# Text Entry on Mobile Systems: Directions for the Future

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**KEYWORDS**
Text entry, mobile computing, wireless computing, language modeling, international interfaces

**INTRODUCTION**
Mobile text input is hampered by the absence of a traditional keyboard. This, combined with demand for rapid and effortless writing methods for mobile devices, presents a special challenge. Various systems seeking to meet this challenge have recently emerged. Often, however, rigorous evaluation is lacking, and, so, there is little objective data to inform design. The goal of this workshop is to bring together experts on text entry methods, language prediction and modeling, and natural language input to discuss the state of the art and future directions in mobile text entry.

**ISSUES IN MOBILE TEXT ENTRY**
In a global context, text entry is far from simple. Thousands of languages and hundreds of writing systems make creating a unified system for text entry a daunting task. The same is true for modeling human text processing and writing. A global market for electronic devices means manufacturers of text processing systems must acknoweldge and meet the needs of a diversity user community.

More generally, the emergence of small mobile (viz. wirless) computing devices is potentially an important event in the history of writing. Previous revolutions include the arrival of media such as papyrus, parchment, or paper; and the invention of the printing press, typewriter, or word processor. Although each occurred at a different time in history, they greatly altered the way text was created, processed, and reproduced. The evolution from typewriters to computers, for example, was also significant; however, the change was mainly to render input more automatic, without changing the interface (i.e., the keyboard).

Now, it appears change is driven not by improvements in writing technology but by miniaturization. It seems technology is taking a step back by re-introducing pens and the ambiguity of handwriting. Is this is a step back or a return to the right direction? This is an open question in the field of writing and computerized text entry.

Given the discussion above and the media focus on mobile computing, the importance and timeliness of mobile computing does not need further emphasis: television and newspapers have succeeded in this. Researchers in mobile text entry are scattered around the world. *CHI 2001* is a special opportunity to bring these people together to exchange views on the future of mobile text.

**GOALS OF THE WORKSHOP**
This workshop will examine existing text input methods and requirements, and future, potential, techniques. Our goal is to identify and clarify current needs and to articulate possibilities for the future. A successful outcome of the workshop will be a research agenda — a checklist of the research, technology, and interaction techniques that merit further exploration. The workshop will broaden participants' view of mobile text entry. Familiarity with writing systems and global cultures together with a vision of the continued historical development of writing systems will aid in choosing research questions with high impact. The research agenda will be available as a poster in *CHI 2001* and later in an article in *SIGCHI Bulletin*.

In view of this, the following are candidate topics.

**Devices, techniques, and integration**: strengths and weaknesses of devices and methods; device-independent methods; integration with other aspects of the user interface

**Methodology**: speed, accuracy, and other performance metrics; strengths and weaknesses of measurements; methodologies for evaluating text entry techniques

**Skill acquisition:** novice vs. expert performance; skill acquisition; learning curves; immediate/walk-up usability

**Language modelling and optimization**: language-based optimization; word prediction; word completion

**Social impact of text messaging**: age and gender effects; social settings; group dynamics

**Internationalization**: multilingual requirements in alphabetic, phonetic, and ideographic text entry systems

**International interfaces**: support for different languages, dialects, ideographic input

Published in *Extended Abstracts of CHI 2001*, p. 495.