars into workshops with a focus on doing rather than only listening.

Mandatory Course Literature

- Adzic, G. (2012). Impact Mapping: Making a Big Impact with Software Products and Projects.Woking: Provoking Thoughts Limited.
- Arvola, M., & Holmlid, S. (2015). User Experience Qualities and the Use-Quality Prism. In NordiCHI 2014 Workshop - The Fuzzy Front End of Experience Design. Helsinki, Finland, October 26, 2014. VTT Technology. https://www.ida.liu.se/~matar63/fuzzy-UXQ-final.pdf
- Bertini, P., & Plumley, E. (2014). Co-creation: Designing with the user, for the user. UX Booth. https://www.uxbooth.com/articles/co-creation-designing-with-the-user-for-the-user/
- Justinmind (n.d.). Lean UX: How to get started. UX Planet. https://uxplanet.org/lean-ux-how-to-get-started-bb3771697e2
- Liedtka, J., & Ogilvie, T. (2011). Designing for Growth: A Design Thinking Tool Kit for Managers. New York: Columbia University Press.

...cont.

Mandatory Course Literature, contd.

- Nessler, D. (2016). A guide to paper prototyping & testing for web interfaces. DXD Digital Experience Design. https://medium.com/digital-experience-design/a-guide-to-paper-prototyping-testing-for-web-interfaces-49e542ba765f
- Mansfield, D. (2018). 15 creative exercises that are better than brainstorming. HubSpot. https://blog.hubspot.com/marketing/creative-exercises-better-than-brainstorming
- Overkamp, T., Blomkvist, J., Rodrigues, V., Arvola, M., & Holmlid, S. (2018). Resource integration as a perspective on value in interaction design. In British HCI 2018. BCS Learning and Development Ltd. http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-149602
- Turner, C. W. (2011). A Strategic Approach to Metrics for User Experience Designers. J. Usability Studies, 6 (2), Article 6, 8 pages. http://uxpajournal.org/a-strategic-approach-to-metrics-for-user-experience-designers/
- Vidal, Quinteiro, G. (2018). How to create a customer journey map (step by step). Aerolab. https://aerolab.co/blog/customer-journey-map

Workshops (and readings for them)

1. Design brief and research planning:
   - Liedtka & Ogilvie (2011), pp. 1-48.
   - Arvola & Holmlid (2015).

2. Visualization and journey mapping:
   - Liedtka & Ogilvie (2011), pp. 49-73.
   - Vidal Quinteiro (2018).

3. Value and impact mapping:
   - Liedtka & Ogilvie (2011), pp. 75-91.
   - Overkamp, Blomkvist, Rodrigues, Arvola, & Holmlid (2018).
   - Adzic (2012).

4. Brainstorming and concept development:
   - Liedtka & Ogilvie (2011), pp. 93-120.
   - Mansfield, D. (2018).

5. Assumption testing, costs, and benefits:
   - Liedtka & Ogilvie (2011), pp. 121-139.
   - Turner (2011).

6. Rapid prototyping:
   - Liedtka & Ogilvie (2011), pp. 141-150.
   - Justinmind (2018).
   - Nessler, D. (2016).

7. Customer co-creation:
   - Liedtka & Ogilvie (2011), pp. 151-178.
   - Bertini & Plumley (2014).

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Optional Course Literature

- Bettencourt, L. A., Lusch, L. F., & Vargo, S. L. (2014). A Service Lens on Value Creation: Marketing's Role in Achieving strategic advantage. California Management Review, 57(1), 44-66. http://www.sdlogic.net/uploads/2/7/3/5/2735531/cmr5701_03_bettencourt.pdf

- Giacomin, J. (2015). What Is Human Centred Design?. The Design Journal, 17(4), 606-623. https://doi.org/10.2752/175630614X14056185480186

- Hertzum, M., & Simonsen, J. (2011). Effects-driven IT development: Specifying, realizing, and assessing usage effect. Scandinavian Journal of Information Systems, 23 (1). http://iris.cs.aau.dk/tl_files/volumes/volume23/no1/Hertzum-23-1.pdf

- Kimbell, L. (2011). Rethinking Design Thinking: Part I. Design and Culture, 3(3), 285-306. https://doi.org/10.2752/175470811X13071166525216 (accessed 2018-12-14). Kimbell, L. (2012). Rethinking Design Thinking: Part II. Design and Culture, 4(2), 129-148. https://doi.org/10.2752/175470812X13281948975413

- Leavy, B. (2010). Design Thinking - a new mental model of value innovation. Strategy & Leadership, 38 (3), 5-14. http://www.emeraldinsight.com/doi/full/10.1108/10878571011042050

- Markensten, E., & Artman, H. (2009). Bridging the gap: Redifining early in user-centered design. In H. Artman, S. Holmlid, A. Lantz, S. Lindquist, A. Swartling, and U. Dovhammar, (eds.), Acquisition of usable IT: Acquisition projects to reflect on. Technical Report, HCI-66, Royal Institute of Technology, pp. 50-70. ftp://ftp.nada.kth.se/IPLab/TechReports/HCI-66.pdf

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Assignment 1 What Is and What If?

- Choose an interactive system (application or service) used by students and/or employees at the university and **re-invent** it to meet the goals of both users and other stakeholders, while also responding to changes in student population and university conditions over the next ten years. Make sure to meet both challenges and opportunities.

(Liedtka & Ogilvie, 2011, p. 36).
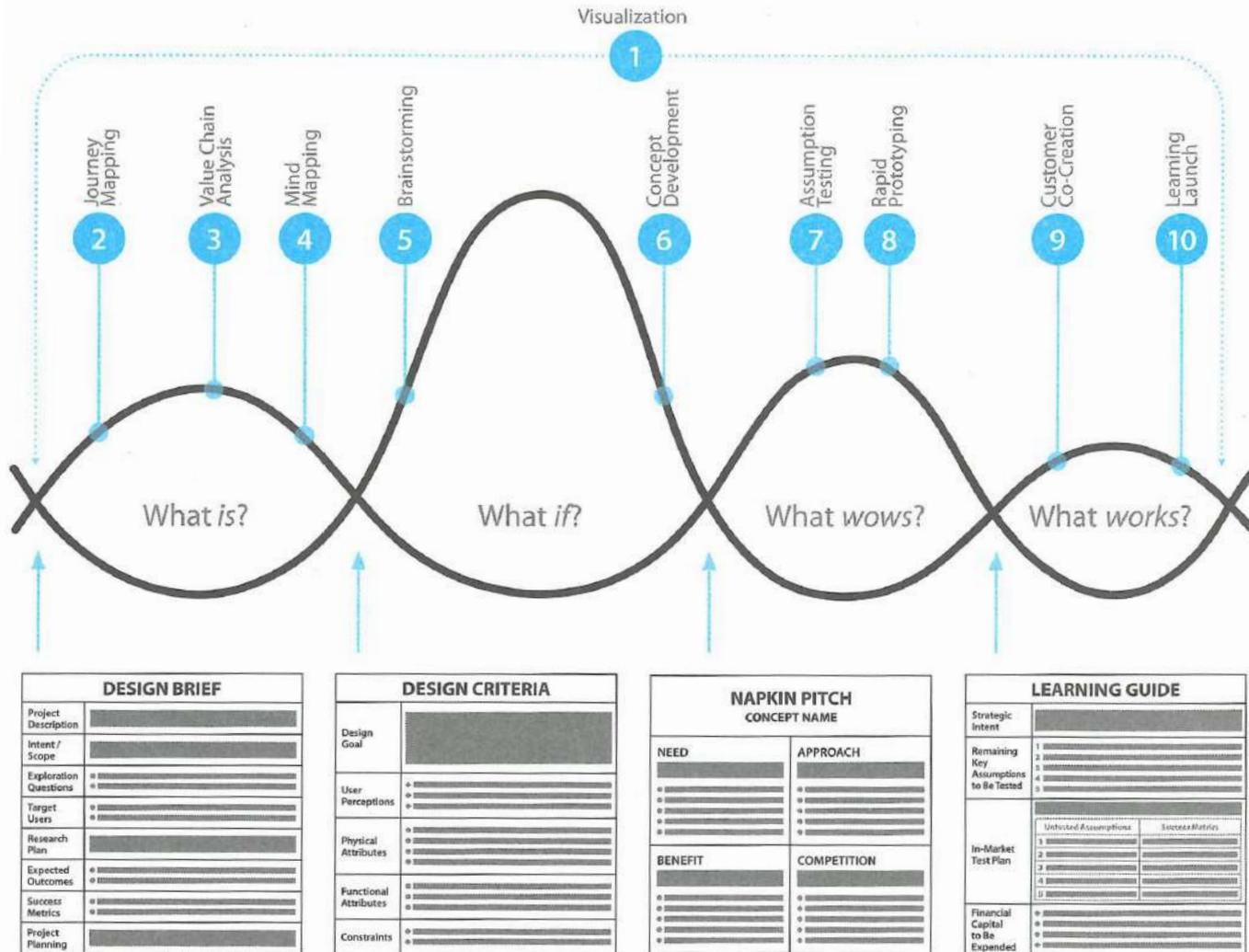
Procedure Assignment 1

1. Visualization and Journey Mapping

2. Value and Impact Mapping

3. Brainstorming and Concept Development

Deliverables Assignment 1

- Deliverables are handed in in a PDF on Lisam after the presentation session.

- The deliverables for Assignment 1 are:

  - The design presentation

  - Design brief

  - Design criteria

  - Reflection

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Reflection Assignment 1

- Organize a group discussion around the following two questions (document your discussion in a 1-2-page protocol):

  - How have you in the what-is and what-if of your human-centred design thinking project identified and defined the value or the values in use for the chosen interactive system?

  - How have you identified and defined measurable effect or impact goals for an interactive system?

Optional Parts Assignment 1: Try this at home

- For Grade 4: Complete two of the four exercises individually.

- For Grade 5: Complete all four of the exercises individually.

- They should be well performed, described in sufficient detail, and analyzed with references to the course literature, and reach clearly stated conclusions.

1. Visualization

2. Journey Mapping

3. Mind Mapping

4. Brainstorming

Assignment 2 What Wows and What Works?

- Procedure:
    1. Assumption Testing, Costs and Benefits
    2. Rapid Prototyping
    3. Customer Co-Creation
    4. Documentation and presentation

Deliverables Assignment 2

- Deliverables are handed in in a PDF at Lisam the end of the presentation session.

- The deliverables for Assignment 2 are:

  - The design presentation

  - Napkin Pitch

  - Learning Guide

  - Reflection

Reflection Assignment 2

- Organize a group discussion around the following two questions (document your discussion in a 1-2 page protocol):

    – How can you, based on the co-creation and user evaluation of your interactive system, argue for improvements in relation to your effect or impact goals?

Optional Parts Assignment 2: Try this at home

- For Grade 4: Complete two of the four exercises individually.

- For Grade 5: Complete all four of the exercises individually.

- They should be well performed, described in sufficient detail, and analyzed with references to the course literature, and reach clearly stated conclusions.

1. Concept Development

2. Assumption Testing

3. Rapid Prototyping

4. Customer Co-Creation

Design Presentations in Assignment 1 and 2

- Make a **visual** 10 minutes presentation:

  - process

  - results

- Focus on **showing** what you have done and why, rather than only telling about it.

- Include the methods you have used, how you have adapted them to your circumstances, and what they resulted in.

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Reports for Optional Parts in Assignment 1 and 2

- For every exercise write ~1000 words on:
  - Procedure and results
  - Reactions
  - Evaluation
  - Analysis
  - General conclusions
  - Personal conclusions

Assignment 3 Readings and Workshops

- Attendance at the workshops is mandatory.

- Upload your preparations before the workshops, they are your entrance tickets:

  - Summary of main points and ideas in the assigned readings (all chapters and all papers) <2 pages

- Reading group sessions (see schedule):

  - Sit down in your projects groups and discuss what you have read and how you might apply your insights in your particular design project.

Workshop Procedures

- The workshops will start with a short introduction by the teacher.

- It will be followed by structured group work.

- You will not do all project work during scheduled workshops, but they will work as a starting point for your own work in the groups.

- The workshops end with feedback to the whole group and discussions.

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Optional Parts for Assignment 3

- For Grade 4: A critical review of the mandatory course literature.

- For Grade 5: A critical review of not only the mandatory course literature, but also 2-3 papers from the optional course literature.

- About 3000 words

- Writing a critical review implies an analysis and evaluation of the text, and not only a summary of the texts.

- A good critical review with analytical distinction is required for the highest grades.

Grading Criteria for the Optional Parts of Assignment 3

- Is there a cover page with assignment number, course, name and LiU ID?

- Are the main points of the reviewed texts introduced and described?

- Are evaluations of the argument and evidence behind the texts provided?

- Is the relevance and implications of the texts discussed?

- Are meaningful connections between the different texts drawn?

- Are the conclusions in the review reasonable?

- Are references correctly made using the Harvard style?

- Bonus criterion: Are any original and thought-provoking conclusions reached in the review? (Is not only readable but also worth reading?)

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- **Are the conclusions in the review reasonable?**

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- **Bonus criterion: Are any original and thought-provoking conclusions reached in the review? (Is not only readable but also worth reading?)**

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Deadlines

- Mandatory parts:

    - Readings handed in at the workshops

    - Assignment 1 group parts 2019-02-18, 18:15

    - Assignment 2 group parts 2019-03-12, 17:15

- Optional parts and supplementary examination of missed workshops and oral presentations:

    - March 20, 2019, 17:15.

- Re-submission Deadline:

    - June 5, 2019 (17:00).

- Round-Up Deadline:

    - August 31, 2019 (17:00).

Deadlines

- Assignments are generally not assessed and graded between these deadlines.

- You *cannot* try for a higher grade at the re-submission deadline or round-up deadline.

Again, what is it all about

- You will in this course acquire knowledge about design and evaluation methods for human-centered and effects-driven development and procurement of interactive systems.

- Re-invention by:

  - Design thinking

  - Impact mapping

Project Groups

- Six randomly cross-disciplinary teams

- 6CDDD

- 6CIEI

- 6CIII

- 6CMJU

- 6CYYY

- Exchange students

Course Information

- http://www.ida.liu.se/~TDDD75/index.en.shtml

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www.liu.se