



The NeoKeys™ Interface

www.neokeys.com

Richness + Simplicity

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US Pat. 6,703,963. Australia Pat 2002326972.
Other US and foreign patents pending.



The Goal

- Richness + Simplicity = A deeper, more compelling user experience that is also fast and easy, with no learning curve.



Definitions

- Richness = Enabling a more compelling user experience across all features
- Simplicity = Making devices easy to use across all features



Richness



The Importance of Richness to People

- Mobile devices are above all about interaction. Richness increases the desire to interact more and deeper:
 - social interaction,
 - web interaction,
 - game, feature, application interaction,
 - etc.
- Richness improves the interest level and depth of commitment to the interaction the device and its applications and features offer
- Interaction is why people went to mobile devices. Rich interaction is what they want, and expect.



The Importance of Richness to Device Manufacturers, Carriers and Developers

- Mobile devices sales increase with new and exciting physical features (flip phone, color LCD, camera-in-phone, thin phones, ... NeoKeys)
- The huge investments in next generation wireless network infrastructure will only pay off if wireless service providers convince users to go far beyond voice calls and short text messages into a full range of communications, computing and entertainment services
- Richer, more compelling applications lead to increased time spent, use and loyalty



Principles behind Richness

1. Commands, Text, Numbers
2. Reserve Upper Screen for High Value Content
3. Open Architecture
4. Ally hardware and software
5. Map to user's lifestyles



Commands, Text, Numbers

- “Command” entry drives more applications than text or number entry – fully enabled by Neokeys
 - Any interface that does not address command entry for each separate application fails
 - Enriches every application – the keypad is no longer a static, pre-labeled artifact, but becomes instead a customized, dynamic and integral part of each application
- “Text” in full, in any language
 - Asian characters, accented letters, punctuation, symbols, emoticons and other aspects of full text communication are now possible – better even than on a full PC keyboard.
 - NeoKeys offers text expression/interaction on an entirely unprecedented basis



Upper Screen

- The upper screen of mobile devices is rapidly becoming one of the most viewed screens minute-by-minute in people's lifestyles
- Use it properly:
 - Because the upper screen is small, it is critical not to encumber the screen with unnecessary and low-value content, such as pull-down menus and screen-based command/text/emoticon/symbol entry.
 - The NeoKeys interface moves the user interface system to the keypad, reserving the upper screen of mobile devices for high value media.



Open Architecture

- **Media/Content Developers**
 - Any developer can enrich their content by programming not only the upper screen, but also the displays for the keys.
 - This substantially enhances the depth of the user experience.
 - The NeoKeys interface becomes an integral component of each application.
- **Easy to develop for and modify existing apps (SDK)**
 - We will provide a simple and clear set of software guidelines for developers to optimize their applications using the NeoKeys interface
- **In sum: Mobile Web 2.0 – enabled**



Ally Hardware and Software

- The highest value on many fronts, including for the end-user, is achieved when hardware and software are closely and integrally aligned – designed in from the start
 - Eg, the clickwheel/iPod/itunes alignment
- The NeoKeys interface does this on an unprecedented basis
 - Tight integration of physical keys and software-driven displays integrated with the keys, in an open architecture context.



Map to Lifestyles

- NeoKeys maps directly to the way people use their technology - personalized interaction by the user:
 - of communications with other people
 - of entertainment
 - of computing
- One interface – all devices (Phone, TV, PC/Laptop)



Simplicity



The Importance of Simplicity to People

- People hate hard to use devices and applications
 - It hurts their pride and productivity.
 - They stop doing anything except what is easy to learn and use.
 - Corollary: People want mobile devices, services and applications that are easy to use.
- Small, feature-rich devices present a huge and ever-increasing usability issue
 - The old interfaces paradigms do not work.



The Importance of Simplicity to Device Manufacturers, Carriers and Developers

- Increased market share
- Increased revenue
- Increased loyalty and reputation
- Lower costs of support



Principles Behind Simplicity

1. Commands, Text, Numbers (Extensibility)
2. What you see is what you need (WYSIWYN)
3. A single, predictable pattern of use - always
4. Ergonomics



Commands, Text and Numbers

(The 3 keys to the next generation physical user interface)

- **Enable “Command” entry on the Keypad**
 - Critical because most features and applications require the user to enter commands (as opposed to text or numbers)
 - No more upper screen menu/select interface limitations
- **Enable a new level of “Text” communication**
 - In full (letters - lower case, caps, accented -, characters, punctuation, caps, symbols, numbers, emoticons) – one per key, directly on the keypad, faster entry with fewer errors with no learning curve
 - In any language (most people don’t speak or write English, their written languages should be respected and completely available) – Asian characters, accented letters, directly on keypad
 - Switch languages, in full, on the fly
 - Language parsing in base 12 or less
- **Enable numeric entry of any kind**
 - Telephone and calculator format – at choice of user



WYSIWYN

- Visual cues driven by what the user has selected to do
- Show only what the user needs – starting with a default most-needed subset
- Visual cues on the keypad, not on the upper screen
- Get rid of keys pre-labeled with alphanumeric
- Instant sophisticated use by everyone, with no need for manuals or help desks
- In sum: Put the user in charge



A Single Pattern of Use - Always

- The pattern of NeoKeys' "mode switching" is the same for every feature and application
 - Use it in once, and know how it works for everything, now or in the future
- Unlimited number of "keyset groups"
 - High level feature key
 - Keys dedicated to command/text/number entry
 - Keys dedicated to selecting levels within the high level feature
- Distinct sets of keys have dedicated, consistent and predictable roles

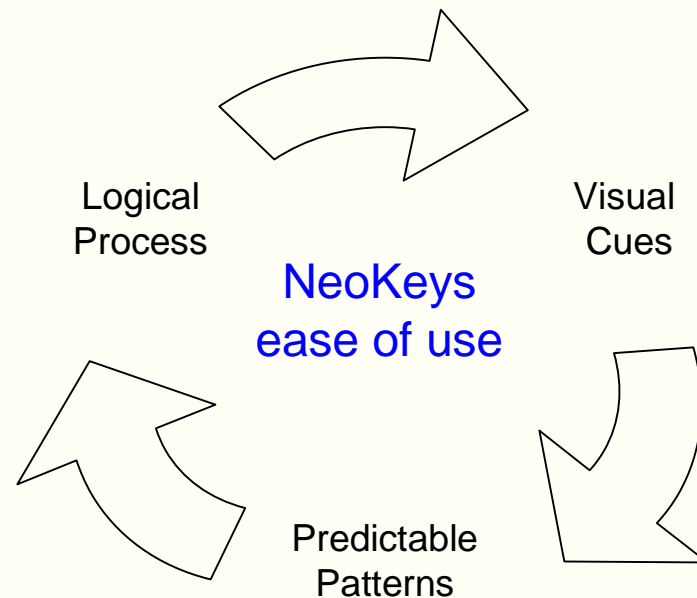


Ergonomics

- **Physical keys**
 - Provide optimal touch use – touch-typing with eyes on the upper screen
- **Integral displays**
 - Provide a flexible and dynamic context-driven interface
- **Layout**
 - Easy reach of all keys by thumb or one-handed, all finger use
 - Small number of large keys
- **Senses**
 - Different shapes enable touch orientation
 - Optional: Different colors reinforce roles of keys
 - Optional: Sounds reinforce key pattern usage and touch-typing
- **Avoid touchscreen and flat keypads**
 - These force the user to stop and look to hit correct keys
- **Avoid multiplicity of tiny keys** allocated to one function



Simplicity Principles, Restated



-
- 85% of learning is done visually. Visuals = easy.
 - Consistent and predictable patterns of usage = easy.
 - Logical connection between task and means to perform task = easy.



Usability Studies

- The NeoKeys interface is learned on first use to high degree of proficiency
 - with essentially no training across all demographic groups
 - faster, easier, fewer errors
- See our white paper on Usability Studies



What else?



Demonstrably Easier and Richer

- The NeoKeys Interface clearly and demonstrably delivers richness + simplicity
- See for yourself:
 - Visit www.neokeys.com
 - Ask us for an in-person demonstration
 - Download and test our symbol and Asian character capability from www.yuvee.com



Will People Switch?

(or, can you change behaviour?)

- Yes, many examples, iPod clickwheel, TV remotes, Game controls, mouse
- The key is to align better with people's lifestyle use of their technology
 - In the NeoKeys Interface context, this means enabling much richer (and, at the same time, much easier) social, entertainment and computing interaction.



Innovation

- Richness and simplicity require innovation in mobile devices
- Innovation costs more initially and does not come with built-in market data. That makes it hard to implement from an engineering and a marketing department standpoint
- Therefore, innovation requires senior management leadership to drive it into products and services



Out with the Old and Bad

- Get over the past!
 - Upper screen menu and icon systems do not work on small-screen devices.
 - Touchscreens offer immense flexibility, but are very user unfriendly for mobile devices.
 - The user has to stop, stare at the interface and press precisely for every use. That's the opposite of mobile freedom.
 - Pre-labeled keys for a specific function are inherently misleading, frustrating and hard-to-use.



Who is the NeoKeys Interface for?

- The NeoKeys interface is for companies whose products require fast and easy input of a combination of commands, text (in any language) and numbers
 - mobile phones
 - tv remotes
 - PC and laptop full-keyboard replacement remotes
- Contact us – (847) 380-2092



Richness + Simplicity

NeoKeys.