

wrapped with printer-ready instructions and/or reformatted and then mixed with printer-ready instructions.

[0039] It is to be appreciated that a cellular telephone print item may be identified in different manners. Thus, in one example, a cellular telephone adaptive protocol print method includes, presenting, via a user interface, one or more candidate cellular telephone print items to be processed and receiving, via the user interface, an indication that identifies one or more cellular telephone print items to process. By way of illustration, a cellular telephone user may have received a set of MMS messages, a set of SMS messages, and a set of emails. If the cellular telephone is camera-enabled, the user may also have acquired a set of images, still and/or video. Furthermore, the cellular telephone may have come pre-configured with a set of items (e.g., images, text, audio). Thus, the user may have a varied set of items, some of which may be printable in whole or in part. Thus, a cellular telephone protocol adaptive printing method can examine the varied set of items and display to the user, via the user interface, which items are printable and, in one example, which of the elements in a print item are printable. For example, an MMS message may be presented as being printable, with the printable portions and non-printable portions of the MMS message identified by, for example, visual distinctions.

[0040] FIG. 3 illustrates a portion 242 of an example cellular telephone protocol adaptive print method. At 310, a determination is made concerning whether the decision about which print job candidate elements are to be processed will involve a user interaction via a user interface. If the determination at 310 is Yes, then at 320 print job candidate elements are presented to the user and at 330 an indication is received concerning which print job candidate elements the user desires to have processed into a print job.

[0041] If the determination at 310 is No, then at 340 the print job candidate elements are compared to a pre-configured set of elements that can include, but is not limited to, a file extension, a candidate element file content, a candidate element file type, a candidate element file format, a candidate element object type, a candidate element message type, a candidate element encoding, a candidate element content, and a candidate element format to a set of one or more types, extensions, contents, and formats supported by the print data transmission protocol. Based on the comparison at 340, a print job candidate element(s) is chosen to be processed at 350. Thus, in one example, the portion 242 includes determining which print job candidate elements are to be processed based, at least in part, on a content type supported by the print data transmission protocol. In another example, the portion 242 includes comparing one or more print job candidate elements to a preconfigured set of element types chosen to be printed and, based on the comparison, selecting one or more print job candidate elements to process. Thus, print job candidate elements to process into print job elements can be filtered out of the set of available print job candidate elements. For example, a pre-determined, configurable filter that identifies desired printable elements based on attributes like type, size, time stamp, owner, originator, and so on may be employed to select the printable elements that are to be processed.

[0042] FIG. 4 illustrates a portion 400 of a wireless protocol adaptive printing method that concerns processing

print job elements into a print job according to a print data transmission protocol and an information dense content arranger layout. Thus, in one example, processing print job elements into a print job includes selecting a configurable information dense content arranger into which the print job elements can be arranged and arranging the print job elements in the configurable information dense content arranger. In one example, the information dense content arranger is designed to interact with the print data transmission protocol. In another example, the configurable information dense content arranger is an XHTML template. In yet another example, the configurable information dense content arranger is an XHTML-Print template. It is to be appreciated that references to XHTML are intended to include versions of XHTML like XHTML-Print.

[0043] At 410, a determination is made concerning whether the decision about which content arranger, if any, will be employed in processing the print job elements into a print job will involve the user via a user interface. If the determination at 410 is Yes, then the portion 400 may include, at 420, presenting to a user, via a user interface, candidate arrangers and, at 430, receiving, via the user interface, an indication that identifies the arranger into which the print job element(s) is to be arranged. Thus, at 440, an arranger can be selected based on the indication received at 430 from the user via the user interface.

[0044] If the determination at 410 is No, then the portion 400 may include, at 450, comparing the print job elements to a set of stored print job element patterns, and, at 460 selecting the arranger based on the comparing of 450. By way of illustration, the set of stored print job elements may include various content layouts designed for various amounts and/or mixes of content in a print job. For example, a first print job that has several small images each captioned with a short text message may lead to selecting an arranger that facilitates viewing multiple images and the associated text on a single page. A second print job that has one large image and a large amount of text to flow around the image may lead to selecting an arranger that facilitates centering the image on a printed page and having the text flow around the image in a pleasing way. A third print job that has several large images that are time stamped may lead to selecting an arranger that facilitates displaying each large image on a separate page with its associated text time stamp. The third print job may benefit from, for example, a first page treatment, a last page treatment, and a header/footer being attached. Thus, in one example, the arranger facilitates producing these effects. Additionally, other arrangers may facilitate implementing print functionalities including, but not limited to, positioning text and/or images, centering text and/or images, rotating text and/or images, scaling text and/or images, and combining multiple images and/or texts on a printed page. Furthermore, other arrangers may facilitate implementing print functionality to account for multiple page prints. For example, multiple page printing may involve automatically handling white space, arranging content into rows and/or columns, numbering pages, generating intelligent page breaks that enhance readability, and the like. Once again, arranger selection can enhance the print experience when the arranger is chosen in light of the print data transmission protocol. Thus, in one example, an XHTML template may be selected based on its functionality when transmitted over a Bluetooth wireless network using Bluetooth BPP. Thus, printable elements from an MMS message