Why Did HCI Go CSCW?

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What is CSCW?
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• No commonly agreed definition
  • Can’t even agree on the acronym: Computer Supported Cooperative Work or Computer Supported Collaborative Work? [300k vs 38k on google]

• Basically, an interest in groups working together rather than individual users

• First workshop in ’84, first open conference in ’86, biannual ACM CSCW conference since ’86

• From the beginning an interdisciplinary field
  • Drawing from computer science, management information systems, information science, psychology, sociology, and anthropology (and design!)
Definitions

• Grudin ‘88:
  • ‘how collaborative activities and their coordination can be supported by means of computer systems’
Definitions

- Greenberg, ’91:
  - ‘The study and theory of how people work together, and how the computer and related technologies affect group behavior’
Definitions

• Suchman ‘89:
  • ‘the design of computer-based technologies with explicit concern for the socially organized practices of their intended users’
Definitions

- Bannon & Schmidt, ’89:
  - an endeavor to understand the nature and requirements of cooperative work with the objective of designing computer-based technologies for cooperative work settings
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But is CSCW a Discipline?

• Bannon, ‘88:
  - CSCW is an umbrella term allowing people from a variety of disciplines to come together and discuss issues without any common ground as to the concept of CSCW, other than the very loose idea that it was somehow about the use of computers to support activities of people working together

• Rob Kling, ?:
  - CSCW is an ‘arena’ where different groups vie for the attention of participants

• Hughes et al., ’91:
  - More than a discipline, CSCW is a paradigm shift in the way we think of designing computer support systems
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Working Definition

• In CSCW, equal emphasis is put on
  • a) the distinctive qualities of co-operative work processes,
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• A) emphasizes the deep understanding that is needed of co-operative work practices and arrangements

• B) emphasizes the design issue of how technology could be involved in supporting and developing these co-operative work practices
Why did CSCW Emerge?
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• Often, new research areas emerge as a response to dissatisfaction with the techniques, methods, theories, and results of currently existing fields
  • For more about disciplinary ‘paradigm shifts’, see Kuhn ’62

• The rise of CSCW could be seen as a response to a number of crises in the field of Human-Computer Interaction (HCI)

• In the late 80s and early 90s, mainstream HCI research was heavily inspired by cognitive science
  • ...it still is, but that’s another lecture
in Figure 7.3. This figure may also be related to Jones’s (1970) view of the designer as an input–output system (Figure 4.2). Legs, anyone?

**Figure 7.3** · Card et al’s (1983; 1986) conceptualization of a computer user; the Model Human Processor
Where numerous case studies of actual design projects suggest that neither do designers work in the way suggested by the design methodology movement, nor would it be possible for them to work in the prescribed manner (Alexander, 1971; Broadbent, 1973; Ehn, 1988; Gedenryd, 1998; Lawson, 1980). The most important problem seems to be the focus on process over people, product, and content. As design decisions seem often to be based on the content of a specific design situation, as suggested by the pragmatic account, a process-based approach which by nature and necessity must be negligent of content would seem of only limited value (Dorst & Dijkhuis, 1995). In addition, some have argued that no matter what methodological tools are used, «the result of any process will never be better than the people who participate in the process […] the skills and abilities of the designer determine the quality of the final [product]» (Löwgren & Stolterman, 1999, p. 14).

Noticeable, both Jones (1970) and Alexander (1971), the founders of the design methodology movement, acknowledge problems with the design methods. While still claiming the need for such methods, Jones notes that there «is not much evidence that they have been used with success, even by their inventors.» (Jones, 1970, p. 27) To contrast the problems of the structured...
Why did CSCW Emerge? (I)

• At the time, ‘cognitivistic’ HCI faced a number of problems (or anomalies, in Kuhnian terms):
  • HCI often sought to replace human skills with ‘intelligent systems’, rather than supporting and enabling users by designing better tools
  • Most real advances in HCI came from design groups with little or no connection what so ever to the theories and empirical methods touted by cognitive science
Why did CSCW Emerge? (II)

• At the time, ‘cognitivistic’ HCI faced a number of problems (or anomalies, in Kuhnian terms):
  • Small, controlled lab studies didn’t really scale well, of limited use in practical settings; no field studies, downplayed the social nature of learning; meaning, motivation
  • There’s an underlying, somewhat patronizing and de-humanizing view of the user (naïve users, idiot-proof systems, the human processor, etc.) in late 80s HCI
  • Strong focus on getting the design right (usability issues), not on getting the right design [cf. Buxton ’07]
Towards CSCW

- HCI’s emphasis was (is?) on understanding the individual user’s model of the task, the actual behavior of individual users, their errors, learning curves, etc.

- ‘85-’92ish HCI:
  - The majority of studies focused on an individual user working with a single computer system
  - Adequate for certain purposes, not other
  - The everyday needs of people to communicate with others both around and through the computer system received very little attention
Towards CSCW: CMC

• Late 80s, evaluations and studies of use of computer applications that supported Computer Mediated Communication (CMC) between people
  • Electronic messaging, BBS, etc.
  • It became viable to regard computer systems as media rather than as tools
  • Social dimensions could be examined tools and techniques already available in the social and organizational sciences
    • For studying the effects of other media, e.g. print, radio, television, etc.
From CMC to CSCW

- From the point of view of HCI, CMC studies...
  - Helped focus attention on how the computer can support communication and collaborate activities between people
  - Helped shift attention away from *getting the design right* to *getting the right design*
    - Turns out even very poorly designed interfaces could be mastered by a variety of people, provided they could see certain needs being solved by the medium
  - Brought a wider variety of research methods into play than were traditional in HCI work
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• Yet, CMC...
  • Was ‘technologically deterministic’, i.e. did not consider social forces at play, particular use contexts
  • Focused on evaluation, not design or re-design (reactive)
The Emergence of CSCW

• When the unit of activity being investigated shifts....
  • The object of study is not a single user but rather support for cooperative work arrangements
The Emergence of CSCW

- When the unit of activity being investigated shifts:
  - The object of study is not a single user but rather support for cooperative work arrangements
- ...it's natural to search for new conceptual and methodological frameworks
  - The role of artifacts in human cognition (Norman, '91)
  - Distributed cognition (Hutchins, '90)
  - The ‘situatedness’ of cognition, situated action (Lave, '88; Suchman, '89)
  - Activity theory (Kuutti, '91)
  - Phenomenology (Winograd & Flores, '86)
  - Participatory design and work-related issues (Ehn, '88)
  - Ethnography, anthropology, ethnomethodology (Hughes et al, '95; Suchman, '89)
The Second Wave

• Some call CSCW HCI’s ‘second wave’:
  • Focus on groups rather than individuals
  • From general to particular (specific workplaces)
  • Focus on collaboration and on enabling users through technology rather than individual user performance
  • New theory focused on work settings and interaction within well-established communities of practice
    • Situated action, distributed cognition and activity theory were important sources of theoretical reflection
    • ‘New’ concepts like context came into focus of analysis and design
  • Favored proactive, qualitative methods to be able to study use as it happens
    • Fieldwork rather than lab studies
    • Participatory design workshops, prototyping, contextual inquiries
    • Rigid guidelines, formal methods, and systematic testing were largely abandoned
The Third Wave?

• Some think of contemporary HCI as entering a ‘third wave’ (e.g. Bödker, ’06)
  - Contemporary use contexts and applications have been broadened, combined, and often intermixed
  - Computers and other devices are increasingly being used in both the private and public spheres, blending the two
  - Technology spreads from the workplace to our homes and everyday lives and culture, which brings an interest in issues of culture, emotion, and experience
  - Methodologically moving away from users towards a more exploratory approach where design seeks inspiration rather than justification in use
Summary

• Early CSCW extended the boundaries of traditional HCI by...
  • Focusing on ensembles of people working together through and with computers
  • Emphasizing the need for field studies
  • Opening up a wider variety of conceptual frameworks
  • Stressing how the technology must fit to the requirements of the work situation, not just to the requirements of ‘the human processor’
Summary

• In HCI, the CSCW movement thus became one of the first attempts to fuse...
  • The insights of the social sciences
  • The technical know-how of system developers
  • The work experience of practitioners (the end users)
  • A strong user-centered focus, previously unheard of in HCI
  • Ethical, cultural, and social issues; issues of labor
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• CSCW took an important stance in user-centered design
  • People are smart, not dumb
  • If users or groups behave in a way that seems irrational, it’s not because they are stupid, but rather because you as a researcher/designer has not fully understood the situation
Thanks!

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