Workshop
Product Service Systems design in the age of digital fabrication:
Who's designing now?

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When we design our PSS in CRISP we do not think too much about the relationship between the designer of a PSS on the one hand, and the providers and users of the implemented PSS on the other. We assume that the design is complete once providers and users engage with the implemented PSS. However, there are examples where users and providers design too, from customising to finishing to creating designs as part of the PSS. This is greatly empowered by the digital fabrication revolution.
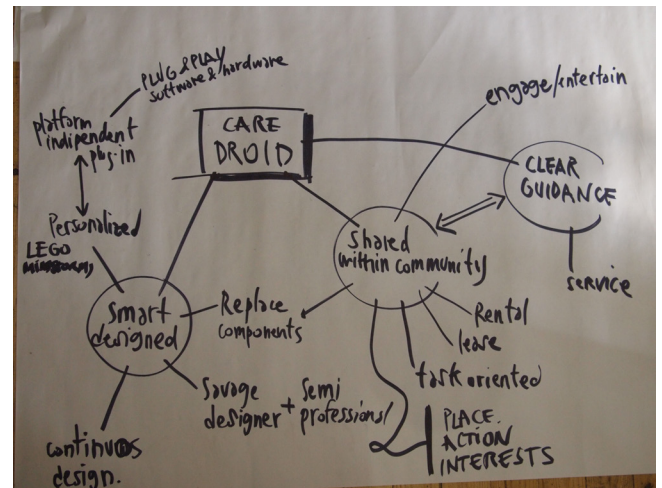

Who owns the power to design the process?

This workshop aimed to explore this area with examples from Japan and Europe/N-America, and discussions about how to understand these in a PSS context. Some questions that were asked in the workshop:

· What are the consequences for designing PSS?
· How do roles of designers, but also marketers and business strategists change?
· How can this 'loss of design control' be turned into a force for business and design?
· What makes fruitful combinations of the top down and bottom up approaches that are inevitably both present in such PSS?
· How can this be an instrument to grow many small to one-person businesses?
· Is a new creative industry emerging through such digital fabrication based PSS?

Savage designers

The day kicked of with an introduction by Daijiro Minzuno, design researcher at Keio University explaining his ideas of the 'Savage designer'. According to Minzuno, due to digital production technique, we see a rise of professional amateurs. With tools like: The Makerbot (www.thingiverse.com/MakerBot) - a website offering templates to design your own jewels, fashion and other products - it is becoming very easy to design or customize products. We have the possibility now to be locally self sufficient and globally connected. Also with the rise of Fablabs, that offer numerous possibilities for citizens to prototype their creative ideas, the amateur is empowered.

As for Daijiro we are entering a new stage in design where we not only design by people, or with people (co-design) but also for people (DIY culture).

What is the role of the designer in this rising DIY culture? According to Daijiro more and more designers will act as a meta-designer overlooking the process and offering or designing a structure for amateurs and professionals to work in. This metadesigner, titled by Daijro as a 'Savage designer', is more focusing on designing the system than the actual products. What does this position imply for the various CRISP projects? How can digital manufacturing play a role?

To discuss this we asked four participants to prepare a short presentation based on their research.

Case studies:

1. Rent agency for Care-Robots, presented by dr. Johan Hoorn (projectleader Selemca) & Josien van Dijkhuizen (Selemca)
http://crispplatform.nl/selemca/news/rent-bot-research-informed-design-pss
2. Emphatic adventures, presented by Heather Daam (DAE design researcher Gmotiv)
   http://www.designacademy.nl/Research/StrategicCreativity/People/HeatherDaam.aspx
3. Introduction on the project My own front door by Toon van Looy, project manager Van Morgen (PSS 101)
Housing corporation and city council will provide new services for people with special needs; create social environments
   Informal caregivers as semi professional.
4. I'm strong: A peer-to-peer talent development platform empowering young adults, introduced by design researcher Emilia Louisa Pucci (TU Delft)
PSS for Social Innovation, a workshop platform to empower young adults through the combined use of social media and Open Fabrication facilities.
   check the video TEDx Youth @ Delft in November 2013,
   https://www.youtube.com/watch?v=f5wJ9b5x8v8

After these introductions participants were asked to analyse the four case studies in groups of around five people with the opportunity to make use of the fablab facilities at Waag Society.

Community Champions

The Caredroid group discussed how the fablab could support the rental of caredroids. A caredroid could be personalized according to the need of the user and modules are available for the robot to build it into the robot needed (for gaming, socializing etc). A fabcafe could turn into a meeting, work, research and making centre for all stakeholders involved (scientist, engineers, amateurs, caretakers and givers). In the near future, a client with a special service question could potentially rent a care robot (caredroid) and customize it by adding his or her wanted service applications to the 'base robot' with the help of engineers. In this case scientist and researchers will overlook the process and use the creative explorations in their research. The centre would ideally be managed by a 'community champion' (meta designer) who not only connects customers with the right expertise but also builds bridges between the different professions and explores new business opportunities.

He or she is also the one who guides the process and reflects on it and potentially transforms the whole designed system from within.

To visualize the PSS behind this this idea, the group used lego blocks inscripted with names of stakeholders, applications, fields and expertise to build the requested caredroid. The blocks metaphorically present how in the near future the system is continuously redesigned by offering an open structure for various stakeholders to design within.

This system is guided and overlooked by the meta designer, with a large role for the 'amateur user', who plays a growing role in the design process.

Volunteers in the drivers seat

For the group My own front door the Savage designer is the driving force for the PSS. As a starting point the group based itself on initiatives of local volunteers and inhabitants of a village that guarantee or improve the well being in a specific community by offering meals, transport, practical services or social care. How can these local initiatives turn into a product service system? As for this group the inhabitants themselves, together with family friends and volunteers are in the drivers seat. They know how they would like to 'design' their future and what services they need for this. The investors and other stakeholders need to align with these 'drivers' and design with them. To turn this into a working system, a sustainable system needs to be designed; a system that is also available (shared with) for other communities or likewise initiatives. Here is where the Savage designer comes in. He/she is the one who manages the PSS. The group visualised their idea by designing little floating islands, connected by these savage designers.

Empathy shops

As for the group working on the empathic adventures, the starting point was to experience empathy using tools that physically give you the experiences of dealing with constraints. Therefore the group designed bondages and constraints for the upper arm that makes it impossible for the user to move in a natural way. The group also had a discussion on where these tools might be available and decided that a tailor shop would be ideal, especially if it would be equipped with 'fablab' machines to customize/ tailor your own empathy adventure. For this group the metadesigner is not only the one who overlooks this process but also maps the experiences of the users to design with that.

IK BEN STER(K) – A peer-to-peer talent development platform empowering young adults.

For this workshop, Emilia Louisa Pucci had two main questions:
- What kind of interplay between top-down and bottom-up approaches is best to allow the workshop platform to be sustained in the long term (a challenging topic within educational institutions)?
- How can a PSS to empower disadvantaged communities generate social impact while keeping within a viable business model, which can create value for all different stakeholders?

This group identified the savage designer as the underlying goal of the platform for empowerment. The disadvantaged students join the workshop platform, and by participating actively to the making activities proposed within a Fablab, are able to upgrade their status from problematic youth to empowered "semi-professionals."

The main problem identified during the workshop was yet another, and on a higher level: How can we make this platform self-sustaining, and implement it on the long-term so more savage designers can flourish? This consideration shifts the attention from the savage designer him or herself to the local network of stakeholders which can act (and should) as enablers to the creation of community of local savage designers.

In the creation and ignition of such PSS, the designer can be described as a metadesigner, who orchestrates a process of empowerment by covering different roles (excavator, facilitator, translator and pirate!) during the various phases of the project. At the beginning the group used the circular framework to create a stakeholder map of IK BEN STER(K), trying to identify what were the elements that possibly created the "barrier" against the project's successful implementation. The tool became interesting when the group members added an "invisible" layer, making an inventory of the stakeholders not immediately involved in the platform but connected to the environment and with a strong influence on it (police, local government, wide-scale social projects, care organisations etc.).

Storytelling was used during the second phase of the work-shop: the IK BEN STER(K) platform was explained step by step through a tangible storyboard, which Emilia had created in advance. The group was then invited to "tear it apart", in light of the new stakeholder relationships built together during the morning.

IK BEN STER(K) step-by-step process to empowerment was re-designed taking into account both the visible and invisible layers of stakeholders, and simplified in order to make the model leaner and easier to reproduce under different circumstances.

Rise of new design

The workshop concluded with short presentations of each group followed by drinks and energetic discussions on new design roles. It is clear that generative design is an ongoing process. Bottom up energy is merged and not overruled by topdown approaches. You not only design 'just' a product or service, but a whole ecosystem. As a result designers have to rethink their positions. "Empathic conversations are needed to support the rise of new design", concluded Daijiro Minzuno.