Changing landscape of user research

Sampsa Hyysalo
Associate Professor of Codesign
Department of Design
Aalto University, Finland
INUSE – User and Innovation Research

- Cross-Aalto University research group  WWW.INUSE.FI
- Role of users in socio-technical change
  - Co-design, user-centred design, user innovation research, S&TS
  - User and designer practices, user innovation communities, and pathways of user contributions
- Long-term evolution of
  - Organizational adoption and deployment of user research methods in
    ...health technology...social media...ERPs...physical goods...public organizations
  - User innovation and citizen information infrastructures in sustainable
    ...homes...maker spaces...arctic mobility
Themes

Era of advocacy of exotic users

The constants

Era of Normalcy of peer communities and user-clever companies

The obvious new implications
The advocacy of exotic users

a.k.a

1985-2010 research on users
Consumers’ active meaning making and domestication

Vs Cultural dupes to be investigated with surveys and statistics
Users’ interactions and contexts can and should be investigated and tested.

From vanguard and ‘unviable academic nagging’ to mainstream... Dominated by usability testing but complemented with cog sci, ethnography, interaction design...
Users can be brought in as useful design partners … with right means, skills and arrangements

Re-envoking the participatory design in product design
Users innovate in instruments ... new products... sports... games...heating systems...

From abnormal elites to normalcy in innovation; under certain conditions you should expect users to innovate for themselves
OSS / Open design / peer content creation;
Users self organize viable alternative technologies

So hippies and geeks can do it. Then what?
- Harness the hackers?
- Harness the lay people into content creation?
The constants 1: Need for user advocacy has not disappeared

• NOT lack of tools, methods, set-ups and principles for HCD; there are hundreds by now !!

... BUT

• The bulk of companies and public organizations ‘just got to usability’

• There are settings where users are structurally disenfranchised

• The concern with human centeredness of technology is still runs acute
Few IT Projects are Successful

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<thead>
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<tbody>
<tr>
<td>Successful</td>
<td>29%</td>
<td>35%</td>
<td>32%</td>
<td>37%</td>
<td>39%</td>
</tr>
<tr>
<td>Failed</td>
<td>18%</td>
<td>19%</td>
<td>24%</td>
<td>21%</td>
<td>18%</td>
</tr>
<tr>
<td>Challenged</td>
<td>53%</td>
<td>46%</td>
<td>44%</td>
<td>42%</td>
<td>43%</td>
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</table>

Project resolution results from CHAOS research for years 2004 to 2012
THE CHAOS MANIFESTO 2013
STANDISH GROUP
What Do We Know?

- 50% of features are hardly ever or never used.
- Small projects have 70% chance of success.
- It is not the technical factors.

### Factors of Success

<table>
<thead>
<tr>
<th>Factors of Success</th>
<th>Points</th>
</tr>
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<tbody>
<tr>
<td>Executive management support</td>
<td>20</td>
</tr>
<tr>
<td>User involvement</td>
<td>15</td>
</tr>
<tr>
<td>Optimization</td>
<td>15</td>
</tr>
<tr>
<td>Skilled resources</td>
<td>13</td>
</tr>
<tr>
<td>Project management expertise</td>
<td>12</td>
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<tr>
<td>Agile processes</td>
<td>10</td>
</tr>
<tr>
<td>Clear business objectives</td>
<td>6</td>
</tr>
<tr>
<td>Emotional maturity</td>
<td>5</td>
</tr>
<tr>
<td>Execution</td>
<td>3</td>
</tr>
<tr>
<td>Tools and infrastructure</td>
<td>1</td>
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</table>

THE CHAOS MANIFESTO 2013
100 YEARS AGO

Under the conditions of the one men shop, with the head of the business serving as designer, manufacturer, purchasing agent, salesman and service expert, an intimate understanding of customer tastes and desires was automatically assured.

MODERN INDUSTRY

By the very nature of things, the bigger an institution grows, the wider becomes the breach between the customer and those responsible for guiding the destiny of the institution.

With producer and consumer so widely separated it becomes increasingly difficult to keep the business sensitively attuned to the requirements of the customer.

GENERAL MOTORS

There is a need for some kind of a liaison which would serve as a substitute for the close personal contact which existed artificially in the days of the small shop.

CONSUMER RESEARCH
- aims to fill this need by providing an auxiliary and more direct line of communication between producer and consumer.
The constants 2: Renewal of novelty

- NOT lack of tools, methods, set-ups or principles for HCD … BUT
- New technology types call for somewhat different modes and methods user engagement
  - Eg. Digital services; Perpetual beta and minimum viable product: emphasis on design-in-use … how to do it worked out since “co-realization” in late 1990s to “aging together” in 2013
  - E.g. Design for services, emphasis on visualizing and users’ practices
- New tools citizens/users/consumers can use for themselves
Era of Normalcy of peer communities and user-clever companies
Peer communities
Digital connectivity among geographically dispersed peers

• Importance of digital innovation support, e.g.:
  – OSS
  – Open design
  – Innovation platforms and innovation brokering services
  – Open API’s
  – Crowdsourcing

• But not only that – the relevance to HCD runs deeper!
  – “User Run Internet forums” dedicated to products (e.g. Saab) and technologies (e.g. Heat-pumps)
  – Physical products, not digitally sharable


Heat pump proliferation: 600000 installations, 2–4 TW GSHP in every second new house. ASHPs retrofitted. Very little official support –bottom-up SME/peer process.
Peer knowledge infrastructure: Choice, comparison, monitoring, feedback, installation, use, troubleshooting...

Internet forums, especially
www.lampopumpput.info
www.maalampofoorumi.fi
www.pellettikeskustelu.fi
Supporting acquisitions, use and scaling of technology

Thread has been read for 61505 times (translated by the authors).
Scaling the Air-Source Heat Pump into a new house with no prior knowledge or experience of consumption is problematic. Below my own attempts at the subject matter.
http://lampopumput.info/foorumi/index.php/topic,1334.0.html

The problem of choosing the “right” pump came after this, once the “right” size has been defined.
http://lampopumput.info/foorumi/index.php/topic,986.0.html

Simultaneously while asking for offers on equipment, one has to, of course, plan where to locate the equipment and rack in the apartment.
http://lampopumput.info/foorumi/index.php/topic,1711.msg18519.html#msg18519

It took me 5 months to do the above mentioned, but I could not move into the new apartment before that anyway.
---
Row house 4 rooms+Kitchen+Sauna 96 m² Mitsubishi Electric FD35VABH Hyvinkää consumption monitoring, AHP scaling and AHP pictures.
User inventions in home heating in Finland

- 105 inventions in heat pumps
- 87 in wood pellet burning systems
- From system level designs to modifications
1-2 Installation location
3 Installation conditions
4-12 Melting mechanism of bottom cover
13-16 Melting mechanism of collector outdoor coil
17-20 Add-on for the outdoor unit
21-26 Channelling of the water out of the unit
27-30 Handling water outside of the unit
31 Refrigerant fluid
32-35 Hot water tank
36 Water circulation
37-51 Repurposing (air-to-air pump to air-to-water)
52 Repurposing of air-to-air to geothermal pump
53 Repurposing swimming pool HP to Air-to-water HP
54 Repurposing of internal unit
55 Utilization of cooled air from outdoor unit
56-60 Add-on for internal unit
61 Mechanical structure
62-65 Sensors in internal unit
66-75 Add-on for monitoring and controlling the overall system
76-79 System level design
The User Dominated Technology Era: dynamics of dispersed peer-innovation

Samps Hyysalo
Svetlana Usenyuk
INTERACTION ARENAS

late 1970s – early 1990s

late 1980s – until present

early 2000s – until present

Journals for DIYs

All-state and local karakat parades and racing contests

Specialized Internet forums
Peer communities capacitate users

As this happens with hard to transfer physical products
...Across the clunkiest digital sharing technology
...take it as sampling the other extreme from open design

Users productive capabilities has become a “fact of life”

This has not escaped producers either
Companies
Social Media Case Data

Social media changes the game for user involvement in service design. Active user communities, fast-paced iterations, development digital tools, peer production, and low-cost software distribution are well-known forces that bring radical change. The question is, how the user-centered participation and software development approaches keep up with the changes? Do the processes, methodologies, and tools have a new context?

In this thesis, the author details lessons for designers, managers, and researchers from an in-depth case study of a pioneering digital service, (Dublin) Hotel by Public Corporation. The analysis demonstrates how collaboration and feedback loops between developers and users change over time. The key messages, which concern strategic user involvement in the design process, include:

1. The role of developers and designers in the process.
2. The importance of feedback and continuous development.
3. The need for collaboration and communication.
4. The impact of user involvement on the final product.

The thesis concludes with recommendations for future research and practice in the field of user-centered design and social media.

Doctoral Thesis by Johnson, 2013
http://is.gd/johnson_2013_thesis

+ Johnson & Hyysalo 2012
Case Habbo

- Social game and online community for children and teenagers, launched in 2000
- A place to hangout with friends, meet new people, play, and have fun
- Johnson has followed Habbo’s development 2003–2010 in several research projects

Quick Habbo Facts (Feb 2012)
- 11 language versions
- Customers in over 150 countries
- Registered users: 250 000 000
- Unique visitors: > 10 000 000 / month
- Page impressions: 1 730 000 000 / month
- Age distribution: 90% between 13-18 years old
- Average visit: 41 minutes / session

www.sulake.com/habbo
Developers create furniture and floorplans.

Users make rooms from a floorplan and furniture.

Users

With a bar desk one can divide a room in parts, which allows for mazes.

Bar desks and doors also afford spaces, with access only for the few and selected.

Interaction arena

Forums
Users spread the word, mazes become a big thing.

Popular rooms
Users visit these to learn about the latest trends.

Catalogue
Users choose a floorplan and furniture from the catalogue.

Developers

Let’s do more furniture that can divide rooms.

Let’s make floorplans with pre-made sections.

Room divided into sections with bar desks

New floorplan with pre-made sections

New floorplan with “island” section
Strategies to Manage User Relationships: Social Media

<table>
<thead>
<tr>
<th>Concept</th>
<th>Beta</th>
<th>Expansion</th>
<th>Complexity</th>
<th>Competition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avatar activities, Developers as users, Informal evaluations, E-mail feedback, Volunteers</td>
<td>Volunteer forum, Weekly news-letters and polls, Fansites, Official Fanzine, Summer meetings, Sales statistics, Customer service</td>
<td>Market survey, Focus groups, Usability evaluation, Playability testing, CRM system, Release pilots</td>
<td>Online user panel, Global youth survey, User and group homepages, Tags</td>
<td>Data mining, Automated surveys, User experience testing, Personas</td>
</tr>
</tbody>
</table>

- Changes due to shifts in developer–user social distance
- Active users and emergent developer strategies
- Cumulative and strategic use of user research and user representations
**Knowledge about Users Cumulates: Method applicability based on "Project Phase" off the mark (not wrong per se)**

<table>
<thead>
<tr>
<th>Planning (Section 3)</th>
<th>Context of use (Section 4)</th>
<th>Requirements (Section 5)</th>
<th>Design (Section 6)</th>
<th>Evaluation (Section 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.3. Survey of existing users</td>
<td>5.3. User requirements interview</td>
<td>6.3. Design guidelines and standards</td>
<td>7.3. Heuristic or expert evaluation</td>
<td></td>
</tr>
<tr>
<td>4.4. Field study/user observation</td>
<td>5.4. Focus groups</td>
<td>6.4. Storyboarding</td>
<td>7.4. Controlled user testing</td>
<td></td>
</tr>
<tr>
<td>4.5. Diary keeping</td>
<td>5.5. Scenarios of use</td>
<td>6.5. Affinity diagram</td>
<td>7.5. Satisfaction questionnaires</td>
<td></td>
</tr>
<tr>
<td>5.7. Existing system/competitor analysis</td>
<td>5.8. Task/function mapping</td>
<td>6.7. Paper prototyping</td>
<td>7.7. Critical incidents</td>
<td></td>
</tr>
</tbody>
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Methods for Human-Centred Design (Maguire 2001)

The managed prosumer: The new knowledge infrastructures in the design of information infrastructures.
The business of being user: Formalization of “reference actor”

<table>
<thead>
<tr>
<th>Table 3. Typical Referencing Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Marketing</strong></td>
</tr>
<tr>
<td>• Write formal recommendations that assure prospective customers about the abilities, resources, commitment, etc., of vendors</td>
</tr>
<tr>
<td>• Present success stories at various industry forums (industry conferences, user group meetings, and the like)</td>
</tr>
<tr>
<td>• Provide feedback to the vendor about how its sales efforts are progressing and, importantly, how they could be improved</td>
</tr>
<tr>
<td><strong>Demonstrate the system</strong></td>
</tr>
<tr>
<td>• Demo newly installed software to prospective customers (often beyond what is mandated by the contract and despite vendor compensation not covering the full cost of demonstrations)</td>
</tr>
<tr>
<td>• Strive to become a flagship installation that would run the whole suite of vendors’ modules (despite itself not necessarily having use for all of them)</td>
</tr>
<tr>
<td><strong>Improve usability of parts of the system</strong></td>
</tr>
<tr>
<td>• Allow user-led incremental developments (bits of coding, small applications) to be inserted into the generic vendor product and sold elsewhere</td>
</tr>
<tr>
<td><strong>Provide evidence of system capacities</strong></td>
</tr>
<tr>
<td>• Help to construct benefits of functions for prospective customer organizations</td>
</tr>
<tr>
<td>• Educate (or lobby) the vendor about state of the market, where they are located, and how the package ought to be further developed to succeed in the market</td>
</tr>
</tbody>
</table>
Multiple benefits and beneficiaries

Table 4. The Roles of a Reference Actor

<table>
<thead>
<tr>
<th>Role</th>
<th>Definition</th>
<th>Rationale</th>
<th>Who Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create local comparability</td>
<td>Offer unique reassurance that the software package does work in a given context</td>
<td>Ensures continued take-up of vendor products</td>
<td>Potential adopter</td>
</tr>
<tr>
<td>Help construct generic comparability</td>
<td>Evidence general productivity and efficiencies gained to promote potential reach of enterprise systems</td>
<td>To establish not a local but generic package</td>
<td>Vendor</td>
</tr>
<tr>
<td>Build a collaboration</td>
<td>Value of having an effective partnership in designing and proliferating packages</td>
<td>Vendor or user alone cannot develop or commodify enterprise systems</td>
<td>Vendor, user</td>
</tr>
<tr>
<td>Establish proximity</td>
<td>Get close to the vendor to wield influence on product development strategies</td>
<td>To ensure specific needs can be catered for within and between domain competition; competence and prestige in relation to particular enterprise system</td>
<td>User, IT staff</td>
</tr>
<tr>
<td>Foster the packaged enterprise system community</td>
<td>Value of having a robust user community in a domain</td>
<td>Attracts and ensures vendor investment in a domain; helps guide development direction</td>
<td>Cooperating users in a domain</td>
</tr>
</tbody>
</table>
Hyysalo, S & Johnson, M

*Information Technology & People*

The User as Relational Entity:
Options that Deeper Insight into User Representations Opens for Human-Centered Design
From production of user insight
To positioning amidst user representations
The era of peer communities and user-clever companies

• In contrast to enlightened academic/practitioner advocacy of users the landscape is shaped by users and producers out there

• In contrast to side-lined users we find
  • Striving and growing peer communities
  • Business of being user
  • Increasing competition over users’ interest to participate

• In contrast to emancipatory, open and pluralist interaction between producer and user, we find:
  • Mixes between direct to indirect modes of knowing the user
  • Combinations of community engagement, tools and instruments
  • Occasioned close forms of engagement
  • Strategies for managing user relations over extended periods and across the product lifecycle; design, implementation, customer support, and further development.
The obvious

From development to deployment of user research

From recipes to
- Method and engagement mixes
- Practitioner skill-sets
- Organizational embedding and strategies

Extending engagement horizons

- From projects to working systems across generations
- From products to infrastructures
- …In relation to opening and closing occasions in technology and product lifecycles.
1990s HCD modus operandi

User concerns, desires and need → HCD deficit → Mainstream design practice

2015s HCD modus operandi?
Relevant research in the radically polarized landscape

HCD deficit → HCD renewal in new settings → Capacitated peers → User savvy companies
HCD has changed design landscape – what is needed to respond adequately to this changing landscape?

Supported by other developments that capacitate users