Interaction design for RRI

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1

Into the future

12 October 2016

- Capacity building:
  - Huge amount of data
  - Personal impressions
  - Findings and statements

- For future improvements:
  - Cut through this complexity
  - Supported by a comprehensive process
  - Executed by collaborative working groups

2 | 52

Minds, hearts and hands on (Wednesday)

12 October 2016

Diverge   14:30 - 15:15
- Why interactive design for future Nuclei?
- Introduction to design thinking
- Practice design thinking : How-Tos

Converge   15:30 - 16:45
- Sort data from field trips, relate, decide, compare, and detail for future scenario's
- Design in 5 teams concerning 'governance' for 5 future Nuclei at different location leading to 15 scenario
- Compare, decide and detail scenario upon 5 future Nuclei

Research (discussion) 17:00 - 17:30
- Design for Nuclei Ambassadors (DNAs) for design-based research (?)
- Train DNAs to design the Nuclei with implementation teams?
- What is a 'roadmap'?

3 | 52

Minds, hearts and hands on (Thursday

12 October 2016

Setting the Scene for 2017: let's define next steps   14:00 - 16:00
- Roadmap
- Presentations of 5 scenarios for 5 future Nuclei
- How to value interview data, sort, rank and decide
- Incorporate interview data in the 5 scenarios concerning the future
- 5 even more detailed scenario's for 5 future Nuclei → Data combined

16:00 – 16:30: Coffee

Paving the implementation road map (discussion)   16:30 – 17:15
- train teams in design for working groups?
- Nucleus-field labs that design, test, improve, re-design and test?

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4 | 52

Nucleus aim

12 October 2016

- … to develop innovative **strategies** and practical **recommendations** in a **co-building** mode, ensuring **co-responsibility** and complementary roles of all partners within the project.

- Operationalised in **Roadmap**

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A roadmap is?

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- Design requirements for a roadmap
  - …
  - …
  - …

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Exploring the field

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· What do we want to achieve, within which timeframe?

Actors / Timing	Science policy level	University board level	Department level	Individual scientists	Student education	...
Long term > 5y					All engineering training programmes integrate RRI as a core concept in all courses.	
Mid term 1y - 5y						
Short term < 1y						

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Responsible Research & Innovation

12 October 2016

· "RRI is a **transparent**, **interactive** process in which societal actors and innovators become **mutually responsive** to each other, with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process **and** its marketable products (in order to allow a proper embedding of scientific and technologies advances in our society)."

Von Schomberg 2013

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RRI roadmap concepts

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· Responsiveness
  · Main challenge in RRI: hard to install in practice
· Co-building
  · All actors present, also those 'affected' by roadmap (?)
· Co-responsibility
  · Prevents undesirable 'division of moral labour'
    · division > non-commitment   > non-appreciation   > non-acknowledgeme nt   > non-acceptance

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RRI in practice

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- Interaction design for responsible research & innovation
  - **Communication** is key;
  - **Interactions** between actors need to be shaped;
  - In a **collaborative** and **transparent** setting
  - In an **organized** and **structured** design process

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Our aim is…

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- … to share a **method** that everyone can use at their own institutions to integrate NUCLEUS results of field trips, literature studies, and interviews into different RRI roadmap components, in a collaborative way with actors from those institutions.

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Nuclei: the 5 main goals are…

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- Build **institutionalised bridges** between the research community, stakeholders and the general public
- Catalyse ongoing **debates** about the role of science in open societies
- Develop, nurture and support new forms of **transdisciplinary** research including RRI principles in the scientific community
- Stimulate **co-responsibility** of all actors involved in the process of research and innova- tion
- Question and redefine prevailing notions of **"recipients" and "agents"**

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Design…social design…interaction design…communication design…

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13 | 52

Harvard Business Review (Sept. 2015)

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THE EVOLUTION OF DESIGN THINKING
IT'S NO LONGER JUST FOR PRODUCTS. EXECUTIVES ARE USING THIS APPROACH TO DEVISE STRATEGY AND MANAGE CHANGE.
PAGE 55

14 | 52

Design thinking is expert thinking

12 October 2016

- analytic thinking → **synthetic** thinking / mind shift
- is about a **new future** / is not about the state of the art
- not about taking out what is not wanted
- cutting trough **social complexity**
- focus, details & **iteration** that leads to guiding principle(s) of future scenarios
- is about making **decisions explicit**

15 | 52

Analytic → Synthetic

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16 | 52

It is about the future

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IF I HAD ASKED MY CUSTOMERS WHAT THEY WANTED, THEY WOULD HAVE SAID A FASTER HORSE.

- Henry Ford

17 | 52

Not about taking out what is **not** wanted

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Let's try: How-To

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• How to get rid of this?

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How To?

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How could **this team** help to build bridges between university and society?

5 min. in groups of 5

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Cut through complexity

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NUCLEUS → NUCLEI

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Guiding principle

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"The designer should be stimulated to reframe a problem-oriented focus in the project to a neutral and wider social phenomenon. This broader scope would stimulate the designer to prevent 'jumping-to-conclusions' and explore relevant related factors to the problem at hand." (Tromp, 2013)

guiding principle ≈ point of view
be touched

Design thinking is expert thinking

12 October 2016

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- is about making decisions explicit

Focus & detail through iterations
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Design in a scheme
12 October 2016

discover | define | develop | deliver

26 | 52

What are we going to do?
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criteria

choose

analysis

synthesis

case

product/
service/
process

diverge

converge

case

criteria

choose

case

discover   define   develop   define   develop   deliver

27 | 52

Design steps

12 October 2016

1. Discovery: problem description
   - Causal loop diagrams → critical nodes in system
2. Theoretical lens
   - Which theories are relevant for this problem / critical nodes
3. Morphological chart (1)
   - Scenarios for problem solving/implementation
   - Prioritize options / solutions
4. Social statement
   - Guiding principles: all we do should deliver X
5. Prototyping
   - Embed in practice, 1st iteration, aesthetics
6. Strategy description
   - Morphological chart (2)
7. Delivery

28 | 52

Morphological chart

Steps to take

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1) observations: pre-fab dataset about **governance** and culture of academic institutions (Edinburgh Fieldtrip)

2) **Future**: how to turn barriers into enablers? Based on observations, experience, creativity and intuition in the light of NUCLEUS' aims/functions

3) Describe scenarios / possible blue prints for future solutions

4) 5 teams deliver 15 scenarios

5) rank scenarios regarding to: newness, likeability, plausibility

6) Combine 5 best scenarios into an overall guiding principle / point of view

30 | 52

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Function s (field trips)	Theory	Experience	Creativity	Intuition	...	...
'solution 1'	Transparent, interactive, mutual, responsive, anticipatory, inclusive, reflexive					
'solution 2'						
....						

Scenarios

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" Explore the joint impact of various uncertainties"

32 | 52

Design in a scheme

12 October 2016

discover define develop define develop deliver

Increased focus, increased details, increased understanding without losing complexity

33 | 52
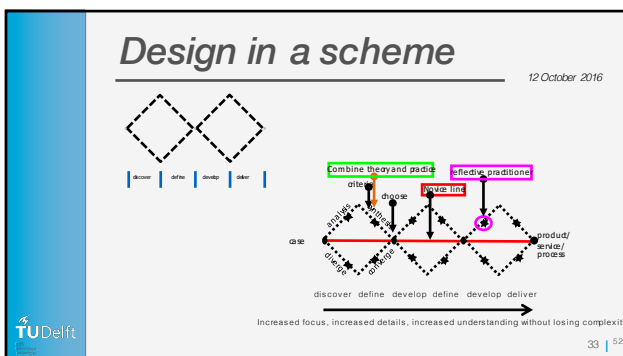
Thursday

34

Minds, hearts and hands on (Thursday)
12 October 2016

Setting the Scene for 2017: let's define next steps   **14:00 - 16:00**
- Presentations of 5 scenarios for 5 future Nuclei
- How to value interview data, sort, rank and decide
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16:00 – 16:30: Coffee

The implementation road map (discussion)   **16:30 – 17:15**
- Roadmap?
- Train teams in design for working groups developing 'nuclei'?
- Nucleus 'field labs' that design, test, improve, re-design and test?

35 | 52

Responsible Research & Innovation
12 October 2016

- "RRI is a **transparent**, **interactive** process in which societal actors and innovators become **mutually responsive** to each other, with a view on the (ethical) acceptability, sustainability and societal desirability of th innovation process **and** its marketable products (in order to allow a proper embedding of scientific and technologies advances in our society)."
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36 | 52

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12 October 2016

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  - Main challenge in RRI: hard to install in practice
- Co-building
  - All actors present, also those 'affected' by roadmap (?)
- Co-responsibility
  - Prevents undesirable 'division of moral labour'
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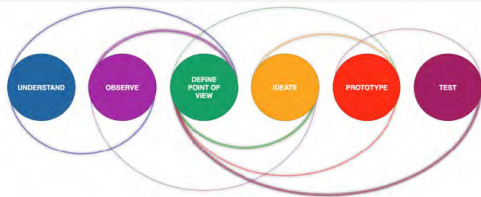---

Our aim is…

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-
- … **not** to develop a roadmap

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Why design thinking?

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- Reasons
  - Collaborative
  - Comprehensive
  - Academic
  - Dynamic

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Nuclei: the 5 main goals are...

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- **Institutionalised bridges** between research community, stakeholders and the general public
- Catalyse **debates** about role of science in open societies
- New forms of **transdisciplinary**
- Stimulate **co-responsibility**
- Redefine notions of **"recipients" and "agents"**

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Design steps

12 October 2016

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What will we do?

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Steps we took yesterday

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1) observations: pre-fab dataset about governance and culture of academic institutions (Edinburgh Fieldtrip)

2) **Future**: how to turn barriers into enablers? Based on observations, experience, creativity and intuition in the light of NUCLEUS' aims/functions

3) Describe scenarios / possible blue prints for future solutions

4) 5 teams develop 15 scenarios

5) Select 5 scenarios

43 | 52

Morphological chart

Stuur							
Wielen							
Licht							
Treeplank							
Vuil Afweer							
Decelereren							
Waarneem baarheid							

Scenario improvement

12 October 2016

- Presentation of 5 scenarios

- Enhance these scenarios through 'ranking'
  - Based on first interview data
  - Additional field trip insights
  - People's intuition / creativity

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Rules of the game

- Everything in the charts is negotiable
- Intuitive and creative thinking is valued
- Not every insight *has* to be used

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Focus of today

1. Map out insights relevant for scenario
2. Sort insights in importance
3. Relate most important aspects to scenario
4. Choose focus / (re)define point of view
5. Ideate → redefine scenario

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Steps to take

1. Read interview data
2. Highlight 5 important elements
3. Choose your #1 element
4. Describe #1 element as design opportunity for scenario
   - Write on a Post-It
5. Gather all #1 opportunities in group
6. Individually distribute 25 points over all elements
   - Considerations: plausible, new, daily practice
7. Top 3 of opportunities in Morphological Chart
8. Fill in chart: 'how to' include in scenario
9. Prioritize and develop scenario further

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Ranking / prioritizing

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Different points of view

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Safety	Safety	Safety	Spending time differently
Traffic flow	Traffic flow	Spending time differently	Safety
Security	Security	Traffic flow	Security
Spending time differently	Self-determination	Security	Self-determination
Liability	Accessible for everyone	Liability	Accessible for everyone
Self-determination	Liability	Accessible for everyone	Liability
Accessible for everyone	Equality	Equality	Traffic flow
Equality	Spending time differently	Self-determination	Equality

Less important

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Scenario development

12 October 2016

Functions (field trips)	Theory	Experience	Creativity	Intuition	…	…
'solution 1'	Transparent, interactive, mutual, responsive, anticipatory, inclusive, reflexive					
'solution 2'						
….						

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Prioritizing
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Roadmap
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- Implementation
  - Timing
  - Location
  - Organization specific
  - Actor specific

- 'Shooting a moving target'
  - Dynamic
  - Robust adaptive planning (RAP)

Iterations! Nucleus living lab?
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Integrating design thinking in Nucleus
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- Implementation roadmap
- Mobile/inst. nuclei as 'design-based research' approach
  - Co-responsibility, institutionalised, debates, transdisciplinary, co-responsibility, new "recipients" and "agents"

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Take-home message
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- Design thinking enables…
  - Focus
  - New ideas
  - Shared and explicit decision making
  - Co-desciption of details
  - Interdisciplinarity
  - Geting a grip of Nucleus' complexity
  - Bring ideas and results into daily practice

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56 | 52

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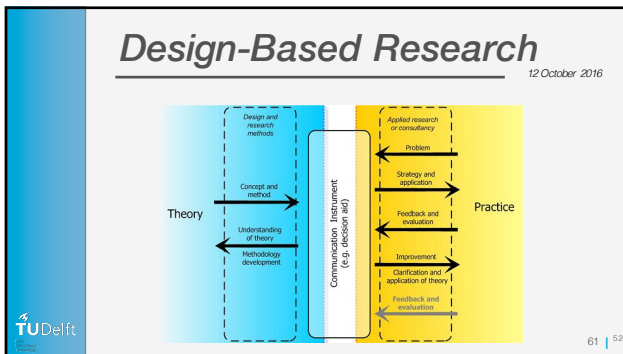6. Strategy description
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End

58

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