

Multi-Touch Table as Conventional Input Device

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Motivation

In order to improve the functionality of multi-touch devices, the possibility of using them as conventional input devices for computers needs to be reviewed. The idea is, to get rid of many different peripherals (e.g. keyboard, mouse, multi-touch pad) by using a single multi-touch display. Furthermore the display can be used as an additional monitor to show for example toolbars, which can be directly manipulated through multi-touch gestures.

Concept

In our prototype we used a selfmade large scale multi-touch table as input device and a windows-based computer with a large TV as main screen. The program provides an adaptive keyboard, which shows shortcut keys for different applications (e.g. *Inkscape*), and a multi-touch pad as well as the option to drag&drop standard Windows widgets onto the multi-touch table, which can be controlled by direct touch input. A user study was conducted to test the current system and to get information about the further approach to this concept. The user study showed, that most users like the adaptive keyboard and think that it is most useful for non-frequently used shortcuts.



Adaptive Keyboard: The onscreen keyboard shows shortcut icons for *Inkscape* with/without ctrl being pressed



Advantages

- **Changeability:** you can simply change the shown virtual input devices, without having to rearrange your workspace. Therefore you can switch easily between different tasks, always using the appropriate input device.
- **Adaptivity:** the virtual input devices can adapt to the current language, program, etc. For example, the virtual keyboard can show the correct keyboard layout for different languages, or provide the user with additional information (e.g. when pressing the ctrl key in a program, the shortcuts of functions are shown on the keys).
- **Scalability:** the virtual input devices can be rescaled to meet each user's demands.

Outlook

- Adaptive Keyboard:**
 - Shortcut icons for more programs
 - More flexible (e.g. natural keyboard)
 - Compare different shortcut layouts
- Multi-Touch Input:**
 - Find fitting gestures for standard programs
- Concept:**
 - Evaluate system in a long term study

Video: <http://www.youtube.com/watch?v=-UQv1aRzjNc>