

[0045] Collocate. FIG. 2 shows the use of spatial arrangement of the flexible display(s) for organizing or rearranging information on said display(s). In one embodiment, collocating multiple flexible displays allows image contents to be automatically spread or enlarged across multiple flexible displays that are collocated.

[0046] Collate. FIG. 3 shows how users may stack flexible displays, organizing said displays in piles on a desk. Such physical organization is reflected in the digital world by semantically associating or otherwise relating computer content of the displays, be it files, web-based or other information, located in a database, on a server, file system or the like, for example, by sorting such computer content according to some property of the physical organization of the displays.

[0047] Flip or Turn. FIG. 4 shows how users may flip or turn the flexible display by folding it over its x or y axis, thus revealing the other side of the display. Flipping or turning the flexible display around an axis may reveal information that is stored contiguously to the information displayed on the edge of the screen. Note that this flipping or turning gesture is distinct from that of rotating a rigid display surface, in that the folds that occur in the display in the process of turning or flipping the display around its axes are used in detecting said turn or flip. In single page documents, a flip gesture around the x axis may, in a non-limiting example, scroll the associated page content in the direction opposite to that of the gesture. In this case, the flexible display is flipped around the x axis, such that the bottom of the display is lifted up, then folded over to the top. Here, the associated graphical content scrolls down, thus revealing content below what is currently displayed on the display. The opposite gesture, lifting the top of the display, then folding it over to the bottom of the display, causes content to scroll up, revealing information above what is currently displayed. In the embodiment of multi-page documents, flipping gestures around the x-axis may be used by the application to navigate to the prior or next page of said document, pending the directionality of the gesture. In the embodiment of a web browser, said gesture may be used to navigate to the previous or next page of the browsing history, pending the directionality of the gesture.

[0048] In another embodiment, the flexible display is flipped around the y axis, such that the right hand side of the display is folded up, then over to the left. This may cause content to scroll to the right, revealing information to the right of what is currently on display. The opposite gesture, folding the left side of the display up then over to the right, may cause content to scroll to the left, revealing information to the left of what is currently on display. In the embodiment of multi-page documents, flipping gestures around the y-axis may be used by the application to navigate to the prior or next page of said document, pending the directionality of the gesture. In the embodiment of a web browser, said gesture may be used to navigate to the previous or next page of the browsing history, pending the directionality of the gesture.

[0049] Fold. Note that wherever the term "Fold" is used it can be substituted for the term "Bend" and vice versa, wherein folding is interpreted to typically be limited to a horizontal or vertical axes of the surface. Where folding a flexible display around either or both its horizontal or vertical axis, either in sequence or simultaneously, serves as

a means of input to the software that alters the image content of the document, or affects associated computing functionality (see FIG. 4). As a non-limiting example, this may cause objects displayed in the document to be moved to the center of gravity of the fold, or sorted according to a property displayed in the center of gravity of the fold. As another non-limiting example, following the gravity path of the fold that would exist if water was run through that fold, it may cause objects to be moved from one flexible display to a second flexible display placed underneath it.

[0050] Half fold. Where partly folding a flexible display on one side or corner of the Document causes a scroll, or the next or previous page in the associated file content to be displayed (FIG. 4).

[0051] Semi-permanent fold. Where the act of folding a flexible display around either its horizontal or vertical axis, or both, in such way that it remains in a semi-permanent folded state after release, serves as input to a computing system. In a non-limiting example, folding causes any contents associated with flexible displays to be digitally archived. In another non-limiting example, the unfolding of the flexible display causes any contents associated with said flexible display to be un-archived and displayed on said flexible display. In another non-limiting example, said flexible display would reduce its power consumption upon a semi-permanent fold, increasing power consumption upon unfold (FIG. 4).

[0052] Roll. Where the act of changing the shape of a flexible display such that said shape transitions from planar to cylindrical or vice versa serves as input to a computing system. In a non-limiting example, this causes any contents associated with the flexible display to be digitally archived upon a transition from planar to cylindrical shape (rolling up), and to be un-archived and displayed onto said flexible display upon a transition from cylindrical to planar shape (unrolling). In another non-limiting example, rolling up a display causes it to turn off, while unrolling a display causes it to turn on, or display content (FIG. 5).

[0053] Bend. Where bending a flexible display around any axes serves as input to a computing system. Bend may produce some visible or invisible fold line (2) that may be used to select information on said display, for example, to determine a column of data properties in a spreadsheet that should be used for sorting. In another non-limiting example, a bending action causes graphical information to be transformed such that it follows the curvature of the flexible display, either in two or three dimensions. The release of a bending action causes the contents associated with the flexible display to be returned to its original shape. Alternatively, deformations obtained through bending may become permanent upon release of the bending action. (See FIG. 6).

[0054] Rub. The rubbing gesture allows users to transfer content between two or more flexible displays, or between a flexible display and a computing peripheral (see FIG. 7). The rubbing gesture is detected by measuring back and forth motion of the hand on the display, typically horizontally. This gesture is typically interpreted such that information from the top display is transferred, that is either copied or moved, to the display(s) or peripheral(s) directly beneath it. However, if the top display is not associated with any content (i.e., is empty) it becomes the destination and the