Reordering the "World of Things"? A Sociotechnical Imaginary of RFID in the Making



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- part of a larger FFG-funded project REFlex (coordinated by Holger Arthaber, TU Vienna) which investigates a localization system of passive RFID tags for an intelligent process control system – improve the precision and distance of localization.
- supposed to do a lot of work in ordering specific parts of the world
- Core enabling technology when it comes to realising a future "internet of things"
- Economic promise: we currently speak of a 10 Billion Dollar market expected to further rise in the next decade as RFID tags and the reading equipment become more accurate, smaller and cheaper to produce and use
- a number of concrete **concerns** on the level of ethical and societal aspects, e.g., consumer protection concerning the "invisible" intrusions into the privacy of those "attached" to these objects





"little tags": Radio-frequency Identification tags (RFID) Early protests



SEND BENETTON A MESSAGE: Don't buy clothing with tracking devices!









Conceptual framing

- Technological scripts (Akrich 1992):
 - ✓ designers imagine and try to frame an object's context of use and its user's behaviour by inscribing their vision of the world in the artefact's design
 - ✓ Delegation of responsibility to artefacts
 - ✓ users might have very different ideas about the technology, the world inscribed in it, and their attributed roles ==> struggle with, attempt to shift, or even reject the script (question whether and how this is possible)
- engineering practices as materializing morality (Verbeek 2006): doing "ethics by other means"

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Conceptual framing

- standardization and classification as a way of making reality ==> standards as infrastructures that implement and stabilize certain (value) orders (Busch 2011)
- Sociotechnical imaginaries (Jasanoff 2015): "collectively held, institutionally stabilized, and publicly performed visions of desirable futures, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology."





Material and Analysis

- Video analysis: 2015 Enso Detego launched their rebranding → the image film "Detego – Intelligent Article Management for the Fashion Industry"
- length of 3 minutes and 14 seconds, containing 56 takes
- the viewer is guided through changes (in practices) on a shop floor introduced through an RFID system.

The video can be viewed at: <u>www.detego.com</u> In the presentation we use single pictures to illustrate our argument



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4 moments of reconfiguration of "the technological" and "the social"







M1a: Untagged disorder



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M1b: Invisible infrastructural geography







M2a: Switching the ontological status



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M2a: Switching the ontological status

- Transformation is visualised as waves make the target sign appear ==> localizing, awakening and alignment of their gaze are ultimately linked
- Inversion (control reversal): humans are tagged and become readable "items" to be "communicated with" in order to surveil, track, relocate, ….
- Transformation:
 - Inactive ==> disciplined activity
 - Disorder ==> order (which defines the scope of activity and the location)





M2b: Counting and accounting



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M2c: Disciplined activity







M3a: Ordering and being ordered



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M3b: Fine distinctions







M3c: A place in a space



Transgressing the boundary of the space to be ordered

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M4: Liberating the humanized "items"







Concluding observations

Reverse anthropomorphism: instead of attributing human traits, emotions, and intentions to nonhuman entities, in our case humans represent and take over the role of "items"

==> could be read as an implicit (un-wanted) hint towards the intertwinement of human and non-human actors that will inhabit this world performed through this sociotechnical imaginary





Concluding observations

- Sociotechnical imaginary of RFID tagged world in the making: "sociotechnical imaginaries can originate in the visions of single individuals or small collectives, gaining traction through blatant exercises of power or sustained acts of coalition building." (Jasanoff 2015)
 - highly moral narrative of perfect efficiency and order ==> benefits (vs costs) of technological change
 - ✓ specific definition of the public good (the ordered world?), how is it being fostered or threatened
 - sheds light on the hidden social & moral dimensions as well as cultural resources that should help shape our relation to innovation
 - ✓ adaptative work needed to fit with changing environments



Concluding observations

Key elements of the STI:

- ➢ order as a dream of modernity (Law)
 - ➤ strict classification (through tagging)
 - ➤ algorithm which defines matter out of/in space-time
- Ideal use of (physical) time and performance of an accompanying imaginary of a perfectly efficient world
- ➤ Transformation of work: effortless
- Lays out a specific "geography of responsibility" (Akrich 1992)

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Concluding observations

Adaptative work: potential concerns are already embedded in this STI

through performing technological containment (to the shop floor) ethical concerns become limited in the same move changing the balance between benefit and concern

==> importance of image of liberation when people-items are turned into people again and can leave the time-space

==> in the context of RRI this poses the wider question of space-time features of responsibility

