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# User Interface History

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**Abstract**

User Interfaces have been around as long as computers have existed, even well before the field of Human-Computer Interaction was established. Over the years, some papers on the history of Human-Computer Interaction and User Interfaces have appeared, primarily focusing on the graphical interface era and early visionaries such as Bush, Engelbart and Kay. With the User Interface being a decisive factor in the proliferation of computers in society and since it has become a cultural phenomenon, it is time to paint a more comprehensive picture of its history. This SIG will investigate the possibilities of launching a concerted effort towards creating a History of User Interfaces.

**Keywords**

User Interface History, HCI History, Interaction Technology History.

**ACM Classification Keywords**

H 5.2 User Interfaces; K.2 History of Computing – Software.

**Introduction**

In the last decades, historians of technology have written extensively about the history of computers and computing [2, 3, 23]. These works complement the writings of pioneers of computing such as Herbert Goldstine [6] and Maurice Wilkes [22]. Over the years,

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some papers on the history of Human-Computer Interaction have appeared [7, 8, 12, 13, 15, 16, 19, 20] and as well as a book on the history of the neighbouring field Human Factors and Ergonomics [18]. Little work has been published on the history of User Interfaces *at large* with one notable exception: the history of the Graphical User Interface, including the efforts at Xerox PARC in the 1970s and 1980s and some forerunners. Authors include not only HCI community members [5], historians of technology [21], and technology writers [9], but also researchers in Media and Cultural Studies [10, 17] as the Graphical User Interface has become deeply embedded in our culture. These approaches primarily focus on the graphical interface era with its predecessors and early visionaries such as Vannevar Bush, Doug Engelbart, Ivan Sutherland, Ted Nelson, and Alan Kay. Notwithstanding the immense influence of these pioneers, it is time to paint a broader picture of the History of the User Interface.

There are other reasons for embarking on the study of the History of User Interfaces.

- The general level of knowledge about the history of user interfaces seems limited. Indeed, an informal survey amongst students at the IT University of Copenhagen re. the history of computers and interfaces suggests that their history unanimously starts with the pc and the graphical user interface [14].
- The meaning of the term user interface has changed considerably as seen in a quote from a recent PhD thesis: “We become part of the interface or rather we bring the interface with us everywhere, we create practices around the interface” [4].

- Some design issues in today’s “baby” interfaces in information appliances resemble those of the past with small, character-based screens. It seems obvious to utilize earlier experiences.
- The development of interfaces seems to be considered as an unbroken sequence of improvements. This is a dubious position as illustrated by Donald Norman: “HTML has set back the user interface by a decade. HTML is a batch processing mechanism, poorly suited for interaction.” [1].

Before we embark further, let us clarify what we mean by History of User Interfaces as opposed to History of Human-Computer Interaction. We see User interfaces as tangible artefacts and conceptual entities embedded in the everyday world whereas Human-Computer Interaction is an academic discipline. To illustrate this point, the papers by Myers [20] and Grudin [8] are typical representatives of the former and latter areas, respectively. In addition, user interfaces (by then denoted “I/O devices”) were around long before the academic field of Human-Computer Interaction emerged.

### Approach

In approaching a History of User Interfaces, the CHI community may benefit from the theories, methods, and practices of historians of technology and computing, such as the pros and cons of internalism and externalism, the role of sources, and source criticism [11]. It is also important to note that historians of technology do not tell stories of technology, but about society based on the role of technology. There is a trend in contemporary history towards telling not only the story of the kings, but also the story of the peasants: history “from below” as

opposed to history “from above” that has dominated User Interface History so far. Consequently, we may ask questions like the following:

- What influence can be traced from I/O devices used in analog computers?
- How was the user interface conceived and designed before the term “user interface” was coined and conceptualized?
- What was the organisational and social context of interface designers developing administrative systems on an IBM 360 in the 1970s?
- What influence did the IBM 360/370 3270 display have for interfaces of the 1970s and 1980s and for the emerging concept of the user interface?
- What sparked the emergence of User Interface Agents such as Microsoft’s Bob and Paper Clip and what role did they play?
- How have Web-interfaces been influenced by earlier types of interfaces and how have they developed in their own right?

### Targeted Audience

The SIG welcomes anyone with an interest in the History of User Interfaces and Human-Computer Interaction, including, but not limited to:

- pioneers and innovators that may provide insights on visions and driving forces behind their work,
- interface developers that may report on the context of their work,
- HCI scholars with a historical bent, and
- historians of computing that may provide historical theory and methodology.

### Agenda for the SIG

The SIG will be scheduled in four parts:

1. Welcome by the organizers (10 minutes).
2. A participants’ round – possibly in groups depending on the number of participants (30 minutes), focusing on:
  - Why am I here?
  - My own experience.
  - My own possible contribution.
  - My ideas for further efforts.
3. Discussion (30 minutes).
4. Wrap-up and next steps (20 minutes).

### Expected Outcome

Firstly, the SIG will create a network of motivated and informed CHI community members. Secondly, the SIG will provide an initial idea of the scope of efforts towards creating a History of User Interfaces. Thirdly, the SIG will sketch a number of avenues to pursue:

- a special journal issue or a book.
- a blog or mailing list.
- a workshop or a small conference.
- a plan for a SIG at CHI 2009.

Fourthly, the SIG will create synergy and collaboration between the CHI community and historians of technology, for example with the SIG on computer history of the Society of the History of Technology (SHOT: [www.historyoftechnology.org](http://www.historyoftechnology.org)).

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