



## *'The New Good': Designing Engaging Information Technology*

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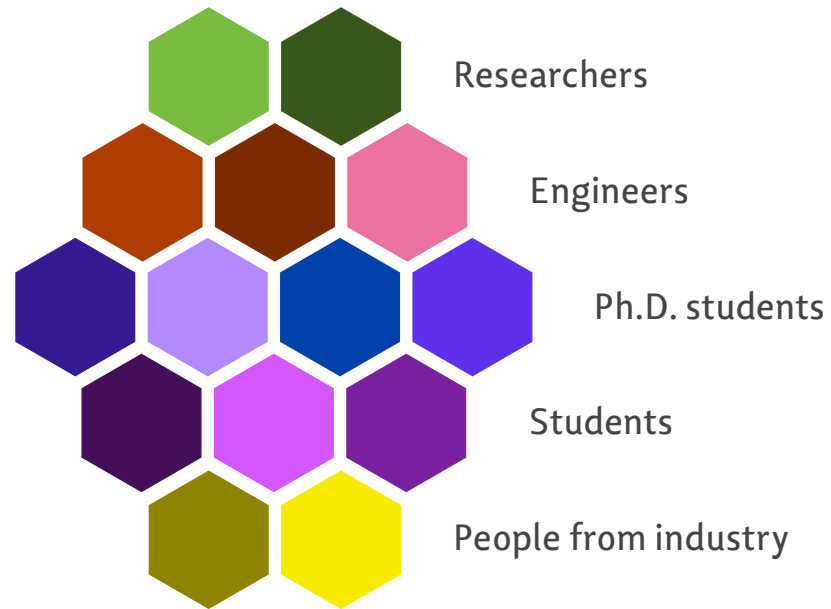


Umeå Institute of Design

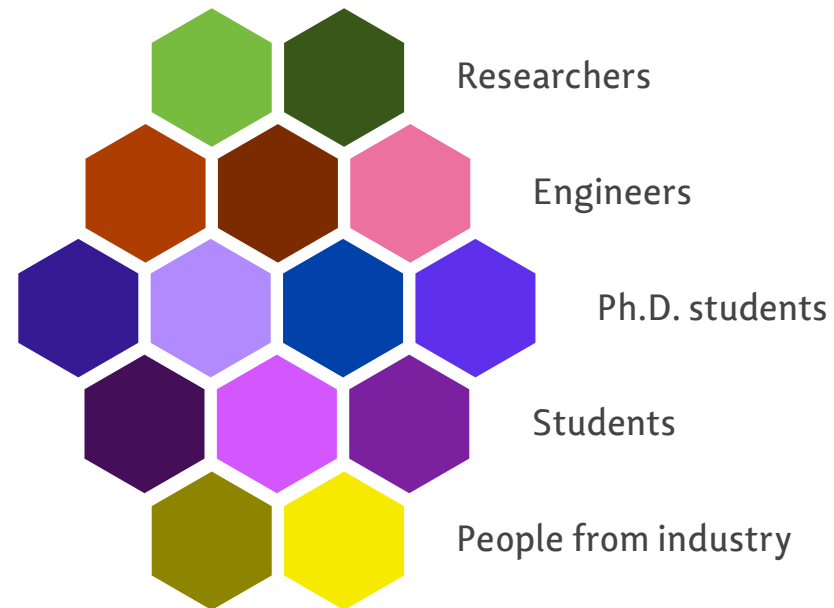
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## People from different academic backgrounds



Work together on joint projects in studio form



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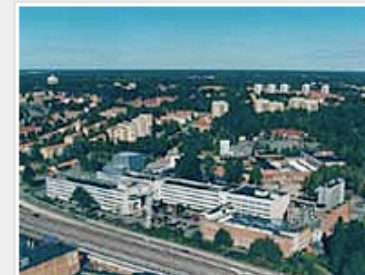
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## De är framtidens forskningsledare

**SSF har efter en omfattande beredningsprocess valt ut arton unga forskare till programmet Framtidens Forskningsledare 4. De beviljas 180 miljoner kronor i forskningsbidrag, jämnt fördelade på samtliga kandidater.**



SSF har skapat programmet Framtidens Forskningsledare för att lyfta unga forskare med potential och ambition att bli Sveriges framtida ledare inom akademisk och/eller industriell forskning. Den 16 december var väntan över för de 160 forskare som lämnat ansökningar till SSF:s utlysning. Då samlades de 18 utvalda forskarna hos SSF. De fick bland annat ta emot diplom från SSF:s styrelseordförande Ulla-Britt Fräjdin-Hällqvist, som tecken på att de har rätt förutsättningar för att leda framgångsrik svensk forskning i framtiden. Var och en får nu tio miljoner kronor i forskningsbidrag

--- Genvägar ---

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## De är framtidens forskningsledare

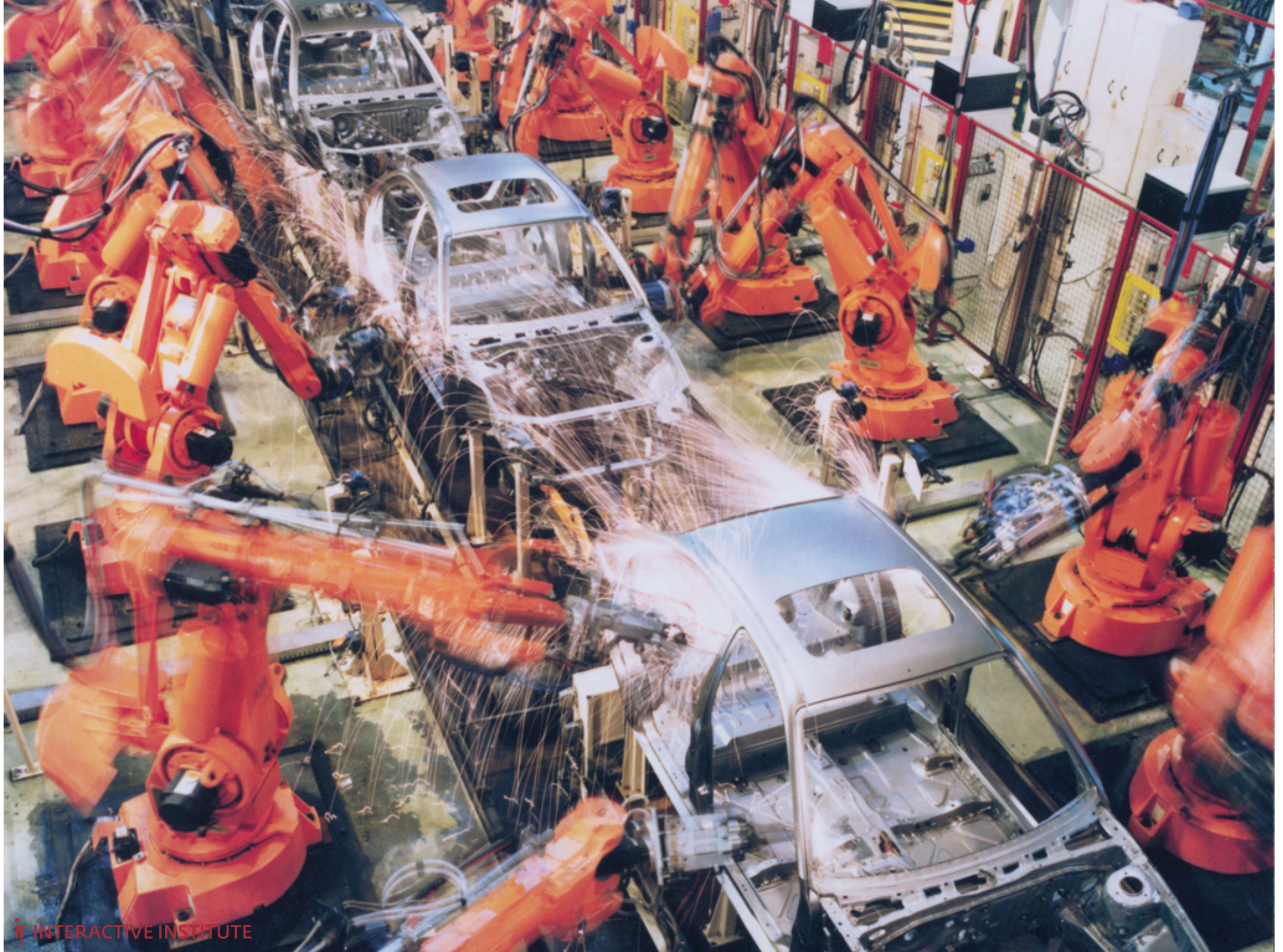
SSF har efter ett omfattande beredningsprocess valt ut arton unga forskare som kommer bli Framtidens Forskningsledare. De beviljas stöd för i forskningsbidrag, jämnt fördelade på sex år.



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Extreme Interactions



Extreme Environments

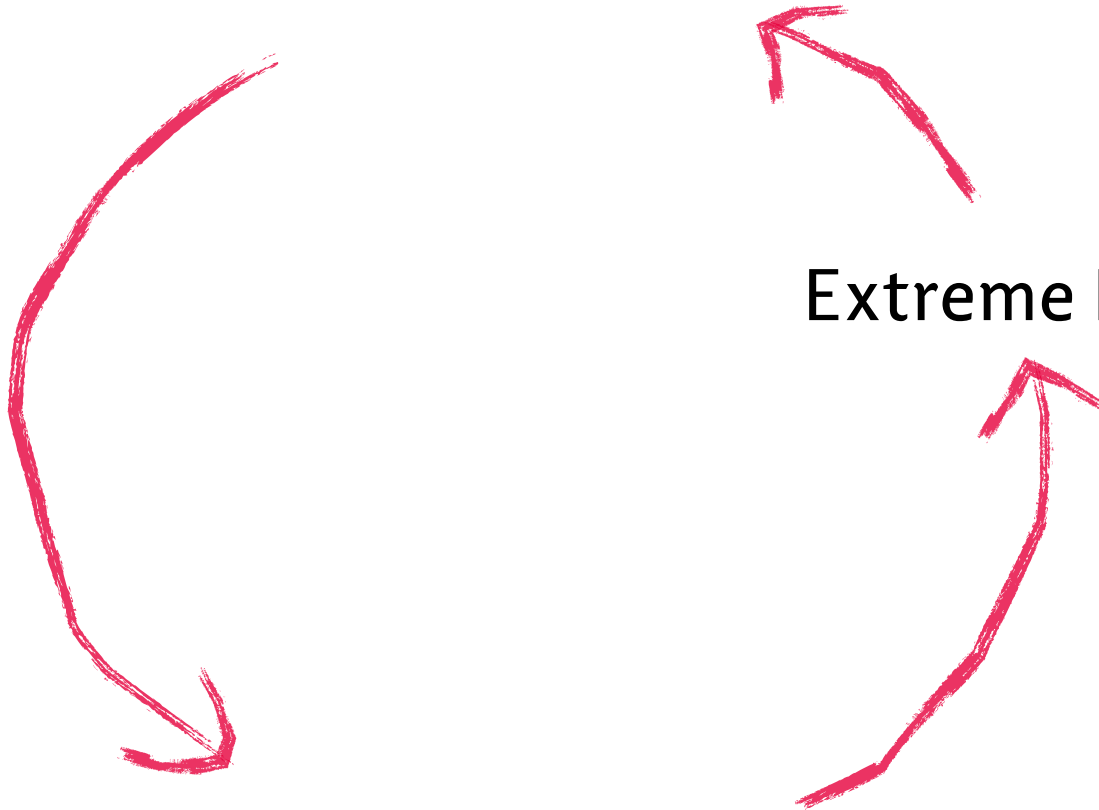


Extreme Users

Extreme Interactions

Extreme Environments

Extreme Users







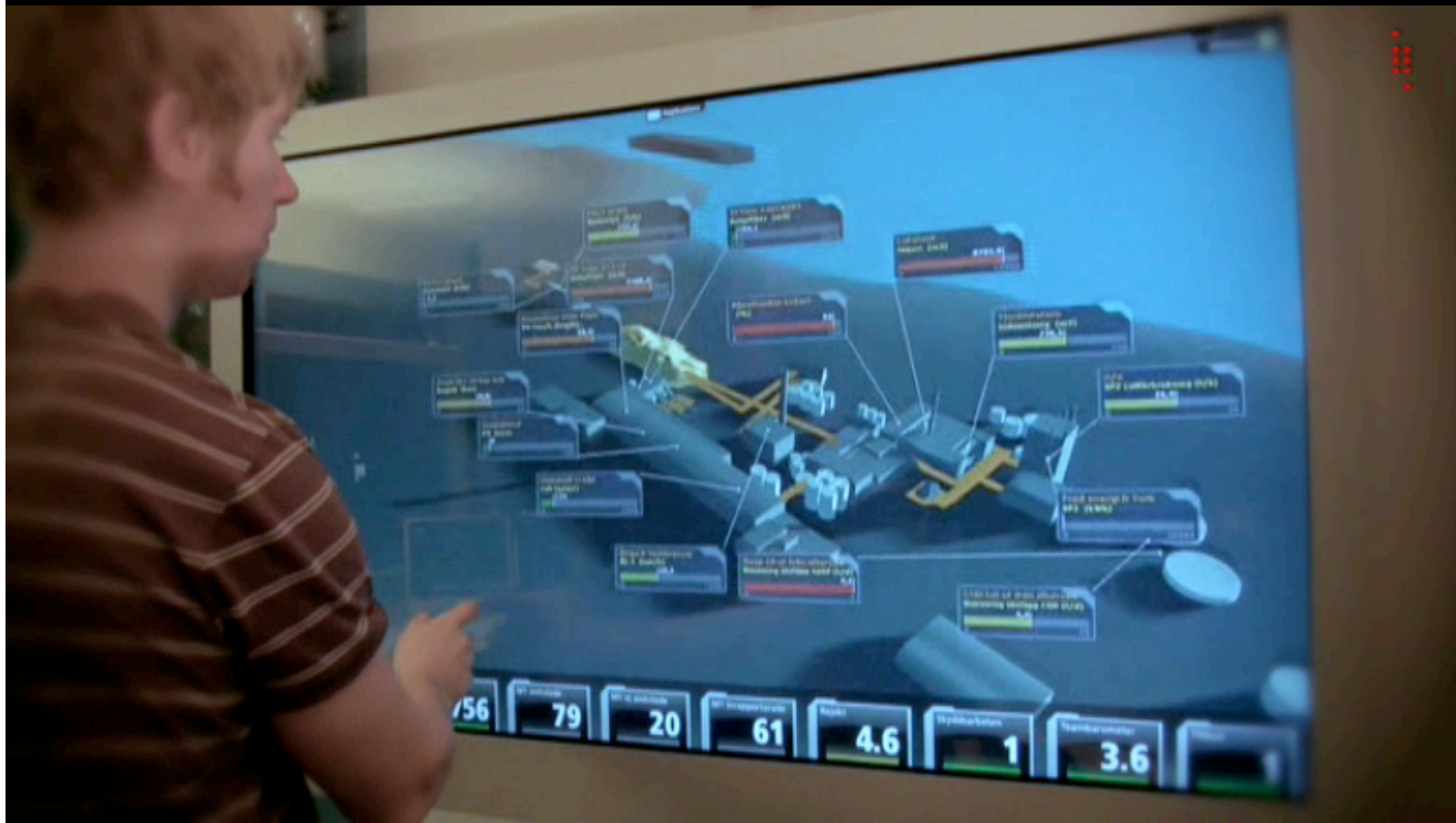
SCA Paper Mill, Obbola, Sweden



Rolf

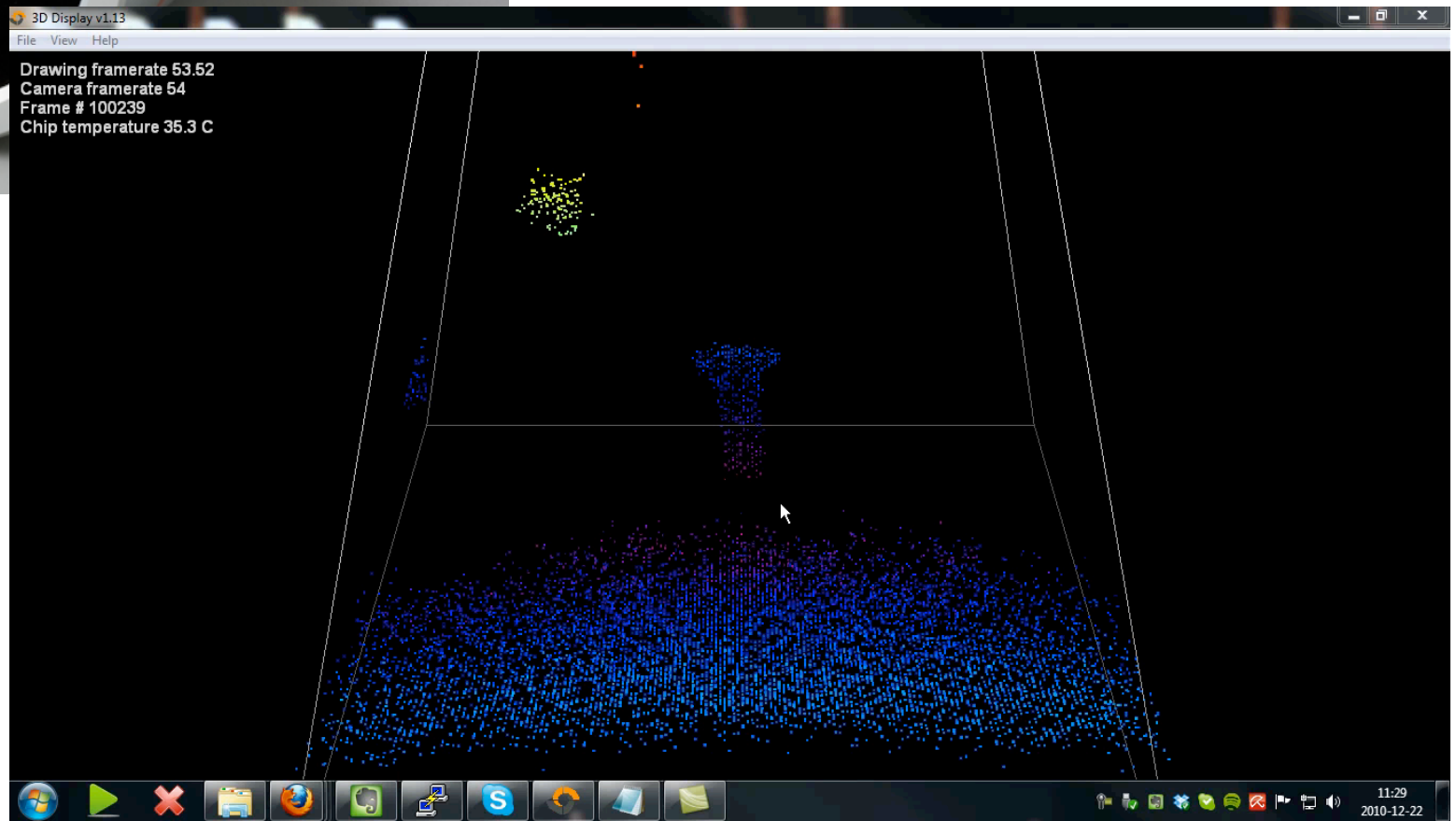
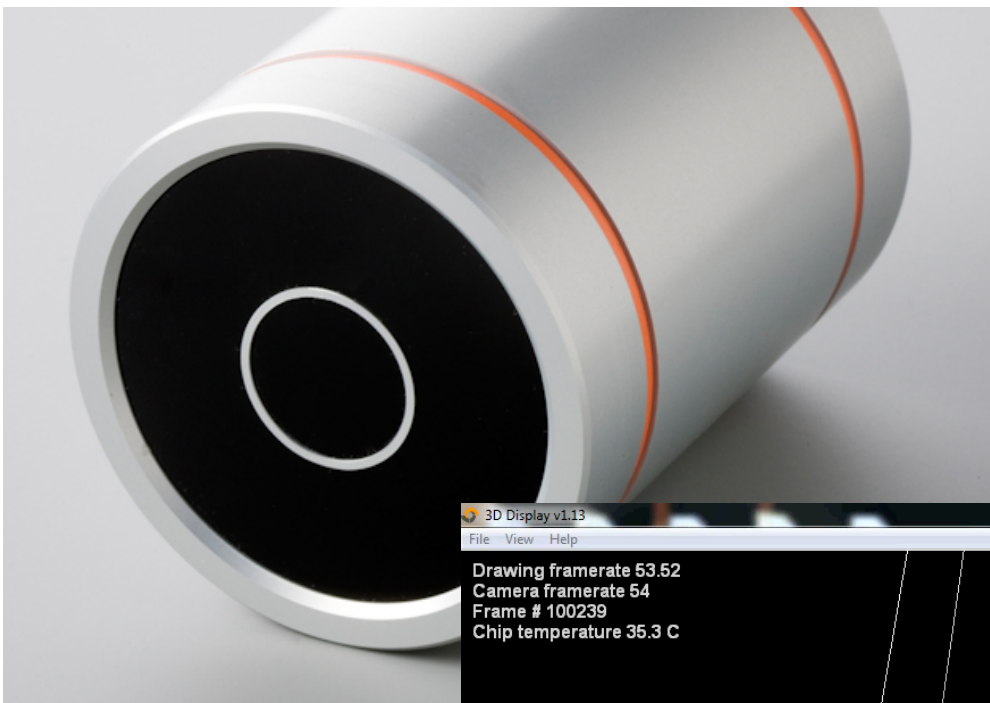








## Woodbot Pilots



# Woodbot Pilots

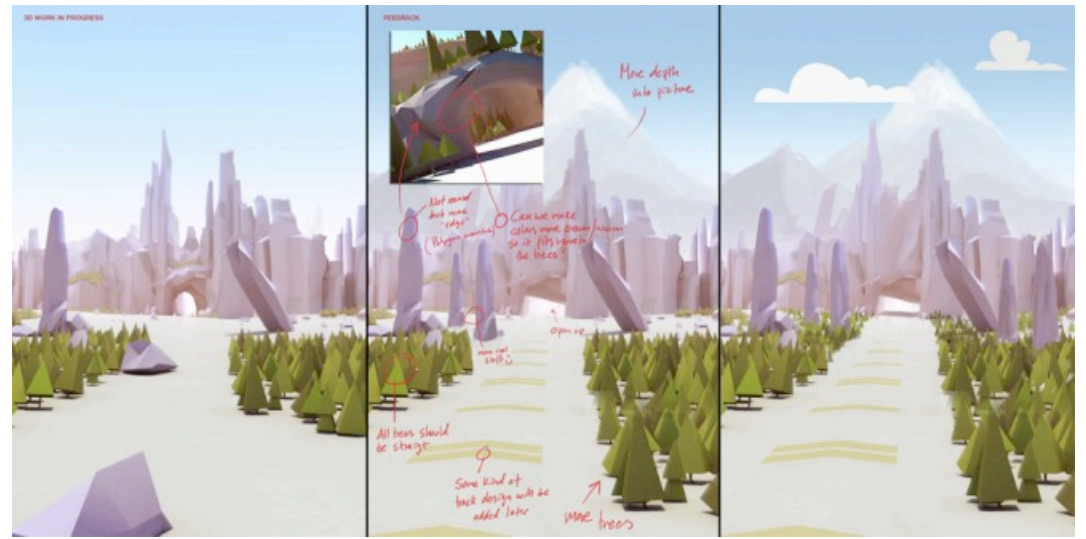
INSTALLATION DESIGN  
SKELLEFTEÅ AIRPORT

FRONT

SIDE



BACK



# Woodbot Pilots





So, 'the new good?'

# Challenges

- The concept of designing for *user experience* is rapidly catching on in HCI as an alternative to traditional usability metrics
  - Yet, few well-developed notions exist with regard to what would constitute a ‘good’ user experience
- The pervasiveness of digital technology in our everyday life
  - Increasingly difficult to distinguish a ‘user experience’ from any other kind of experience
- Several recent trends (e.g. ubicomp) are blurring the traditional concept of ‘user’
- Other trends (e.g. crowd-sourcing) are challenging the concept of ‘design’ and ‘designer’

# Complexity

- The problems with which HCI are concerned have grown considerably in complexity
- Increased complexity has shifted *the kinds of investigation* we are involved with...
- ...from relatively well-defined, controlled problems to open-ended design situations and problem areas
  - Termed 'wicked problems' in design research (Rittel & Webber, 1973)



*A brief historical backdrop*

# HCI's 'First Wave'

- Through the term usability, traditional HCI has taught us that interactive systems should be designed to be *effective, efficient, engaging, error tolerant, and easy to learn*
  - a collective term for a particular set of ideas about the relationships between users, analysts, designers, artifacts, and context
- Goal was to improve interactive artifacts by making them more useful
  - achieved through maximizing usability metrics
  - theoretical foundation in information processing; predicative models
  - methodological foundation in cognitive psychology; experiments
- A shared technical terminology, a set of techniques, methods, and tools, and not least *a communal sense of for what to strive*

# First Wave's 'Good'

- The purpose of this talk is *not* to complain about usability
  - Few would probably disagree to the argument that usability thinking has come to improve the software industry over the years
- What I am after is the underlying, often implicit notion or vision of 'good' when it comes to HCI work
  - in traditional usability work, to make interactive artifacts more useful
  - what these artifacts actually do is less interesting
- Here, 'good' is often reduced to signify those designs that show high levels of usability
  - measurable, quantifiable, analyzable
  - publishable in academic journals and conference proceedings
  - appear credible to industry boards and committees



# HCI's 'Second Wave'

- HCI came to a theoretical 'crisis' towards the end of the 1980s
  - e.g. Winograd & Flores 1986; Suchman, 1987
- More encompassing theories and associated methodological approaches were proposed in the early 1990s
  - including participatory design, ethnography and ethnomethodology, phenomenology, ecological psychology, distributed and external cognition, activity theory
- HCI's focus shifted from solving specific tasks to a broader look at particular work settings
  - 'Context'
  - Supporting collaboration rather than specific tasks
  - Actively working together with users in participatory workshops, prototyping, ethnographic attitude

# Second Wave's 'Good'

- When it comes to second wave HCI, the concept of 'good' becomes a little hazier
  - Participatory design, for instance, brings to the table the challenge of also incorporating political issues, labor and power relations
- 'Good' became whatever enhanced the group work process
  - focus on well-defined professional teams with their specific tasks at hand and in their particular work context (and with groupware as a typical solution)
- Usability remained as a strong underlying theme



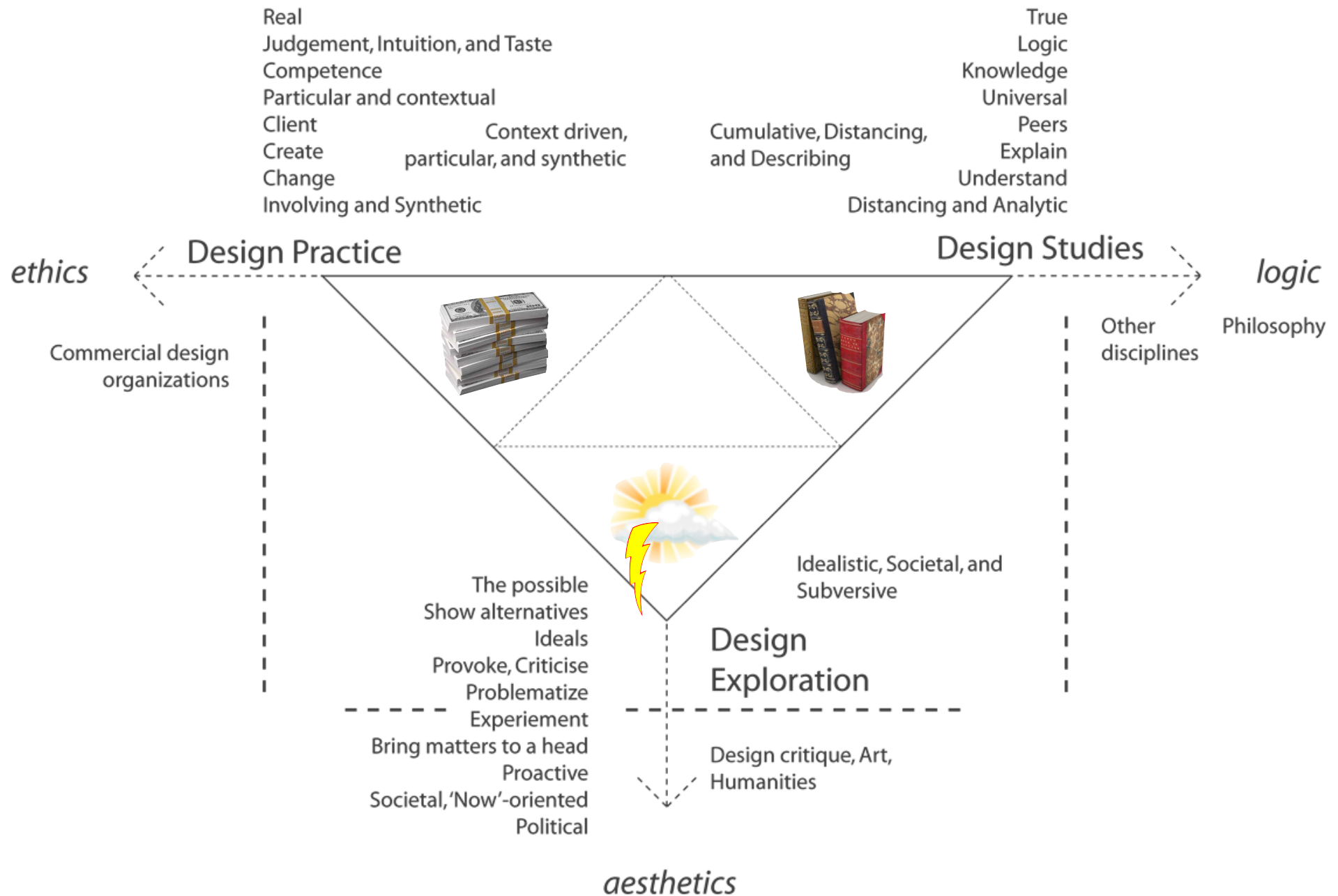


# HCI's 'Third Wave'

- As computing and digital technologies became ubiquitous in our daily lives during the end of the 1990s and early 2000s, the boundaries between public and private, work and leisure, started to blur significantly
  - Interactive technologies now truly changed from being tools for work to something through which the world could be experienced and explored
- To remain relevant, HCI felt the need to broaden its scope: it needed to study and design for technology use in a much wider variety of contexts

## HCI's 'Third Wave' (2)

- How do you study and design for people that are not at work, who do not appear in distinguishable groups, who do not have clear tasks at hand, and who may have a completely different culture than yourself?
- To find ways of tackling these new challenges, HCI rather rapidly became interested in *meaning, complexity, culture, emotion, lived experiences, engagement, motivation, embodiment and experience*
  - Research through Design, Critical Design, Ludic Design, Design-oriented Research, Reflective Design, Value-sensitive Design (VSD), and Value-Centered Design (and others)
- The 3rd wave reacted against the 2nd wave's strong commitment to users in favor of a more design-oriented stance
  - previous lack of emphasis on the designer; designer not 'transparent'
  - exploratory, interpretative, playful, ambiguous, and (at times) with an activist attitude



Fallman, D. (2008) The Interaction Design Research Triangle, *Design Issues*, Vol. 24, No. 3, p. 4-18, MIT Press.

<http://bit.ly/kBICoI>



An 'agitational artefact' (ParaSITE, Michael Rakowitz)

# Third Wave's 'Good'

- When it comes to third wave HCI, the notion of 'good' is far from obvious
  - There are often no easily distinguishable user groups to support (and to get feedback from)
  - Because of the blending of public and private (as well as work and leisure), any tasks to support are hard to find
  - The purpose of third-wave designs often remain somewhat unclear
    - How do you assess their quality?

# Is there a need for a ‘new good?’

- What currently appears lacking, especially in the light of recent 3rd wave approaches, is a more explicit idea about what it is HCI now strives for as a field
  - “HCI will not become a true discipline until it develops, expresses, discusses, agrees and integrates a set of core values” (Cockton, 2004)
- What is the ‘new good’ that replaces the maximizing of usability metrics and improving group work processes?
  - Put bluntly, what constitutes a ‘good’ user experience?

# Will we ever find it?

- The answer might be that HCI has developed to a point where shared visions are neither possible nor required
  - Given the broad scope of current HCI, maybe 'good' has to be relativistic, i.e. come in many forms, always depending on the particularities of the design situation
- While we might not arrive at a single distinguishable 'good', there is a danger in not critically examine the underlying vision of what we do as we might then implicitly or explicitly come to inherit earlier visions
  - such as usability, group work, direct manipulation, the disappearing computer, etc.
  - in designing for developing countries; homeless; disabled; etc, the notion of 'good' often outsourced to a third party (e.g. NGOs) while the relationship between designer and user often remains rather close to that of usability

# *The philosophy of technology*



# Two Philosophies of Technology

- We propose the possibility of drawing on *the philosophy of technology* as a way to help us better articulate, understand, and discuss the concept of ‘good’ in relation to current HCI design
- In the paper, I look in some detail at two contemporary philosophies of technology for inspiration:
  - Albert Borgmann’s (1984; 1992; 1999; 2000) theory of the *device paradigm*
  - Don Ihde’s (1979; 1983; 1990; 1993) notion of *the non-neutrality of technology-mediated experience*

<http://bit.ly/upQ3CN>



# Albert Borgmann

- Reconsiders the often-assumed correspondence between ‘useful’ and ‘good’
  - while particular technologies may be both useful and good, some technologies that are useful for some purposes might be harmful in a broader context
- Theory of the ‘Device Paradigm’
  - *Devices*
    - appealingly glamorous technologies, useful for a limited purpose
    - provide commodities, only one aspect of the original thing it replaces
  - *Things*
    - require our presence, patience, endurance, skill, and some amount of resoluteness
- Argues that we need to carefully nurture the focal things and practices that are currently threatened by thoughtless employment of technology





## Don Ihde

- Analyses the non-neutrality of technologically mediated experience
  - While technologies mediate our experience of the world, they “transform experience, however subtly, and that is one root of their non-neutrality” (Ihde, 1990, p. 49)
- Technologies appear in between humans and the world and change our experiences, amplifying some aspects while reducing others
- Technologies are *multistable*
- Three major types of human-technology-world relations:
  - *embodiment, hermeneutical, and alterity*





P R N D S

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1099

0.0 MILES

A fuel gauge consisting of a horizontal bar with a gas pump icon at the right end. The bar is filled with approximately 25% of its length.



# Philosophy of Technology

- The bulk of Borgmann's and Ihde's work is contemporary with the shift from first to second wave HCI (late 1980s to mid-1990s)
- Yet, there has actually been very little interaction between PoT and HCI
  - This is rather surprising given HCI's willingness to adopt and adapt theories, ideas, and concepts from other fields (!)
- Only in recent years a very modest body of literature in HCI has started to discuss their ideas
  - For example, Fallman 2004; 2007; 2010; 2011; Leshed et al. 2008; Odom et al. 2009; Pierce 2009, 2011



# Philosophy of Technology (2)

- Compared with many other philosophers, Borgmann and Ihde appear attractive to HCI in that they deal directly with today's technologies in a straightforward way
  - not primarily with the existential effects of 'Technology' (cf. Heidegger)
- Both authors have also chosen to communicate their philosophical ideas in a legible form, rendering them fairly easy to understand without extensive philosophical training
  - cf. Heidegger (!)
- At the same time, they sustain strong links to earlier philosophy
  - for instance in Borgmann's case with the dystopian undertones of Heidegger and Ihde's somewhat instrumental approach and the pragmatism of Dewey
  - This roots their thinking firmly within a larger philosophical setting

# The Non-Neutrality of Technology

- Borgmann and Ihde show that technologies are not neutral means for realizing human ends but actively help to shape our experiences of the world
- Technologies are not just tools at our disposal but can rather be seen as inducement, often so strong that people find themselves unable to refuse it
  - Twitter feeds, Facebook, Web pages, GPS navigation systems, Digital cameras, MP3 players, etc., are not technologies that can individually be understood as good or bad
  - when in use, these artifacts coalesce into culture—into a way of life
- This points to the moral and ethical capacity of the technologies we design *as a field*
  - a topic not commonly discussed in HCI

# Philosophy of Technology

- *Offer new perspectives*
  - Theories such as Borgmann's device paradigm offer new perspectives on the role of values in technology design that tend to operate on a different level than those suggested by first, second, and third wave HCI approaches

# Philosophy of Technology

- *Offer new perspectives*
- *Connect specific values with a larger philosophical discourse*
  - As today's philosophers of technology deal with the same technologies as we do in HCI, we have through them access to a vast history of thinking around ethics and technology and to the different philosophical strands particular ideas belong

# Philosophy of Technology

- *Offer new perspectives*
- *Connect specific values with a larger philosophical discourse*
- *Stimulate continued critical reflection on values and ethics in design*
  - Mainstream HCI tends to rather thoughtlessly connect technological development with societal progress and 'the good life'
  - Theories from philosophy of technology are often inherently reformist in nature and thus tend to stimulate critical reflection on values and ethics in technological development

# Philosophy of Technology

- *Offer new perspectives*
- *Connect specific values with a larger philosophical discourse*
- *Stimulate continued critical reflection on values and ethics in design*
- *Provide guidance concerning how to incorporate specific values in design*
  - Theories from philosophy of technology may provide guidance as to how specific values might be incorporated into design even if they are not explicitly design-oriented

# Designing for engagement with reality

- Approaching Borgmann's work from a design perspective:
  - how specific values might be incorporated into the design of interactive systems that foster engagement with reality
- What is a good user experience?
  - experiences that cultivate the value of individual patience
  - experiences that require substantial effort
  - experiences that require a great deal of skill on the part of the user
  - experiences that find a suitable balance between patience, skill, and effort
- What user experiences are to be avoided?
  - Avoid user experiences where a user's wishes are effortlessly granted and nothing is demanded in return
  - Avoid attempting to do things for our users
  - Avoid designing for user experiences that might become substitutes for genuine, real-world experiences

# Designing for engagement with reality

- How does one determine the success or failure of a user experience?
  - User experiences are to be considered failures if they fail to motivate and engage the user either positively or negatively
  - User experiences are successful if they bring us closer to genuine places, people, and things
- Do designers have moral and ethical responsibility for what they design?
  - When HCI starts to ask rich questions about what goes on in between a user and a computer interface, then also dealing with moral and ethical issues seems unavoidable



# The qualities of possible futures

- To conclude, the philosophy of technology seems to hold the capacity to influence the field of HCI through new conceptual tools and through ‘new ways of seeing’
  - could allow HCI to take a step or two beyond individual efforts of design and evaluation with particular groups of users in particular work or home related environments
- Can help us in starting to think about *the qualities of the possible futures* we suggest

# Designer responsibility

- Design is about choosing between different kinds of futures
- The choices we make as designers influence the world in ways that are often irreversible
- This makes us as designers responsible for what we bring to the world
- In current HCI, this largely ethical perspective is often overlooked, waved aside, or thrown to users

# Thanks!



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