

## Onscreen Keyboards & Justifying Fleksy

**Typing on touch screen devices is broken.** Before netbooks and tablets were conceived, users skipped from comfortable and spacious desktop and laptop computers to smartphones; portable devices featuring touchscreens primarily designed to consume content on the go, rather than create it. To compose text, the virtual touch keyboard was introduced. An analysis can be done to justify the reasoning behind this choice, but it is safe to assume two main arguments: The QWERTY is the predominant text input paradigm and the screen is large enough to fit one.

Manufacturers and users sacrificed typing for the benefit of consuming media. The fact remains that 13 years after cheap phones and T9 made texting the primary form of communication and entertainment for millions of cellphone users, composing text on contemporary mobile devices is a far worse user experience.

The frustrations of typing are commonly acknowledged. Manufacturers research and implement technologies to improve the experience and to a significant extent, they succeed. Text input is a fundamental aspect of a communications device, making the success of the smartphone infinitely tied to the competence of its keyboard. The market deemed the first iterations of the software keyboard good enough and the smartphone became a product category with explosive sales.

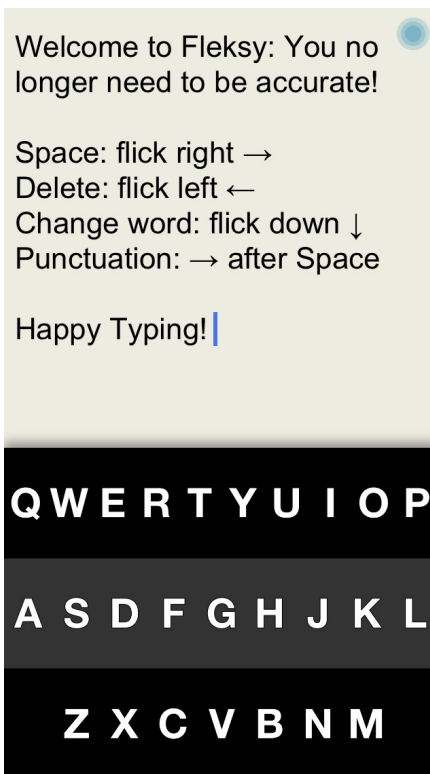
However, six years after the smartphone was introduced to the mainstream market, the onscreen keyboards remain counter-intuitive. Anchored to a skeuomorphic approach, users are required to interact with a layout that resembles their laptop, complete with letters, function keys on drawn buttons on an interface that fundamentally abandoned them.

To improve the typing experience, most approaches revolve around suggesting the most likely result of the combination of buttons pressed. Others, abandon the typical tap typing paradigm of entering text, introducing gesture-based input; a design choice that complements touchscreens but with a steep learning curve and an immature implementation that falls back on tap typing for less frequent actions, requiring from the user to master two systems and alternate between them. Attempting to engage with any, the user has to learn each system's quirks and limitations, and result in executing only permitted actions.

As a result, the user is forced to the role of the administrator in addition to that of the composer, maintaining the system's performance at all times. With aggressive and unreliable system suggestions and the omnipresent lack of tactile feedback, the user's focus is required on the screen at all times. The power of the QWERTY is undisputed and all modern solutions attempt to recreate the familiar, tried and proven desktop experience. Regardless of the continuous advancements in computational power, prediction engines as well as user interfaces, this has not been the case yet.

Most typing systems require precise input from the user as a core element of the typing experience. Though auto-correct systems have evolved to allow the user to be slightly inaccurate at times, the premise has been that a user has to try and hit a button for each letter of a word.

[Fleksy](#) is a departure from standard touchscreen input.



To enter a word, tap where you think each letter is. When done, flick right.

With Fleksy you don't have to hit each key exactly. Fleksy cares more about the relative position of where your fingers touch. From that it figures out what words have roughly the same relative input pattern. It picks the most likely word and fills it in.

As a result, Fleksy can detect an input even when users miss every single key on the keyboard. In fact, the system is powerful enough to be useful even when the user is not typing within the keyboard area at all.

With the goal to enable typing without looking, Fleksy has been designed from the ground up as a universal technology. Since its public release, Fleksy has reached tens of thousands of blind and visually impaired(VI) users.

Apart from the focus on the very powerful algorithms supporting the system, radical steps have been taken into designing an interface that maximizes and complements the potential of the technology. Looking at the layout, the QWERTY is the singular underlined element, while the function keys, the space bar included, glaringly missing.

That is intentional as steps have been taken to keep Fleksy as lean as possible, reducing the chance of destructive actions. All functions are performed by gestures on the screen, which, in turn, don't require precision at any stage.

Also there are no visible keys/buttons, there are no visual boundaries between letters.

Keys have no meaning for Fleksy or blind users, just their approximate and relative location. **The keyboard acts as a layout map, rather than a button input device.** Remembering that touchscreens feature no buttons, abandoning keys is an example of such thought process and consistent with Fleksy's approach.

Contesting this argument, one may invoke the relation between the user's sense of accuracy and the success rate of buttons pressed. Indeed, an intimidated, insecure user may interfere with the system's results. Given the users' familiarity with the QWERTY and a reliable system, Fleksy's word based input renders feedback on a letter level irrelevant.

A layout without keys offers users a new perspective: you are now typing

words, free of accuracy. It is only fitting letters are free from keys as well (smile)

After typing, all the design choices are gradually justified, adding more value.

Fleksy changes and chugs a lot of standard keyboard functionality but the fact remains; Users must make this departure with it as soon as "Fleksy is ready". Abandoning the consistent feedback of touch-typing letters compares to a leap of faith. The lack of the spacebar may be justified on paper, but muscle memory is sometimes more powerful. Even if flicking is a less bound, a more satisfying trigger, it is a challenge and reward to make the user flick right for the first time.