

Case Studies in Design Informatics 1 - INFR11094

Week 1, Lecture 1 – 18th September 2023

Introduction to the course

John Vines

Professor of Design Informatics

john.vines@ed.ac.uk



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What we will do today

- Introduction to the course
 - What is the course about?
 - How is the course organized?
 - What you need to do for the the sessions
 - Overview of assignments
- What is a design process?
- How does data fit in this?



Who are we?



John Vines

Course Organiser
Prof. Design Informatics
john.vines@ed.ac.uk



Susan Lechelt

Lecturer,
Design Informatics
susan.lechelt@ed.ac.uk

Tutors:

Xinhuan Shu – Postdoctoral Researcher (Data Vis)

Zonglin Ji – Postdoctoral Research (Applied AI)

Farid Ghani – PhD Student (Health Informatics)

Zehuan Wang – Advanced MSc Student (DI)

Xandra Cochran – School of Informatics Tutor

+ Mentoring from the 2nd Year Design Informatics students

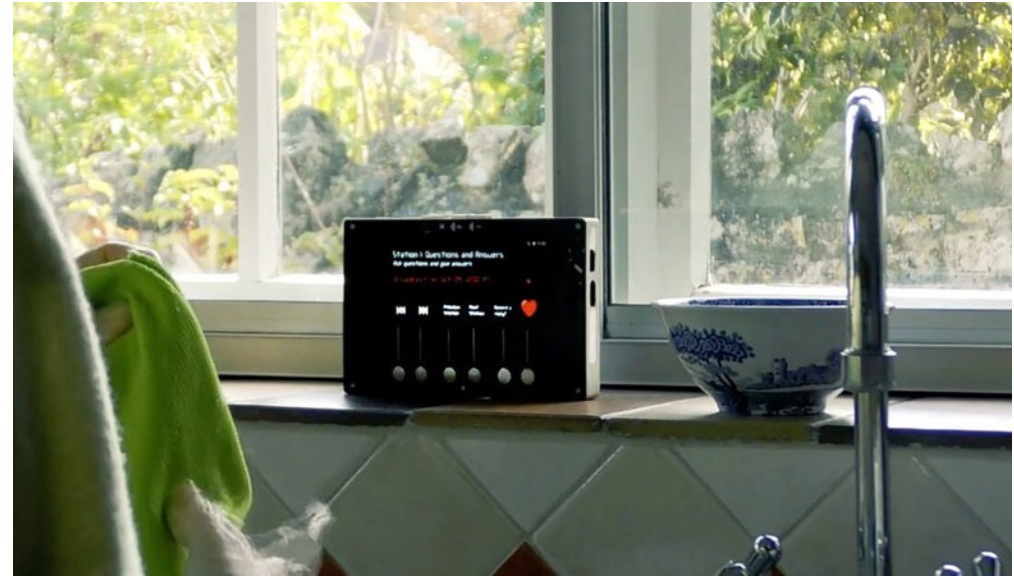
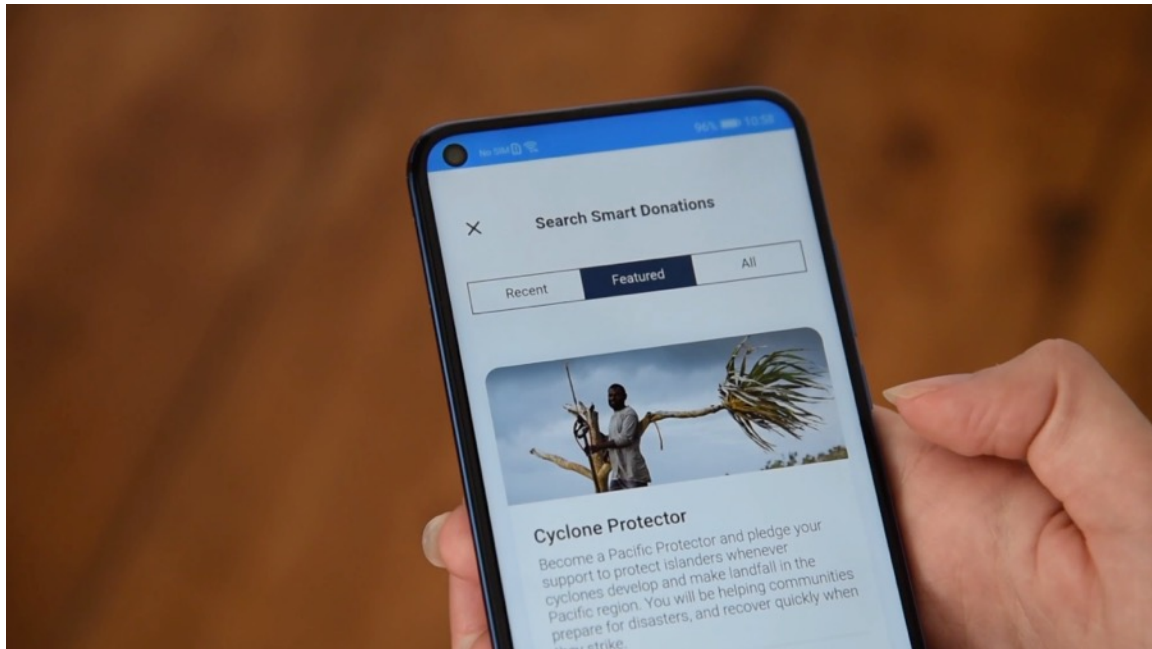


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What is Design Informatics?

It's about building prototypes for people (users) to be provoked by and live with



What is Design Informatics?

It's about peoples lived experience of data and data-driven technology



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What is Design Informatics?

It's about ethical design of data-driven systems – Data Vis, AI, IoT, Blockchains, amongst others - and advocating for human and environmental values



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What is the course about?

- CDI1 is about **case studies** – you will learn about examples of projects at the intersection of design, data and society.
- CDI1 is also about learning about **design processes**, methods and techniques – we will have lectures focused on these and highlight them when discussing case studies.
- In lectures you will learn about design and data case studies; in tutorials you will learn skills for finding and reflecting on case studies, and developing critical perspectives on these – with a focus on **ethical, social, environmental, legal** aspects of data-driven technologies



Schedule - What does a week look like?

- Mondays
 - Lecture in-person between 15:00-17:00 (start 15:10). These lectures will involve:
 - (i) lectures from John and Susan – usually with “interactive” components (so you’re not just listening for two hours!);
 - (ii) us responding to the activities you report in your weekly “engagement” activities;
 - (iii) having a break in the middle for 10 minutes.
 - By end of each Monday (at the end of the lecture or shortly afterwards) you will receive preparatory work for the following week – the prep work will help you be ready for the lecture the following week.
- Wednesdays
 - In person group tutorials – you are allocated a group.
 - Only one Weeks: 3, 4, 6, 7, 9 and 10



Schedule – semester overview

Lectures

Week	Day	Who	Topic
1 (w/c 18 th Sept)	Mon	JV/SL	Course Introduction + Introduction to Design Thinking
2 (w/c 25 th Sept)	Mon	JV	Research into, for and through Design
3 (w/c 2 nd Oct)	Mon	JV	Ethical Design Practice
4 (w/c 9 th Oct)	Mon	SL	Case Studies in IoT and Sustainability
5 (w/c 16 th Oct)	Mon	SL	Case Studies in XR and Cultural Heritage
6 (w/c 23 rd Oct)	Mon	SL	Case Studies in LLMs and Creative Industries
7 (w/c 30 th Oct)	Mon	JV	Case Studies in Blockchain and Civic Participation
8 (w/c 6 th Nov)	Mon	JV	Case Studies in Autonomous Systems and Ageing
9 (w/c 13 th Nov)	Mon	SL	Probes in Design Research
10 (w/c 20 th Nov)	Mon	JV	Co-Design in Design Research
11 (w/c 27 th Nov)	Mon	SL	Q&A refresher session

Tutorials

Week	Tutorial
3 (w/c 2 nd Oct)	How to use the ACM Digital Library
4 (w/c 9 th Oct)	How to analyse a case study
6 (w/c 23 rd Oct)	Analysis of a case study #1
7 (w/c 30 th Oct)	Analysis of a case study #2
9 (w/c 13 th Nov)	Cultural Probes #1 - Design
10 (w/c 20 th Nov)	Cultural Probes #2 - Feedback

JV: John Vines - **SL:** Susan Lechelt



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Block 1 - What is design (research)

Tutorials

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Block 1 – What is design (research)

Block 2 – Case studies of data and design

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Block 1 – What is design (research)

Block 2 – Case studies of data and design

Block 3 – Applying a design (research) method

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Schedule - Locations

Monday lectures are in the Meadows Lecture Theatre in the Old Medical School building:

https://www.ed.ac.uk/timetabling-examinations/timetabling/room-bookings/bookable-rooms3/room/0113_00_G.07

Tutorials will be in Appleton Tower, AT 2.06 and 2.04.



Weekly engagement activities:

Reflections, Questions and Comments

- Every Monday you will get assigned preparatory work (prep work) for the next week:
 - E.g., you will get pre-work for Week 2 sessions on Monday of Week 1.
- The pre-work will comprise of material for you to read, view, listen, and consider before the sessions the following week.
- Before 12:00 (midday) each Friday, you must complete your Class Notebook in Teams and complete your "3-2-1 Reflections, Questions and Comments":
 - 3 Reflections – 3 things you learned from the **last lecture**
 - 2 Questions – 2 questions you wish to ask the lecturers based on the assigned "prep material" for the **next lecture**.
 - 1 Comment – 1 key "takeaway" you have from reading the assigned "prep material" – try to relate this to your own background knowledge and experience
 - Your responses can be as short, or as long, as you wish – teaching staff can see them but no other students can.
- **Completing this is critical for the weekly lectures on Monday afternoons!**



Coursework

CW1 – Studying Case Studies (Individual) – 50%

- 1.1. - Comparing two different approaches to design research – 5% - 9th October 2023 (PASS/FAIL)
- 1.2. - Case study reflection and analysis – 45% - 27th November 2023

CW2 – Applying a Design Method and Weekly Engagement (Individual) – 50%

- 2.1 - Portfolio of materials for Probe study – 45% - 10th January 2024
- 2.2 - Evidence of weekly engagement in Course Notebook – 5% - each week throughout the course!

- **Do not worry about coursework now – I will assign CW1.1 next week**



We listened to students from last year

Last year's feedback:

- Students wanted more on “design” – theories, approaches, histories
- Students enjoyed the group project – but this was hard to manage at the same time as other DI courses (for DI students) and HCI (for many non DI students) – which have group projects.
- Some students enjoyed our guest / visiting speakers, but many found them challenging to follow.

What we have done:

- Organised the course to have more “design” content at start
- Removed group project – focus instead on individual assignments and case study analysis
- Removed guest speakers and reduced number of lectures per week



Exploring LEARN

<https://www.learn.ed.ac.uk/ultra/course>



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Exploring Open Courses

<https://opencourse.inf.ed.ac.uk/cdi1>



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Exploring MS Teams

<https://www.microsoft.com/en-gb/microsoft-teams/log-in>



Activity 1!: 2 minutes

On MS Teams, go to the “Week 1” channel.

Post in there a completed version of the following:

“In this course, I hope to learn about



Everything is in the Course Handbook!

(this can be found on the Open Courses website)



Take a break!
Back at 16:10



Exploring Miro!

https://miro.com/app/board/uXjVMkVVclw=?share_link_id=60487255773



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Activity 2!: 10 minutes

In the Miro... and on your own!

1. Can you think of 3 "data" products, services, things, that you have interacted with in the last week? Write each one on a new post-it...
2. Can you think of 3 words that summarise how these products, services, things made you feel? Again, write each one on a new post-it.
3. Are these positive or negative feelings? Move them to the appropriate box.



Design Informatics: is about design + data

It's about design + data

DESIGNING FROM, WITH AND BY DATA: INTRODUCING THE ABLATIVE FRAMEWORK



Design for Tangible, Embedded and Networked Technologies



DESIGNING FROM, WITH AND BY DATA: INTRODUCING THE ABLATIVE FRAMEWORK

CHRIS SPEED, JON OBERLANDER

University of Edinburgh (2)

C.SPEED@ED.AC.UK

Keywords: *design, data, informatics, framework*

Abstract

This paper introduces a framework for designers in which existing methodologies can be placed in order to better acknowledge how they work with data in different ways to support their practice. The paper starts by distinguishing three kinds of value associated with data: (i) raw measurements; (ii) commercial and social; and (iii) moral and ethical. We then note that changes in computing and communications technologies serve to de-emphasise computers as devices, and re-emphasise the flow of data between people, machines, and things; thus, we share the view that human-data interaction is a key challenge for designers. In addressing the challenge, we introduce the framework for designers to distinguish design from, with, and by data. We note that informatics provides the theory for, and technologies of, information processing, while design provides the methods to adapt and create products and services. The paper uses case studies to illustrate our approach.

Keywords: *design, data, informatics, framework*



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Design Informatics: is about design + data

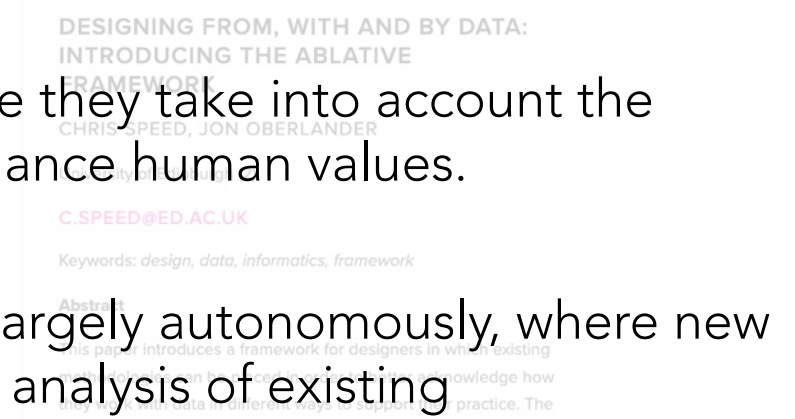
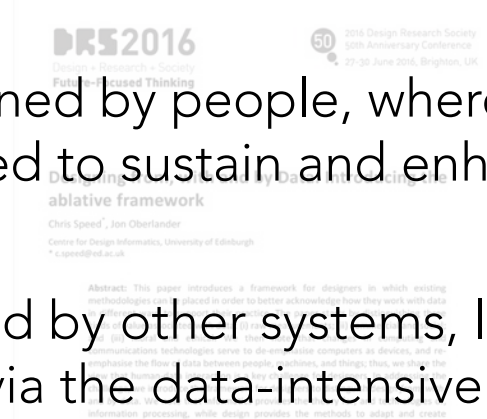
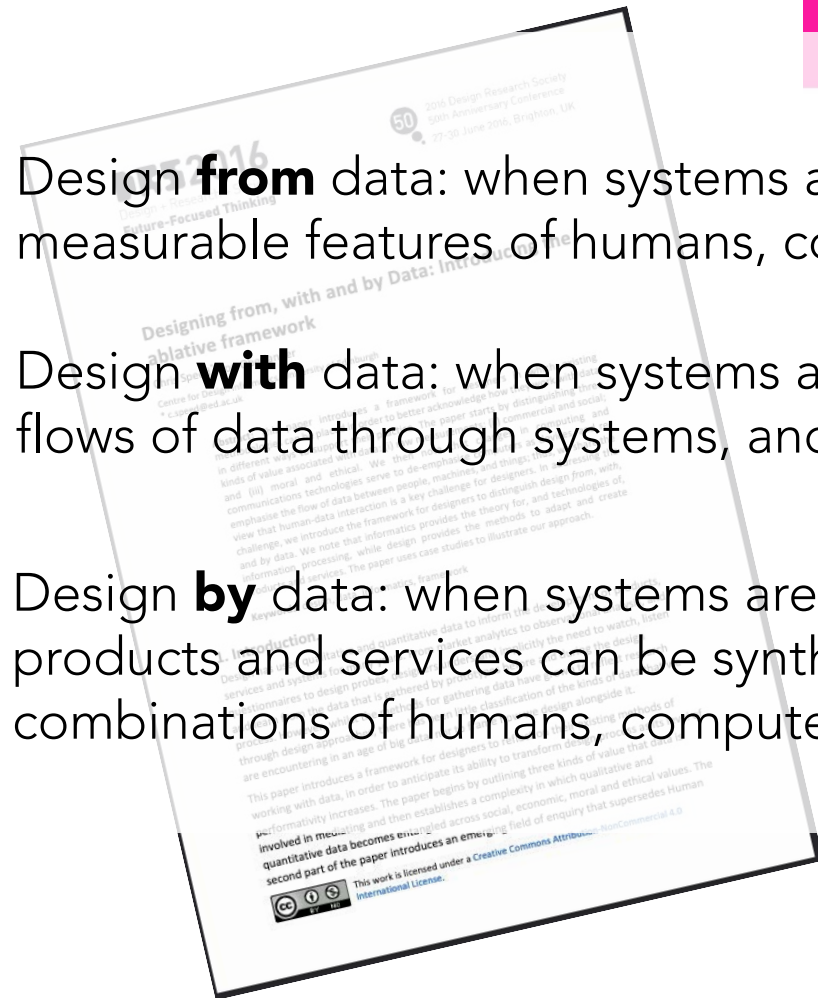
It's about design + data

DESIGNING FROM, WITH AND BY DATA:
INTRODUCING THE ABLATIVE FRAMEWORK

Design **from** data: when systems are designed by people, where they are inspired by measurable features of humans, computers, things, and their contexts.

Design **with** data: when systems are designed by people, where they take into account the flows of data through systems, and the need to sustain and enhance human values.

Design **by** data: when systems are designed by other systems, largely autonomously, where new products and services can be synthesised via the data-intensive analysis of existing combinations of humans, computers, things, and contexts.



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design informatics

Design Informatics: is about design + data

It's about design + data

DESIGNING FROM, WITH AND BY DATA:
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User Centered Design, Human-centered Design

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Design Informatics: is about design + data

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More Than Human Design, ?



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Back to the Miro!

https://miro.com/app/board/uXjVMkVVclw=?share_link_id=60487255773



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Activity 3!: 10 minutes

Work in pairs – with the person(s) sat near you

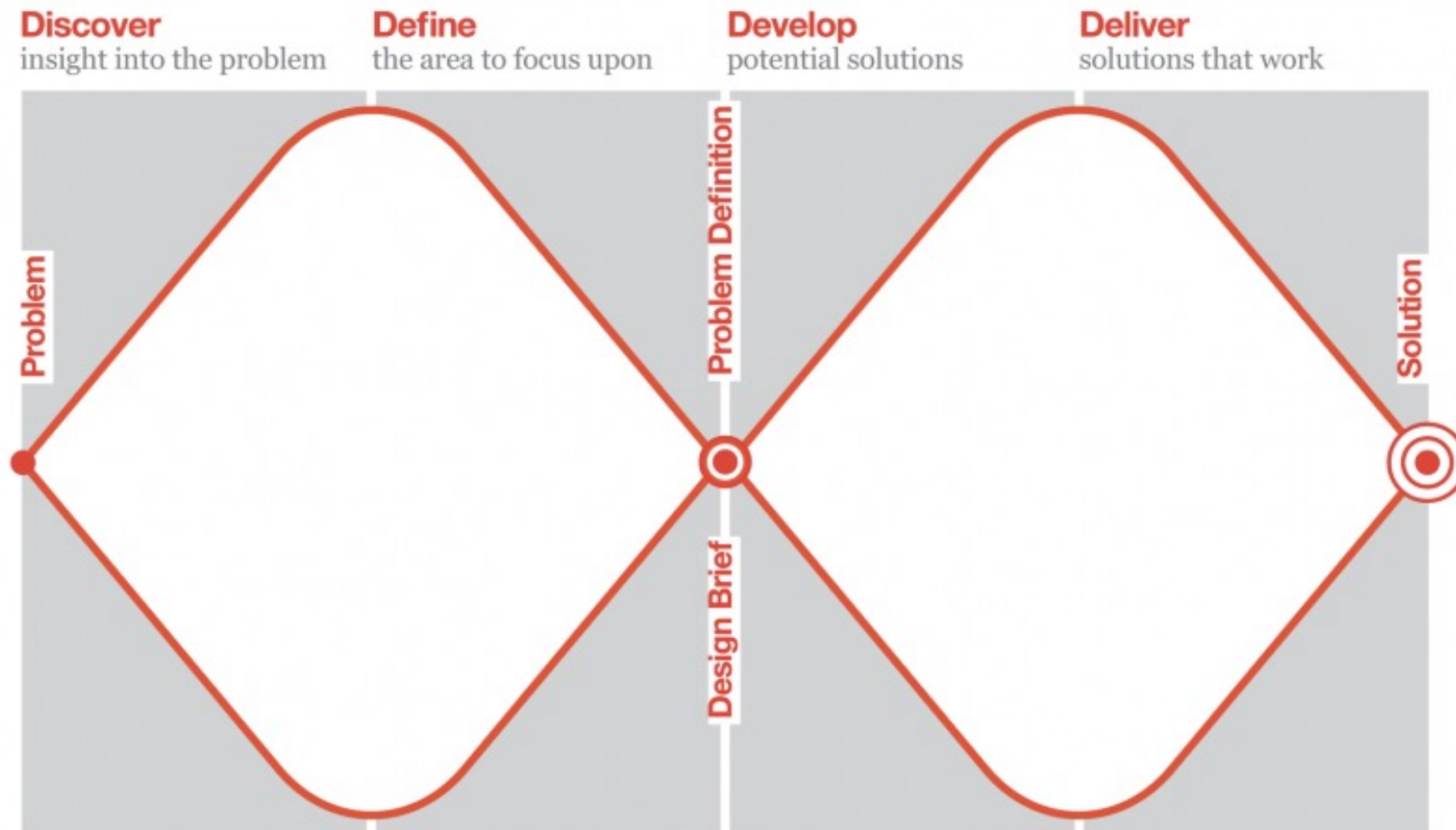
Find an image that represents what a “design process” looks like to you

This can be a diagram, a photo, a sketch – anything

Copy and paste the image into the Miro board



What does a design process look like (1): Divergent and Convergent approaches



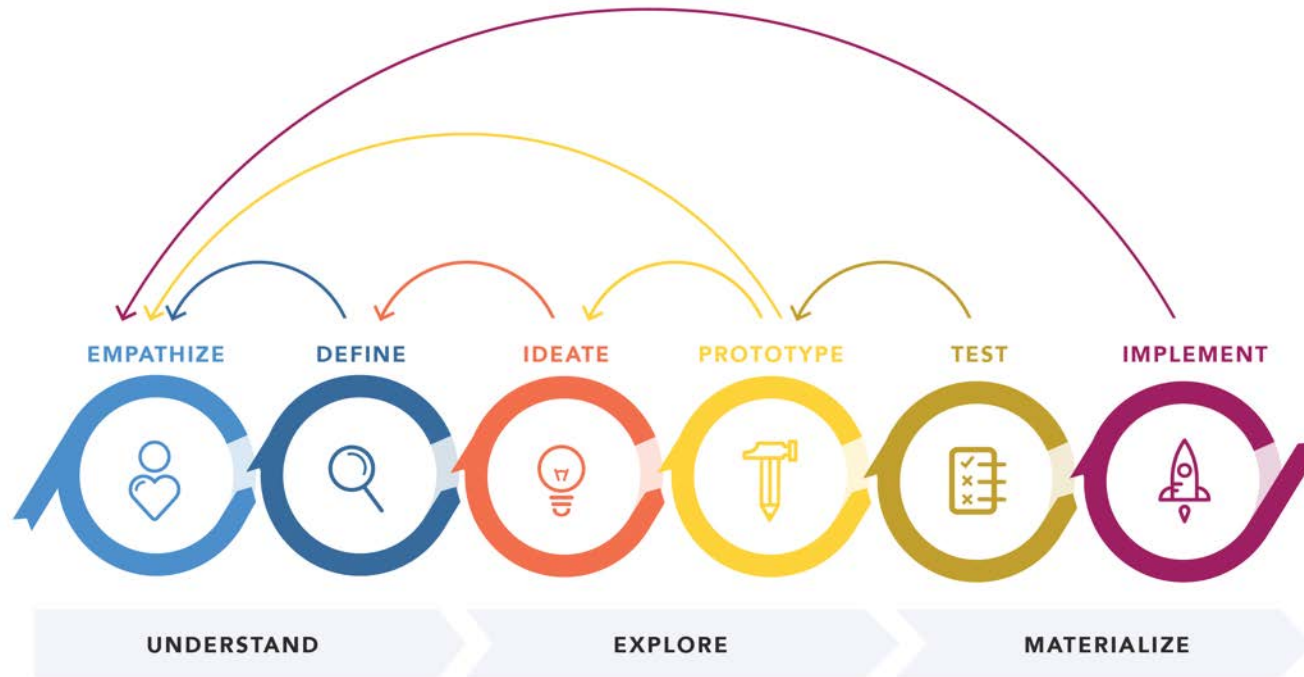
British Design Council. 2004. The Double Diamond:
<https://www.designcouncil.org.uk/news-opinion/double-diamond-universally-accepted-depiction-design-process>



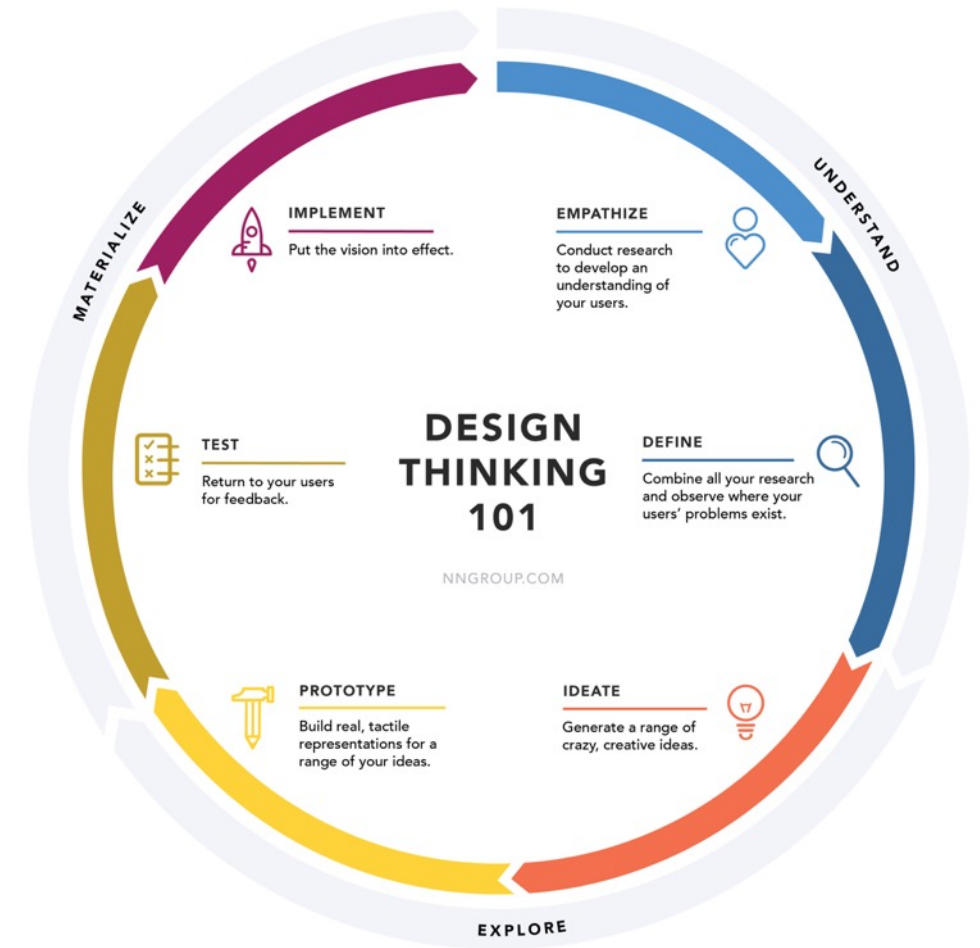
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What does a design process look like (2): Iterative and Cyclical approaches

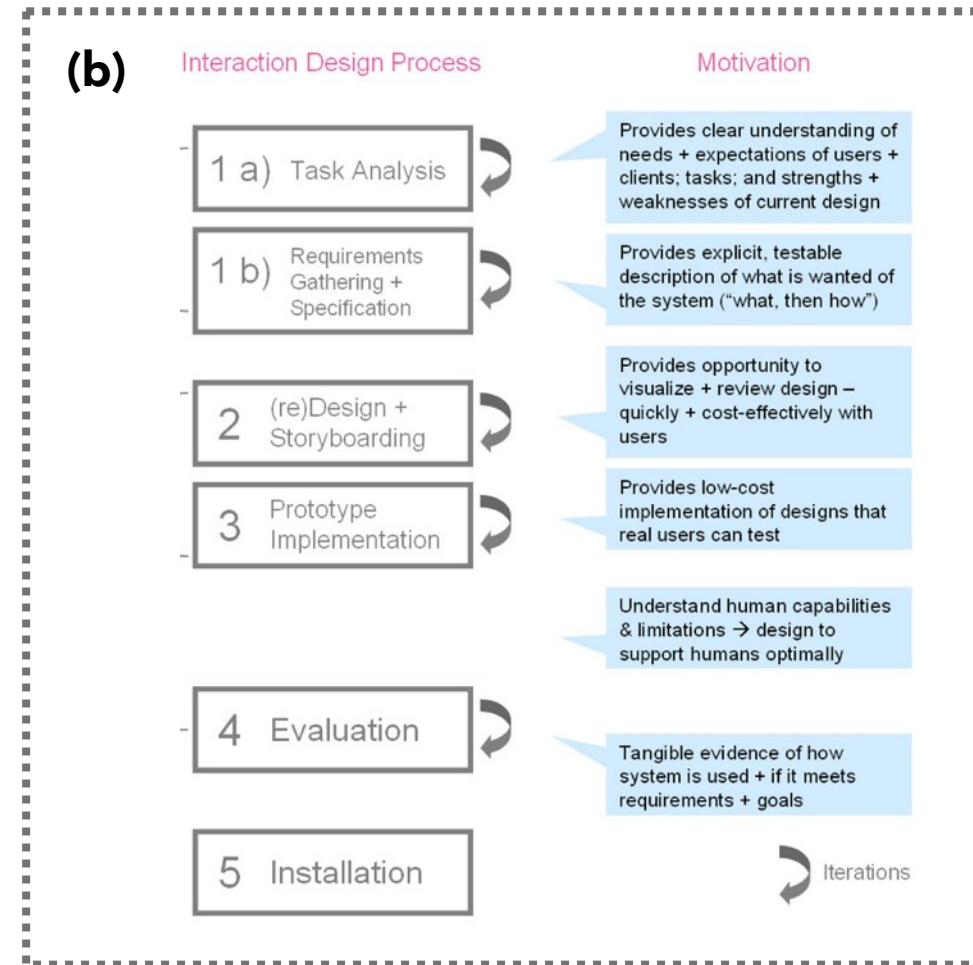
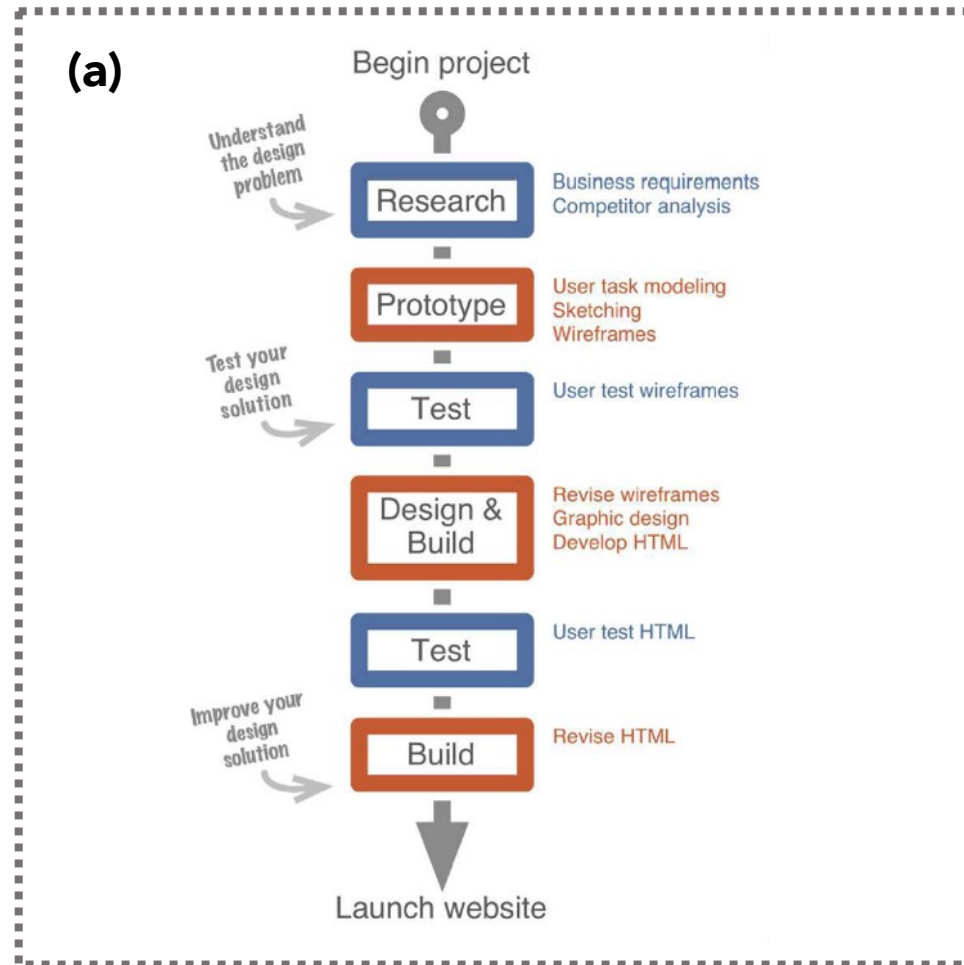


DESIGN THINKING 101 NNGROUP.COM



What does a design process look like (3):

Linear and waterfall approaches



(1) Allen and Chudley. 2012. Smashing UX Design. Wiley, London.

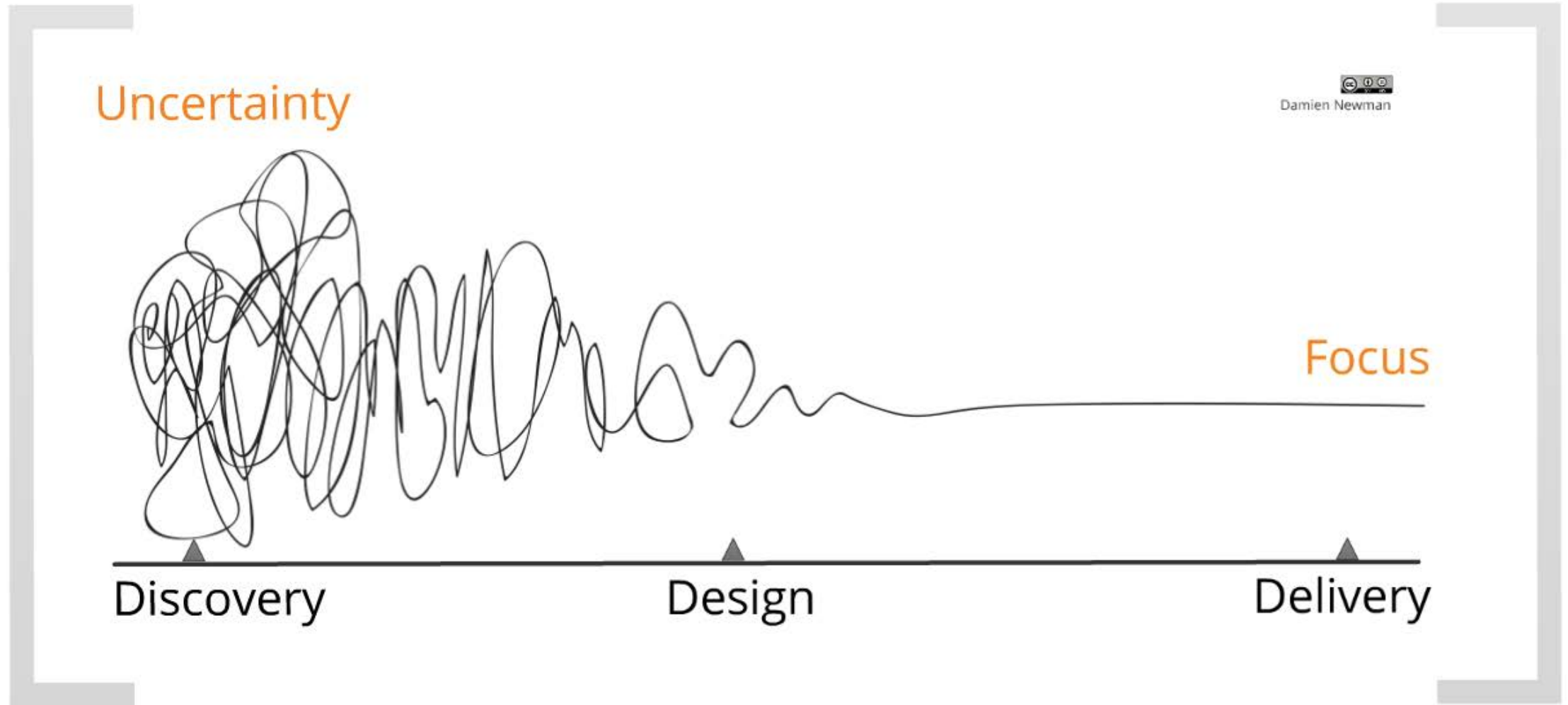
(2) Saffer. 2009. Designing for Interaction. New Riders, New York.



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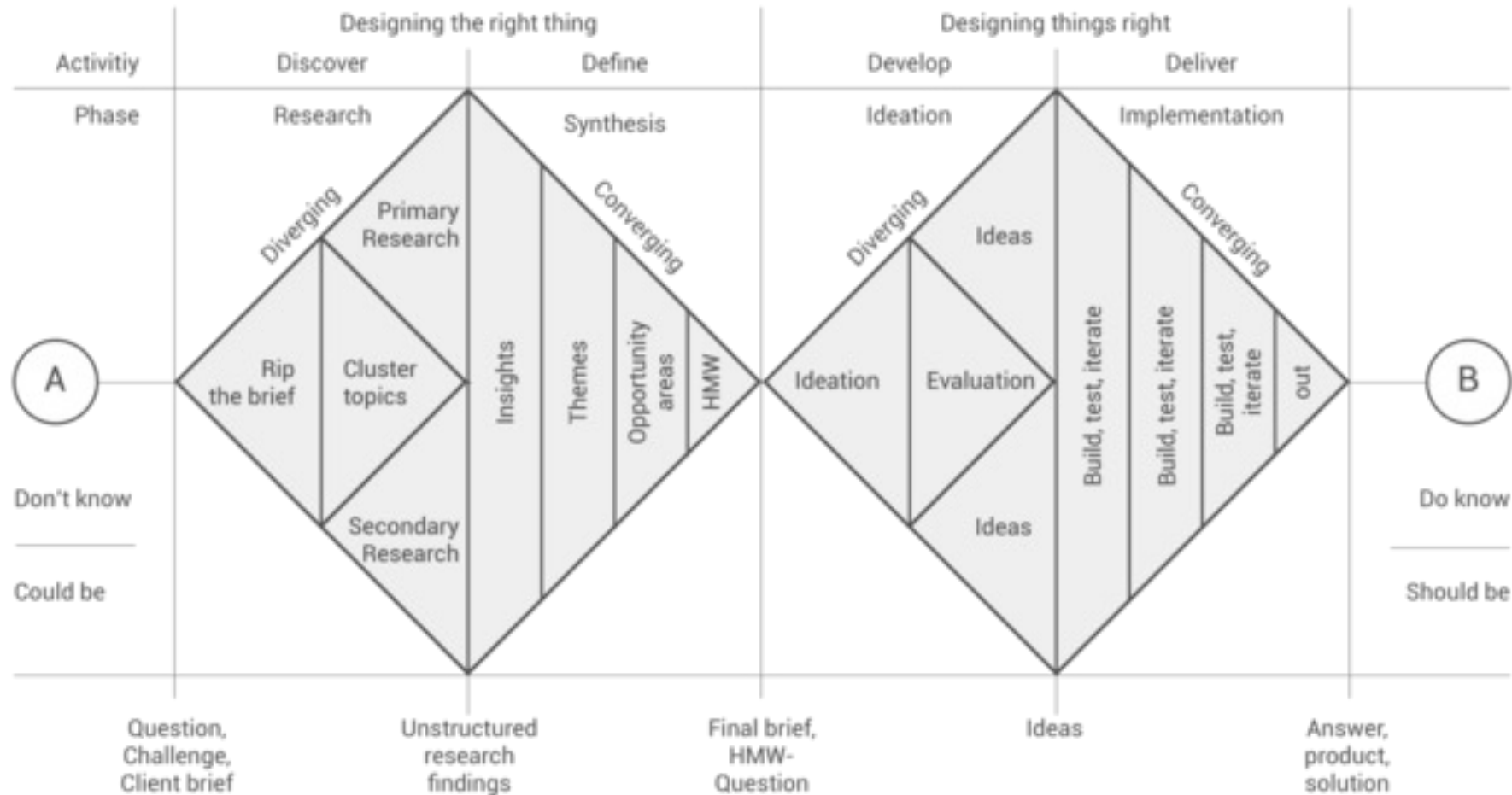
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What does a design process look like (4)

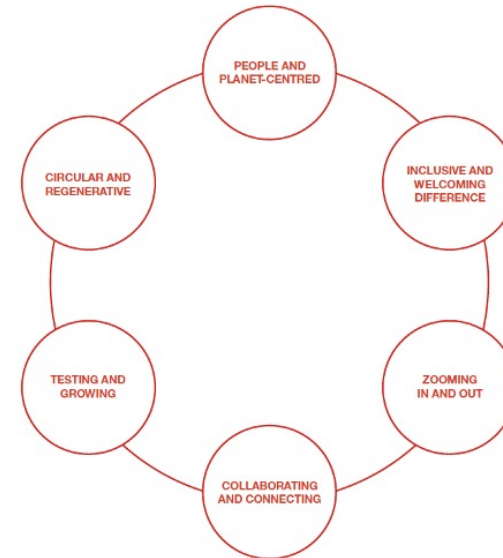
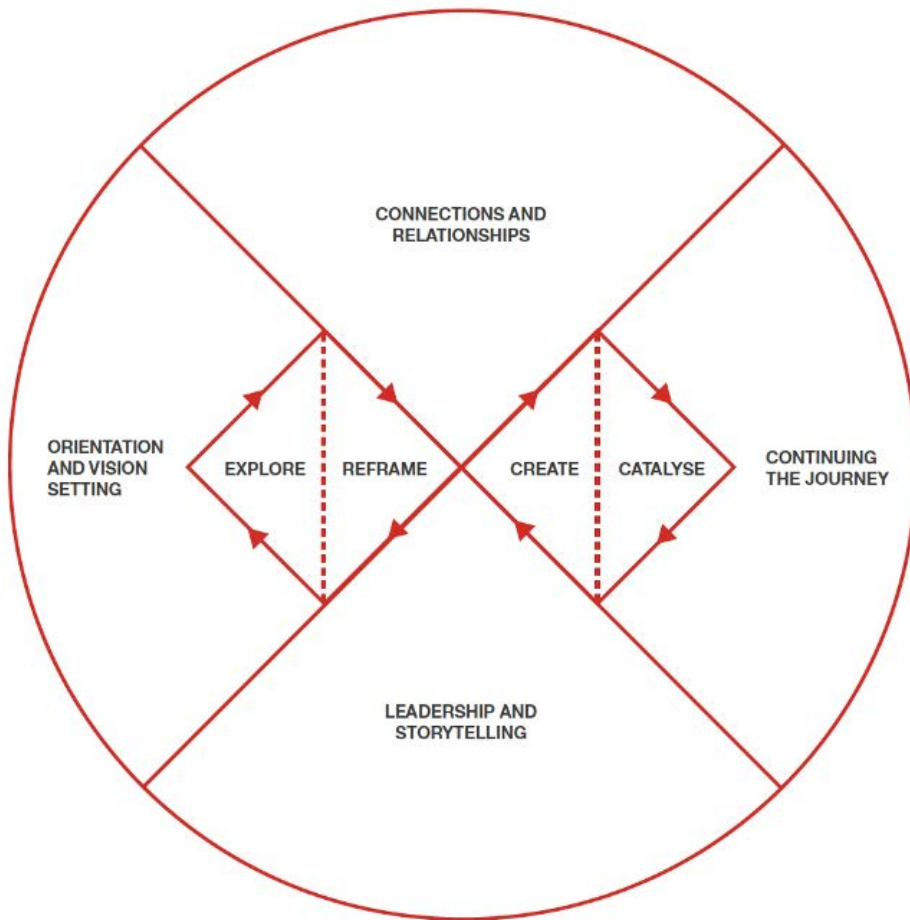


What does a design process look like (5):

Divergent and Convergent approaches



What does a design process look like (6): Iterative, Cyclical and Systemic approaches



SIX PRINCIPLES FOR SYSTEMIC DESIGN

Our set of six principles aims to guide activity. They can be used to help people to develop or adapt new design methods and tools from their own practice:

PEOPLE AND PLANET CENTRED

Focusing on the shared benefits of all living things

ZOOMING IN AND OUT

From the micro to macro, from root cause to hopeful vision, from the present to the future, from the personal to the wider system

TESTING AND GROWING IDEAS

Making things to see how they work and help more things emerge

INCLUSIVE AND WELCOMING DIFFERENCE

Creating safe, shared spaces and language to bring in multiple and marginalised perspectives

COLLABORATING AND CONNECTING

Seeing a project as one element in a wider movement for change

CIRCULAR AND REGENERATIVE

focus on existing assets – physical and social – and how we can re-use, nurture and grow these

Qualities of different Design Processes

Uni-directional / Bi-directional

Sequential / Parallel

Linear / Cyclical

Tidy / Messy

Structured / Unstructured

Closed / Open

Expansive / Constraining



Back to the Miro!

https://miro.com/app/board/uXjVMkVVclw=?share_link_id=60487255773



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Activity 4!: 10 minutes

Uni-directional / Bi-directional

Sequential / Parallel

Linear / Cyclical

Tidy / Messy

Structured / Unstructured

Closed / Open

Expansive / Constraining

Write a post-it note for at least four images chosen by other students that uses these keywords (and others) to describe them.

Place the post it on the image you are describing



Tasks for the next 7 days:

1. Your prep work for next week's lecture

- i. Read this online article introducing "research through design":
<https://www.designdisciplin.com/the-three-faces-of-design-research/>
- ii. If helpful, also watch the video related to it (same content):
<https://youtu.be/CIKtqj389dl?si=hYM9ekElthkA8U-i>
- iii. **Optional:** Chapter 1 of "Interaction Design: Beyond the Interface" – "What is Interaction Design?" This is on the Library resource page for CDI1:
<https://eu01.alma.exlibrisgroup.com/leganto/readinglist/lists/43389602770002466>

2. Complete your first Class Notebook submission in MS Teams:

- i. Write 3 reflections from this week's opening lecture – what did you learn? Don't just tell us "I learned how to use MS Teams and Miro...!".
- ii. Write 2 questions you have based on the prep work for us (John and Susan) to consider for our lecture next week.
- iii. Write 1 comment – something you have learned, are intrigued by, something related to your background and interests – prompted by the prep work.



Tasks for the next 7 days:

Important final tip!:

Write your Class Notebook text in Word (or similar) and keep a local copy, just in case there is a problem with saving it to the cloud. Make sure when you enter it into the Class Notebook that it is saved (e.g., make sure you are online, re-load to check it is there!)



Any questions?

If you have any questions about this week or next week, contact me at :
john.vines@ed.ac.uk

