large as the entire front face of the device. This attacks one of the other limitations of portable electronic devices, which is that screen size is generally less than the size needed for easy and convenient viewing, compared with a non-portable device.

[0089] With the screen filling one side of the device, and the keys easily fitting on the other, the inevitable compromises that must be made in designing portable devices is changed. Up to now, the fundamental compromise has been between a device design that is small enough to be easily carried, but large enough to fit the display screen plus keypad onto the face of the device. With this aspect of the invention, space for the keypad is no longer a factor because there is plenty of space for the limited number of keys needed, especially when those keys are placed on the opposite side of the device as the display screen. The fundamental design compromise now becomes one of only portability versus screen size, instead of portability versus screen size plus keyboard size.

[0090] More specifically, **FIG. 8** shows the handheld PC/organizer/Web tool side of the device. The character display window **40** is used just as described earlier, with the display window on the screen and the selection keys on the back (**FIG. 9**). This layout is designed to maximize display screen space, which is a primary limitation of current handheld PC/organizers. The device is intentionally shaped so that it can be gripped on the short ends in the palm of the user's hands. The two buttons on each end are positioned so that they can be reached with the thumbs. With the device held between the user's palms, the user's four fingers would fall onto the selection buttons on the backside, as shown in **FIG. 9**. The character display window is shown in the lower left hand corner of **FIG. 8**.

[0091] **FIG. 9** shows the selection key side of the device. The selection buttons **200** are available for typing whether using the device from the large screen size, or from the side having the selection keys on it. A small display **90** is also on the selection key side so that conventional cell phone functionality can be included on the device. With display **90**, the user can view a telephone number being dialed, exactly as they would use a cell phone today. A speaker **92** and mouthpiece **94** would be included in each end of this device. This device would be held upright, like a cell phone is typically used.

[0092] Referring specifically to **FIG. 10**, there is displayed an alternative embodiment for use in a cellular telephone that does not include a touch sensitive screen. In this embodiment, a cellular phone **1010**, such as a Motorola i700 Plus™, is used to enter information for storage in the device (e.g., telephone numbers and names), or for transmission (e.g., text messaging). In one embodiment, 3×4 telephone keypad **1012** may be used to activate the keyboard application as described above. As a result display **1014** is shown with a display window **1018** having a plurality of character segments $\mathbf{100}_1$-$\mathbf{100}_{10}$ therein. Subsequently, the keypad buttons may be used by a user to select the displayed characters as well as to move through the character groups displayed. The following table represents a proposed keypad button—character segment association, although alternatives are indeed contemplated herein:

Keypad Button	Ref. Numeral	Char Segment
1	1020	100_1
2	1022	100_{10}
3	1024	100_9
6	1026	100_8
9	1028	100_7
#	1030	100_6
0	1032	100_5
*	1034	100_4
7	1036	100_3
4	1038	100_2

[0093] In order or display alternative character groups, a user would be able to select the remaining keys such as numeric keypad buttons 5 (**1050**) or 8 (**1052**), or even left-right rocker button **1054** to "navigate" between the character groups being display in window **1018**. Upon selection of the appropriate character group, the user may then select the keypad button associated with a character in order to enter that character.

[0094] It will be further appreciated that the application of this user interface organization can be applied to various electronic control applications where the number of commands or execution functions exceeds the number of keys that conveniently fit within the physical dimensions of the device. Applications include (1) various editing and navigational functions or commands in word processing applications, including but not limited to delete, backspace, page-up, page-down, end, home, cut, copy, paste, etc., may be included as one or more special characters such as the space bar, as specific characters in segments, or in other fixed or combined selection buttons or action keys in various aspects of the present invention (2) navigational and command functions in stereo, TV, VCR, or other portable home appliance controllers, including but not limited to volume, channel selection, bass, treble, frequency band, etc (3) navigational and command functions in portable industrial equipment controller applications such as remote PID controllers, electrical and gas meter-readers, or other portable devices for controlling industrial equipment, particularly hand-carried controllers used to communicated with remote field-installed equipment.

[0095] As will be appreciated from the various embodiments and methods described herein, the use, methods and operation of the various embodiments of the present invention are directed to a user interface that overcomes the restrictions associated with a limited display area and capitalizes on the intuition of the user to interact with the programmable device to capture text and data. In doing so it is assumed that a limited number of user defined keys or buttons are available to provide navigation between, and within, the character groups. It is further anticipated that the user will readily develop a virtual image of the character groups position to each other. To be more specific, if we were to place the default character group in the center of our mind we would then know that the other two groups of characters are directly above and below, with the symbols group to the right and the punctuation group to the left. In this manner we can assign keys and/or actions to move about in the x and y direction on a cognitively rationalized basis. Additional keys, if available, could be mapped to character