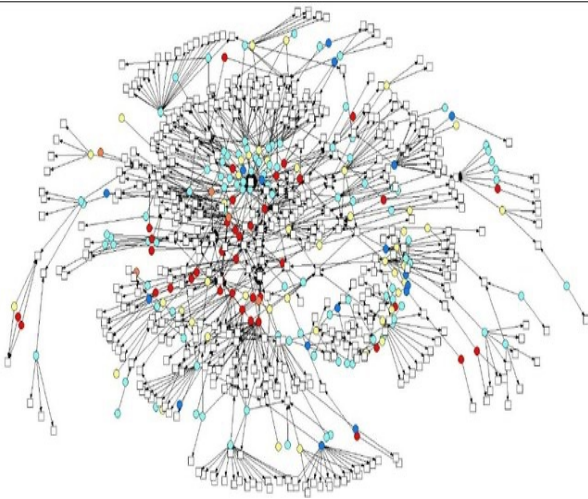# Towards Information Design Requirements of 4th Space as a Smart and Fair Information Ecology

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http://gordana.se/

Introduction: Social Networks

Example of Social Network
Visualization
https://misq.umn.edu/what-s-different-about-social-media-networks-a-framework-and-research-agenda.html

The social network is a theoretical framework used in the social sciences to study relationships between individuals, groups, organizations, and societies. The term describes a social structure determined by such interactions.

This theoretical approach is relational, as social phenomena are primarily conceived through the properties of relations between and within units. Criticism of social network theory that individual agency is often downplayed is met in practice in agent-based modeling, where network nodes exhibit agency.

https://en.wikipedia.org/wiki/Social_network

Social Capital

Social capital is based on networks of relationships between people, with shared norms, values, reciprocity and understanding that facilitate co-operation between different social groups.

Such networks are typically dynamic informational ecologies (Floridi)*.

*Floridi, L. The Philosophy of Information; Oxford University Press: Oxford, UK, 2011.
Dodig-Crnkovic, G.; Hofkirchner, W. Floridi's "Open Problems in Philosophy of Information", Ten Years Later. Information 2011, 2, 327–359.

Social Network's Places and Spaces

In the knowledge economy, social networks are connected to specific spaces and places (Morisson).

A typology over such spaces posits that

the 1st place is the home,

the 2nd place is work and

the 3rd place are cafés and other informal places where people meet "to enjoy each other's company" (Oldenburg& Brissett).

the 4rd space is the combination of the first, second and the third place (Morisson).

Morisson, Arnault (2018). "A Typology of Places in the Knowledge Economy: Towards the Fourth Place". Springer.
https://en.wikipedia.org/wiki/Third_place
Oldenburg, R.; Brissett, D. The third place. Qual. Sociol. 1982, 5, 265–284. [Google Scholar] [CrossRef]

The 4th Space

The 4th Space is the new type of social environments that are

unifying:

- *co-living spaces:* live and work (1st + 2nd space)

- *co-working spaces:* share work and socializing (2nd + 3rd space)

- *co-mingling spaces:* share living and socialize (1st + 3rd space).

The 4th Space

The 4th space holds a diversity of new social environments, typically referred to as *hacker spaces, maker spaces, Living Labs, FabLabs, shared living spaces, coliving, and coworking spaces.*

Smart Spaces and Places*

Spaces and places are understood broadly from a range of views, including social, cultural, political, ethical, legal, economic, behavioral, ontological, and cognitive perspectives. Special issue is divided into four thematic areas:

(1) Spaces, places, and smartness

(2) Analytical smartness

(3) Critical smartness and

(4) Smart sustainability and policy

Generative Mechanisms Behind Spaces & Need for Value-based Design

Communities are manifested and developed through digital rhizomatic* connections in a world of smart phones and computers, contributing to the blurred separation between home, work and other social spaces.

Research shows that some citizens are currently excluded from access to various parts of society, due to lack of motivation, skills, economic reasons, preferred types of communication, various impairments and other reasons.

A rhizome is a concept in post-structuralism describing a nonlinear network that "connects any point to any other point". It appears in the work of French theorists Deleuze and Guattari.

Generative Mechanisms Behind Spaces & Need for Value-based Design

Access to information and skills to use communication technology are necessary for informed participation in democratic societies.

Sustainable value-based design with accessibility, inclusiveness and fairness as basic requirements needs to be considered in a networked society on all levels of organization.

People of all ages and possible impairments must be able to take part in and move smoothly between the different spaces.

This perspective is supported by the SDG goal 10 - Reduced inequalities between and within countries.

TOWARDS INFORMATION DESIGN REQUIREMENTS OF 4ᵀᴴ SPACE AS A SMART AND FAIR, INCLUSIVE INFORMATION ECOLOGY

Information design is often understood as the practice of presenting information in a way that enables an efficient and effective understanding and use of the information.

It overlaps with fields *of communication design, data visualization,* and *information architecture.*

However, in the case of emergent technologies, whose design is predominantly speculative design see the Appendix)*, information design addresses possible futures and facilitates decision making about the future, based on value-centric, human-centric approach.

*Anthony Dunne and Fiona Raby (2013) SPECULATIVE EVERYTHING: DESIGN, FICTION AND SOCIAL DREAMING. The MIT Press, https://mitpress.mit.edu/books/speculative-everything

Open Questions

Emerging virtual communities within the digital 4th space open important questions:

- How can digital communities be structured and organized on communicative, structural, legal, economic, interactive design and techno-social levels to thrive, while bridging the digital divide within societies?

The 4th space is expected to fulfil the functions of a smart digital community place (Morisson, Oldenburg), space (Horni, Soja) or hybrid space and place, also known as "splace" (Shaw & Sui) for science, economy, politics, culture and smartness by creating value for individuals and organizations, taking into account the different perspectives and wishes (Granovetter).

Soja, E. Thirdspace: Journeys to Los Angeles and Other Real-And-Imagined Places; Blackwell Publishers: Hoboken, NJ, USA, 1996.
Shaw, S.-L.; Sui, D. Understanding the New Human Dynamics in Smart Spaces and Places: Toward a Splatial Framework. Ann. Am. Assoc. Geogr. 2019, 112, 505–521.
Granovetter, M.S. The Strength of Weak Ties. Am. J. Sociol. 1973, 78, 1360–1380.

Open Questions

Moving from the 1st private Space and 2nd working Space to a 3rd Social Space (Oldenburg), through digital and virtual networks of rhizomes (Deleuze & Guattari), to 4th Space (digital-social) and back, is a process which generates new infrastructures and interactions.

Both conceptually and physically, these specific new informational ecologies (Floridi) are radically changing human and social relationships, especially with ICT and smartness/AI.

- How are we going to design & build those emerging informational ecologies in a sustainable, human-centric, and inclusive ways?

Deleuze, G.; Guattari, F. A Thousand Plateaus; Athlone Press: London, UK, 1988.
Floridi, L. The Philosophy of Information; Oxford University Press: Oxford, UK, 2011.
Dodig-Crnkovic, G.; Hofkirchner, W. Floridi's "Open Problems in Philosophy of Information", Ten Years Later. Information 2011, 2, 327–359.

Open Questions

Combinig 1st (private), 2nd (working) and 3rd (social) space in the 4th Space (private-working-digital-social) brings questions of new balance between private and public and related question of cognitive sustainability (Jägemar, Dodig).

For example privacy and spontaneity of behaviour of the first space is not automatically implemented in the 4th space, which is by necessity guided by social norms and expectations.

- To what extent can 4th space integrate 1st (private), 2nd (working) and 3rd (social) space?

- Will children be allowed/welcome to the 4th space? Will there be playgrounds?

- Place for people unrelated to work?

- Silent places for meditation and seclusion?

Jägemar, M.* and Dodig-Crnkovic, G. Cognitively Sustainable ICT with Ubiquitous Mobile Services - Challenges and Opportunities. In Proceedings of the 37th International Conference on Software Engineering - ICSE '15, Vol. 2. IEEE Press, NJ, USA, 531-540.

Open Questions

"Every person needs a medium to be part of the "virtual world". This includes the technical aspect as well as the software that is required to enter the "4th Space". " (Daniel Hardegger)

"… we have to treat every community, even if we think it solely exist in the 'virtual world' or the 'actual world', as a 'hybrid community'." (Daniel Hardegger)

- How will digital divide be addressed in 4th space (Kania-Lundholm)?

- How will ethics of AI be implemented?

Kania-Lundholm, Magdalena. "Slow Side of the Divide?: Older ICT Non- and Seldom-Users Discussing Social Acceleration and Social Change" *Digital Culture & Society*, vol. 5, no. 1, 2019, pp. 85-104. https://doi.org/10.14361/dcs-2019-0106

Transdisciplinary/Interdisciplinary Approaches for Value-based Design of 4th Space

Given transdisciplinary nature of these questions, it is necessary to implement co-producing knowledge methodologies, to achieve the following:

1) Speculative design addressing not only existing but also new emerging and possible technologies

1) The communicative design of the spaces in a user-centered way. Based on human users and their values and preferences regarding both virtual and physical spaces

2) Ethical and legal requirements for the 4th Space, with new actual (analogue) and emerging digital identities and new types of involved agencies.

3) The cognitive, structural, economic, social and technological challenges, setting up the user context and physical/virtual environment, connecting AI, gamification, and virtualization.

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APPENDIX: SPECULATIVE DESIGN

Speculative design combines informed, hypothetical extrapolations of an emerging technology's development with a deep consideration of the cultural landscape into which it might be deployed, to speculate on future products, systems and services. These speculations are then used to examine and encourage dialogue on the impact a specific technology may have on our everyday lives. The familiar and engaging nature of the designed output is intended to facilitate discourse with a broad audience: from experts in the field such as scientists, engineers and designers to the consumers and users of technological products and systems. Auger Loizeau

https://elviavasconcelosblog.wordpress.com/2017/01/15/what-is-speculative-critical-fiction-design-part-1/

SPECULATIVE DESIGN CREATES SPACE TO…

Arrange emerging (not yet available) technological 'elements' to hypothesise future, products and artefacts

Apply alternative plans, motivations, or ideologies to those currently driving technological development, in order to facilitate new arrangements of existing elements

Develop new perspectives on big systems

SPECULATIVE DESIGN FACILITATES…

Asking 'What is a better future (with respect to present)?'

Generating a better understanding of the potential implications of a specific (disruptive) technology in various contexts and on multiple scales – with a particular focus on everyday life.

Moving design 'upstream' – to not simply package technology at the end of the technological journey but to impact and influence that journey from its genesis.

SPECULATIVE DESIGN ASKS…

What would life be like if we had such technologies?

It can act as a cultural and behavioural litmus test, trying out applications before they happen and allowing for adjustments to be made.

Its agenda is to facilitate a more democratic and considered approach to technological development.

SPECULATIVE DESIGN ADDRESSES CHALLENGES AND OPPORTUNITIES OF THE FUTURE

Speculative Design is used to describe work that uses design (products, services, scenarios) to address challenges and opportunities of the future. It tends to look 5-10+ years forward and speculate on how things could be and what future we want or don't want based on these scenarios.

SPECULATIVE EVERYTHING

SPECULATIVE EVERYTHING

DESIGN, FICTION, AND SOCIAL DREAMING

ANTHONY DUNNE & FIONA RABY

A TAXONOMY OF FUTURES

Present — Futures

Possible
Plausible
Probable
Preferable

"what if" questions

Redrawn from *Speculative Everything* redrawing Stuart Candy

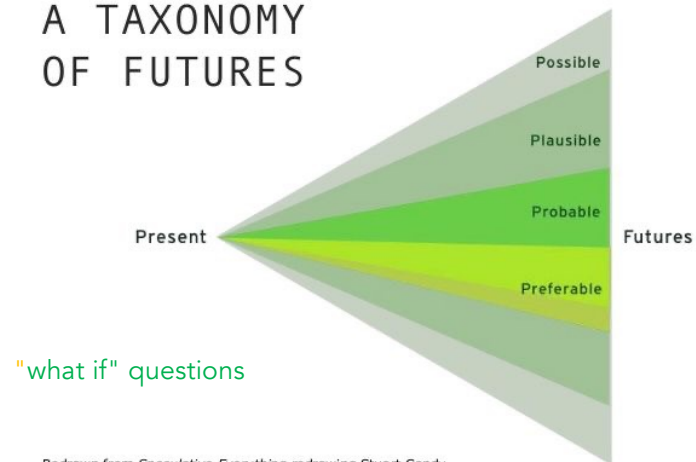**Table of Contents:**
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