Making a difference – a survey of the usability profession in Sweden

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Organising and performing UCSD in practice

- Part of a bigger project on usability and user centred systems design in practice
- In cooperation with several public authorities, companies and user organisations
- Swedish Council for Working Life and Social Research (FAS)
What is software development like?

“...there is a prolonged period of confusion at the start followed by a frantic scramble to finish on time at the end”.


Problem with the usability profession

- The usability profession is perhaps the most significant impact the HCI community has had on practice.
- Lacking impact in the development process
- Lack of time, resources, knowledge, interest, etc.
- Unclear responsibilities
- Lack of consistency in naming
Background

- “...the software designer should be the champion of user experience...” (Kapor, 1991)

- “...all aspects of usability should be under one focus or one person...” (Gould, 1997)

- “...act as advocate for end users and other stakeholders in the system development enterprise and the development team.” (ISO/TR 18529)

  NOTE 1 The stakeholder’ advocate reminds the staff in the system development enterprise that the system is intended for use by real people and has to achieve quality in use. This role includes championing human-centered approaches, arranging for end-user involvement in conceptual studies, investigation and dissemination of context of use issues”. (ISO/TR 18529)

Previous studies...

- Sweden – Katzeff & Svärd (1995)
  - Low usability maturity
  - Sporadic and non-systematic usability activities
  - Subjective informal ways of gathering user knowledge
  - Usability mainly addressed in evaluation
  - No usability competence in the projects

  - Similar experiences
  - Usability was not a key factor
  - Usability professionals had a low profile
Now

- North America – Vredenburg et al. (2002)
  - UCD methods widely used
  - Gaining more impact in industry
- Sweden – ???

Method

- Electronic survey answered by 194 usability professionals in Sweden
- Deep interviews with usability designers at different organizations
  - one large governmental authority
  - one medium-sized UCD software consultancy company
Educational background

Main educational background (N=175)

Phases with user involvement

User involvement in SW development (N=157-179)
Why don’t we get involved with the programmers?

”Don't waste time with the geeks, unless you like hanging out with them. You'll never get their money. The proper self-assigned job of the authors ought to be to work out how HCI can make its deserved living from guaranteeing increased operational effectiveness, i.e. Value For Money - something the programmers don't give the project.”

Get involved with the “geeks”

- “UCD professionals who focus on doing “studies” as opposed to generating designs and products, will always be perceived as peripheral.” (Siegel & Dray, 2003).
- The usability professionals must have “skin in the game” (Cooper, 1999).
- The usability person must participate in all the user-centred activities, to prevent valuable information from being lost in the transitions between the activities, in accordance with the principle of integrated design (Gould et al., 1997).
What methods aspects do we see?

- The usability professionals favoured methods that directly involved users
  - Lo-fi prototyping, scenarios, think aloud, interviews, field studies
- They did not favour
  - Checklists, style guides, personas, questionnaires, benchmarking
- Do we really need more methods???
Selected results from survey

How do you get the support required?

- Changing basic values in the organisation
- Work to change the organisation’s overall strategies
- Educate!
Responsibility versus authority

- Good usability is thanks to the usability professionals
- Bad usability is everybody else’s fault
- Usability professionals must be given the authority to decide on matters affecting the usability
Conclusions from the survey

- Not lack of knowledge and methods (as it was 10 years ago)
- Lack of respect and support from management and other stakeholders
  - Increase knowledge among all stakeholders in the development process
  - Improve support through processes
  - Management awareness and strategic support
  - Emphasising the roles of the users and the buyers in requesting usability

Usability designer
Success factors and problems

Success factors

- UD participates on continuous basis (5 UDs, all PMs, User)
- Good teamwork – multidisciplinary team (4 UDs, 1 PM)
- User-centred design process (3 UDs, 1 PM)
- Users properly involved and field studies (3 UDs, 2 PMs)
- Time to do things properly (3 UDs, 2 PMs)
- Usability integrated into SW development process (3 UDs, 1 PM)
- That UD produces artefacts that are useful to SW developers (1 UD, 2 PMs)
- Sound technology (All PMs)

Obstacles/problems

- UD involved too late/not on continuous basis – cut out during construction (5 UDs, 1 PM)
- User participation - not getting access to users, wrong users, users involved on permanent basis etc (5 UDs, 2 PMs, User)
- Time constraints - deadlines rule over quality (5 UDs)
- The process (RUP) is architecture-centred - UDs have little control over process (3 UDs)
- Technical problems and constraints - including constraints imposed by legacy systems (3 UDs, 2 PMs)
- Not enough expertise in development platform (1 PM)

Success factors

- Prototypes facilitates communication with users and developers (3 UDs, User)
- Effective means for communication in particular with users, allowing users to express their needs in familiar terms (2 UDs, 1 PM, User)
- Success stories and reference cases to communicate impact of usability efforts (2 UDs)
- Other communications aspects included sharing offices with users and small development teams (incl splitting large projects into smaller units - people-wise and time-wise)

Obstacles/problems

- Usability fuzzy concept - people have preconceptions about it and about user involvement - must not take time or incur costs (4 UDs, 1 PM)
- Use cases problematic to use and have technical focus (2 UDs, User)
- Other communication aspects included failure to communicate to project what you intend to do, communication difficulties in large project
Success factors and problems

Success factors

- A user-centred attitude in organisation – particularly on management level (5 UDs)
- Support from project manager (5 UDs, 1 PM)
- Client aware of the importance of usability and/or buys into the user-centred process, allowing for user involvement (4 UDs, 2 PMs)
- Attitudes in general in project - the importance of being wanted and appreciated. One of them mentioned analysts in particular. (3 UDs)

Obstacles/problems

- Poor awareness of importance of usability in project. Usability seen as GUI matter only. UD not appreciated. PM and project have technical focus. (6 UDs)
- Poor awareness of importance of usability in organisation - middle management do not understand the concept. Problems with IT architects in particular (4 UDs, 1 PM)
- Client not aware of importance of usability (3 UDs, 1 PM)
- Everyone feels entitled to have opinions about interaction design (3 UDs)
- Usability one area among others contending for priority (2 UDs)

Attitudes

- Having skilled, experienced UD in organisation – a usability champion (5 UDs)
- UD role being well defined in project with well defined interfaces to other roles (2 UDs, 1 PM)
- Communication skills (see section on role and personal qualities)

Obstacles/problems

- UD role being ill defined – mixed up with the UI designer role in RUP – UD sometimes assigned UI designer role (4 UDs)
- UD not natural part of project (2 UDs)
- Inexperience – too few UDs in organisation – usability work tightly coupled to individuals (1 UD, 1 PM)
- The work situation of the UD – an ongoing struggle to justify their position in project – wears you down in the long run.

“...You can’t keep fighting an uphill fight for ever. It takes incredibly much energy and wears you down not being respected.”
Conclusions from the interviews

- The usability profession is not yet fully integrated in the development process
- Swedish usability professionals have succeeded in moving from analysis/evaluation to more design-oriented activities
- The interviewed usability designers spend their time in projects on a continuous basis
- The project manager relation is crucial for the outcome of their activities
Usability designer manifesto

The usability designer should

- be responsible for maintaining a user-centered approach and focus on usability (planning, performing, follow-up in close cooperation with users)
- take active part in design and development, and not become another project manager
- participate continuously in all phases, including implementation and deployment
- be a bank of knowledge of the project in accordance with the principle of integrated design (Gould et al., 1997).

(Göransson & Sandbäck, 1999)
Do we need numbers?

- Eighty percent of software life cycle costs occur after the product is released, in the maintenance phase. Of that work, 80% is due to unmet or unseen user requirements only 20% of this is due to bugs or reliability problems.
  

- After the New York Stock Exchange upgraded its core trading systems using user-centered design techniques, productivity rose dramatically and users’ error rates fell by a factor of 10 even though workloads more than doubled.
  

- Norwich Union, an insurance company in Australia, found that calls to its help desk reduced dramatically by two thirds after one of its core applications was improved using user-centered design techniques.
  

User involvement is central

In US 250 billion dollars is every year spent on 175 000 different IT-projects. 365 IT-companies with 8380 different IT-projects were analyzed in 1995.

- 31,1 % of the companies’ projects were cancelled.
- 52,7 % were performed with changed plans.
- 16,2 % were performed according to plan.

On average the costs for the changing plans increased with 189 %. 81 billion dollars is every year spent on projects that never leads to any results.

CHAOS report, Standish Group, 1995 (www.standishgroup.com)
Swedish Work Environment Law (Ch.2, §1)

Arbetsmiljön skall vara tillfredsställande med hänsyn till arbetets natur och den sociala och tekniska utvecklingen i samhället.

Arbetsförhållandena skall anpassas till människors olika förutsättningar i fysiskt och psykiskt avseende.

Arbetstagaren skall ges möjlighet att medverka i utformningen av sin egen arbetssituation samt i förändrings- och utvecklingsarbete som rör hans eget arbete.

Teknik, arbetsorganisation och arbetsinnehåll skall utformas så att arbetstagaren inte utsätts för fysiska eller psykiska belastningar som kan medföra ohälsa eller olycksfall. Därvid skall även löneformer och förläggning av arbetstider beaktas.

Starkt styrt eller bundet arbete skall undvikas eller begränsas.

Det skall eftersträvas att arbetet ger möjlighet till variation, social kontakt och samarbete samt sammanhang mellan enskildas arbetssuppgifter.

Det skall vidare eftersträvas att arbetsförhållandena ger möjlighet till personlig och yrkesmässig utveckling liksom till självbestämmande och yrkesmässigt ansvar.

The worker should be given the possibility to participate in the design of his/her own work situation and in changes and development that concerns the work.

Obstacles to strategic usability

- Resource constraints (28.6 %)
- Resistance to UCD/usability (26.0 %)
- Lack of understanding/knowledge about what usability is (17.3 %)
- Better ways to communicate impact of work and results (13.3 %)
- Lack of trained usability/HCI engineers (6.1 %)
- Lack of early involvement (5.1 %)
- No economic need – customers not asking for usability (3.6 %)

Obstacles to strategic UCSD

- We believe that all of these factors are related to a lack of knowledge on how to apply UCSD methods and their potential benefits.
- System development projects, in general, don’t have the explicit goal to develop usable systems.
- They have the goal to deliver a “running and working” system.
- Existing tools does not give any support for performing UCSD.
- Not everybody has the goal of developing usable systems.

Crosby’s quality maturity grid

- **Ignorance** – “We don’t have problems with usability.”
- **Uncertainty** – “We don’t know why we have problems with usability.”
- **Awakening** – “Is it absolutely necessary to always have problems with usability?”
- **Enlightenment** – “Through management commitment and improvement of human-centered processes we are identifying and resolving our problems.”
- **Wisdom** – “Usability defect prevention is a routine part of our operation.”
- **Certainty** – “We know why we do not have problems with usability.”
Strategic UCSD in organizations

Institutionalizing

Operationalizing

Establishing

Promoting

Promoting UCSD

- Focus on influencing people.
- Gaining initial support for usability.
- Single usability lead.
- Introduce usability methods and techniques.
- Cost justification – “number crunching”.
- Demonstrate what usability is all about – demonstrate value.
- Make usability visible.
- Introduce UCSD, nice and easy. Be careful not to overwhelm the receiver.
- Get into project plans is a key success factor.

Inspired by Deborah Mayhew, Eric Shaffer and Usability Maturity Model.
Establishing UCSD

- Focus is on influencing **projects / products**.
- Define UCSD roles and define the UCSD organizational structure – staffing up.
  - Centralized vs. decentralized organization
- Impact projects.
- Usability as requirements.
- Style Guide and some user-centered activities (user analysis, usability testing) are accepted and treated as “standards”. Demands management support.
- Planning and operating strategically for long term success.
- Get access to users.

Operationalizing UCSD

- Focus is on influencing **process**.
- Change from projects to process.
- Requirements with usability focus.
- Develop UCSD into the “standard operation procedure” (SOP).
- UCSD well integrated into development process.
Institutionalizing UCSD

- Focus is on influencing organizations.
- Educate...
- UCSD is spread among all developers / stakeholders.
- Get all stakeholders involved – usability and UCSD everywhere. A change in paradigm.
- Full acceptance and conformance of the principles for UCSD.

Strategic UCSD in organizations – conclusion

- Promoting
  - Focus is on influencing people.
- Establishing
  - Focus is on influencing projects / products.
- Operationalizing
  - Focus is on influencing process.
- Institutionalizing
  - Focus is on influencing organizations.
How the usability profession should develop...?

- Thorough integration of the usability profession in the development process
- More concrete contribution to the development (design before documentation)
- Increased knowledge and acceptance among everybody involved in the development
- Clearer labelling of the usability role and perhaps certification of the profession
- Greater need for designers and developers than psychologists and ethnographers
- Need for more usability designers in practical development (~10% of dev. staff acc. Nielsen)

Further reading

- The lonesome cowboy – A study of the Usability Designer role in systems development.

- Usability as a profession – current practices and future development (prel. Title).
Thank You!

- “I know that I have to produce a design solution till Thursday. You can’t wait for inspiration – we can’t cancel the only meeting we have [with the users]. That wouldn’t do.”

- “You can’t have a bad week.”

(quotes from interviews with Usability Designers)