

# A Collaborative Touch-Based Newspaper Editor Concept

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## ABSTRACT

The digital workflow of the conception of a newspaper or a magazine involves several tasks. While professional solutions like QuarkXpress or Adobe InDesign combined with InCopy only offer the possibility for one person to modify a document at the same time, we have developed a concept in form of a prototype that will help journalists and the editorial staff to work collaboratively together using a touch-based table with a new approach of pagination and text editing through multitouch gestures.

**ACM Classification:** H5.2 [Information interfaces and presentation]: User Interfaces. - Graphical user interfaces.

**General terms:** Design, Human Factors

**Keywords:** journalism, collaborative environment, multitouch, web convergence, newspaper

## INTRODUCTION

Preparing and conceiving a newspaper is a collaborative task that requires several professions working together in the newsroom from the design director to the editorial staff.

Currently, each task is realized within a very linear workflow and relies on prepared database information based on text management systems like NewsEdit Pro or in smaller structures a Wiki and collaborative online text editing tools like the online service Google Docs.

When all articles can be accessed, the journalists meet in the newsroom to discuss the content and the media that should be inserted in the newspaper's layout.

Unfortunately after the meeting, once a decision was taken, each task (layout or text editing) is done separately: the collaborative working atmosphere that emerged during the meeting is lost as each of the previously mentioned tasks will be realized using heterogeneous software and methods.

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## USER INTERFACE

The following section will discuss the several parts of the touch-based graphical user interface (UI)

### Information representation

After analyzing methodologies and behaviors adopted by the journalists [1] during the design and editing phase of a newspaper in several major newsrooms, we came to the conclusion that a collaborative-based approach of the pagination and layout process with a touch-based system would really help journalists to better achieve their editing workflow.

The first aspect of our concept is that we want to allow the editorial staff to be able to browse really quickly through several heterogeneous information and media sources.

To realize this, we unify and merge the prepared content coming from the text management database system with the text briefs based on paid news feeds like those provided by Reuters, AFP or dpa. This operation is also done in the case of multimedia content provided by Magnum Photos, Corbis or Flickr via their respective APIs.



Figure 1: User interface

Once the user starts our system, a blank newspaper sheet with predefined zones (called drop tiles) is displayed. The person in charge of the layout and design of the newspaper can predefine the tiles. Now, thanks to multitouch, several users can simultaneously select the media or texts and position them via drag'n'drop onto the virtual newspaper sheet (see Figure 1).

### Graphical user interface design

To provide a quick and easy access to the previously described media sources, we placed media panels on the left and the right side of the UI that will allow the users to select their information sources based on the media type. As represented in Figure 1 the left part represents the text briefs or snippets. The text sources can be Web-based or coming from an internal database and can be freely selected by deictic gesture of the users. On the right side, we provide the users with the same possibilities, but for image or video content.

Another interesting feature of the UI is to provide the users with a direct visual feedback concerning copyrighted materials, which are marked and highlighted during the editing process. Depending on the copyrights of, e.g. the Common Creatives, media modifications, like cropping an image (see Tile 2 of Figure 2) are explicitly forbidden. If unexpected events occur during the editorial and conception phase that could also influence the content of currently edited articles, the UI offers a ticker mechanism for live information out of connected predefined RSS Feeds, tweets of Twitter or news provided by PubSubHubbub<sup>1</sup> mechanism. Incoming information is displayed in a special yellow note placed on the bottom of the UI. This allows the journalists to quickly react and readapt the currently edited content.

Once all elements are integrated into the layout and the pagination is done, the newspaper can be directly exported to different output formats, such as ePub, HTML or PDF over a contextual menu.

### GESTURE INTERACTIONS

From the analysis in newsrooms we have identified several set of touch gestures that would suit the workflow in order to give our system a full editing power. In fact, based on the touch gestures' efforts described in [3], we have focused on five major gestures that can be used for editing and media placement tasks.

In this collaborative scenario, these gestures can be either realized by one person or by several persons at the same time.

Figure 2 summarizes the five gesture types. The resize gesture (1) enables to scale fonts and readjust text passages in order to fit in the tiles described previously. The cropping gesture (2) needs two persons, while the first one determines the zone to be cropped, the second one will extract the new picture from the cropped region. If text has to be edited or if sentences have to be replaced with others, users can take advantage of the collaborative editing gesture (3): while the first person is selecting a part of a text the other user can drag out a part of the text and replace it with other text stubs.

The grasp gesture (5) will allow the users to delete an article or media content from the virtual sheet. Several persons can simultaneously drag'n'drop media content into the previously defined empty rectangular tiles (4). The dropped media content is displayed fully fitted in the tile. This gesture also allows deleting an article or picture already placed in a tile.

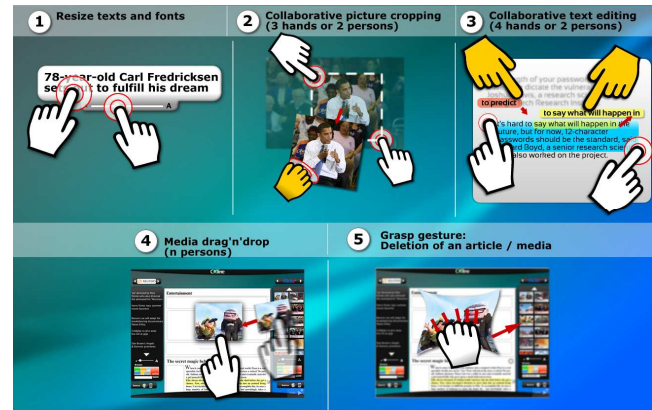


Figure 2: List of conceptual gestures

At this point, it's important to mention that the number of combinable gestures during the layout phase depends on the size of the touch table. In order to avoid editing conflicts, there must be coordination between users.

### FUTURE WORK

As an extension to our approach, we provide a graphical user interface to allow an intuitive possibility to edit articles or information managed by content management systems. In a concrete scenario each user holds his own tablet PC with touch functionality like an iPad or WeTab.

Each tablet displays the shared UI of the newsroom's touch-based table. In order to allow a collaborative editing, all interactions that occur on different tablets will be merged and reflected on the table's UI.

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<sup>1</sup> <http://pubsubhubbub.googlecode.com> (2010)