Faculty of Design

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What's the worst that could happen? Creative visualization tools for ethical foresight

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What's the Worst That Could Happen?
Creative Visualization Tools for Ethical Foresight

Theme:

When analyzing and designing a product, service, or system, minor adaptations to existing design processes can go a long way to expand beyond a techno-centric system perspective, or an exclusively "convenience and ease of use" user experience profile. By assigning critical questions to each step of a design process, we can resituate our working understanding of a technical system within its human context and expand our sociotechnical analysis to include matters of normative and ethical concern. These critical questions address concerns including inclusivity, duty of care, sustainability, and prevention of harm. From the newly expanded ethical context these questions help construct, it is possible to imagine opportunities for value-led change within the relationships of a sociotechnical system.

The workshop is convened by two professors in an interdisciplinary Communication, Culture, and Technology Masters Program working in collaboration with Georgetown University's Ethics Lab, which utilizes Design strategies to introduce an ethical lens into course content across the curriculum. While our approach to this work is primarily pedagogical and derived in an academic setting, the tools and strategies are equally applicable for use within professional settings. A product manager, policymaker, community advocate, or any other decision-maker weighing roadmap options is continually faced with the challenge of how to move forward responsibly; whether they are aware of the impact their decisions will have or not is dependent on their process. Our workshop will introduce an integrated set of tools designed to enhance critical analysis of sociotechnical systems, with an eye toward excavating complex problems related to technology and its role in shaping and reshaping social structures, and vice versa.

Format of the Session:

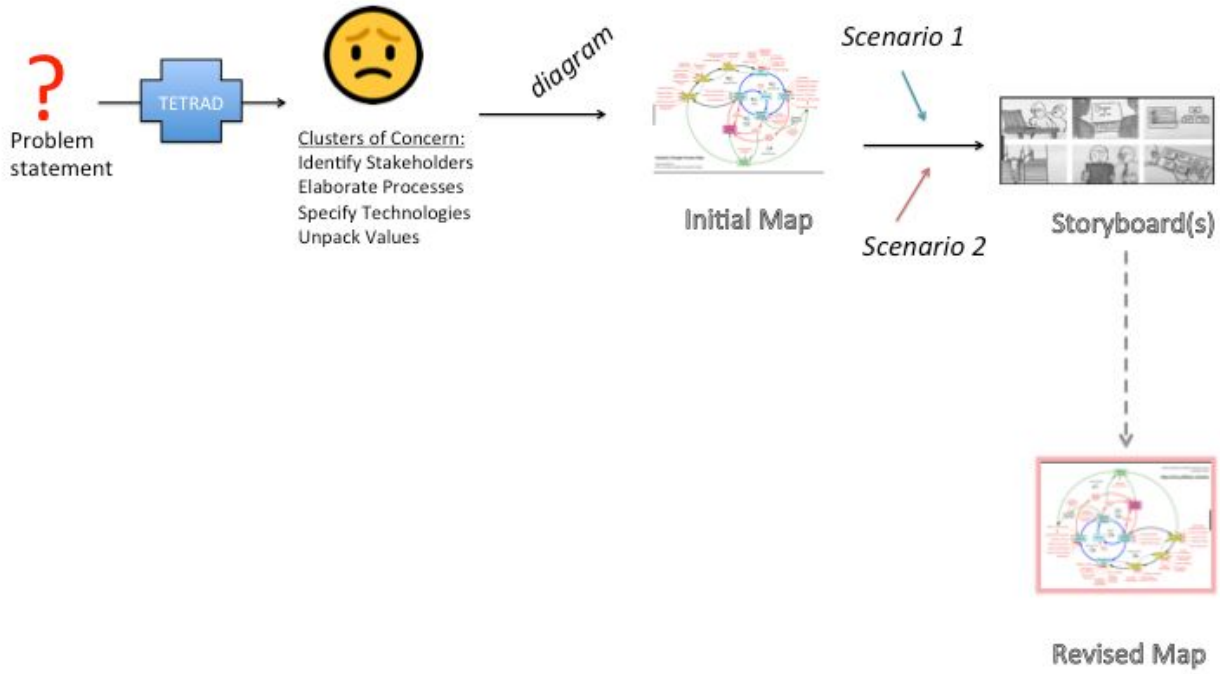
We propose an active half-day session featuring an introductory presentation, structured small-group activities, and multiple opportunities for full group discussion and feedback. Following a brief introduction to establish the context in which this work was developed and our intention in doing so, we will introduce the tools in sequence, with participants working in small groups to test them on a provided case study.

Proposed Activities

We begin with a single problem statement. From there, we work through a process of interrogating a sociotechnical system using a combination of mapping and visual narration tools. Tools covered include variations of scenario testing, storyboarding, system mapping, stakeholder mapping, and McLuhan's Tetrad of Media Effects — all adapted and arranged to

enhance critical and expansive sociotechnical analysis from a human-centered and ethical perspective. The sequence is designed to emphasize a process of expansion and contraction, allowing participants to extend the boundaries of a system's context before consciously narrowing their focus on a particular point of leverage. The workshop activities result in a flexible socio-technical system map (and related artifacts) that allows researchers and stakeholders to interrogate diverse impacts and sets of relations of the formulated problem.

Visual Representation of Workshop Flow



Detailed Schedule and Workshop Outline

- **Introduction**
  - Who we are & what we do at Georgetown
  - What we are doing here: Objectives and arc of the Workshop
- **Workshop**
  - Introducing the Case Studies in the form of an initial problem statement
  - Building the frame:
    - Using the Values-based Tetrad to expand the problem statement into broader areas of concern
    - Identifying what belongs within the field of the system and what belongs outside the boundary as part of the external environment
  - Articulate the areas of concern in the following categories:
    - Stakeholders: identify affected people and social groups
    - Processes: elaborate how groups navigate the various components
    - Technologies: specify the necessary technical components

        - Values: unpack ethical questions introduced by the components
    - Map 1
        - Cluster the articulated components
        - Draw and label relationships among both individual components and component clusters
    - Scenario Testing
        - Narrate how two competing scenarios would interact (e.g. move across) the initial map
        - Produce storyboards that diagram these scenarios
    - Map 2 (Reconcile Competing Priorities) – Time permitting
        - Identify and cluster any new or unanticipated components introduced in the scenario testing
        - How might we redraw or relabel Map 1 to incorporate these new components and/or reconcile the competing priorities of the two storyboards.
- **Final Gallery & Discussion**
    - Presentation of findings: from initial problem statement to final map
        - Discussion around how the process influenced thinking on the normative and ethical concerns surrounding the case study
    - Visual Analysis
        - Discussion of the visual techniques (e.g. colors, line strokes, shapes, etc) utilized by groups to communicate their analysis of values at stake
        - Suggestions from the workshop conveners for further activities using the various artifacts and techniques (tetrads, clustering, socio-technical system mapping, scenario storyboards)
    - Feedback on the workshop process

Workshop Goals & Expected Outcomes:

- Participants will gain experience using an integrated set of tools for interrogating a sociotechnical system through a human-centered lens, empowering them to address normative ethical concerns throughout their design and development process.

- Test and surface new approaches to visual representation and analysis that more critically assess sociotechnical systems.

Technical / Space Requirements:

To run this workshop most effectively, we will need enough clear table space & seating for participants to work comfortably in groups of four. Each group will be working collaboratively around an easel-pad sheet, or similar. We will also need to project/show slides, potentially with audio.