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Multimedia and Interactive Components in Converged Media

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Multimedia and Interactive Components in Converged Media

by

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A thesis submitted in partial fulfillment
of the requirements for the degree of
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MULTIMEDIA AND INTERACTIVE COMPONENTS
IN CONVERGED MEDIA

Amanda L. Welch

ABSTRACT

A content analysis of news Web sites reveals how many multimedia and interactive components both converged and non-converged media organizations include on their Web presence. The sample included four news Web sites considered to be highly converged with their print and broadcast counterparts (TBO.com, chicagotribune.com, DallasNews.com, and Azcentral.com), one newspaper Web site not affiliated with a broadcast media organization (buffalonews.com), and one broadcast news Web site not affiliated with a print news organization (kfmb.com). A multimedia and interactivity score was given to each Web site based on the quantity of these components each site used. Both kfmb.com (a non-converged organization) and chicagotribune.com (a highly converged news organization) offered significantly more multimedia components than the other four organizations, but only chicagotribune.com provided a statistically significant number of interactivity components on its Web site. The results of this study revealed that among the four converged

news organizations (azcentral.com, dallasnews.com, chicagotribune.com, and tbo.com), the only organization demonstrating the characteristics of a converged news organization was chicagotribune.com.

CHAPTER 1: INTRODUCTION

New media technology has brought about an observable change in the way news organizations disseminate information. The most obvious example of such change is the integration of the Internet with more traditional media, such as print and broadcast. In fact, "media giants, once competitors, are working together, promoting each other, and very often sharing resources" in a movement referred to as convergence (Flanagan, 2003, p. 1).

While research suggests that new media technologies will not replace existing media (Bromley and Bowles, 1995), the uses and gratifications theory of mass communication posits that people will strategically use the media that meets their specific needs (Kim and Weaver, 2002; Stafford and Stafford, 2001). The Internet embodies the media richness of broadcast and the control and detail of print. As a result, the Internet meets the needs of both audiences while satisfying other needs, such as the need for interactivity or more information. The Internet is likely to attract more news consumers than print and broadcast media when online news providers utilize these interactive and multimedia components.

These elements take several forms in news Web sites. Schultz (1999) identified several interactive components that news

organizations incorporate onto their Web sites: e-mail links to editors and reporters, live chats, online polls and surveys, and online forums. He also described additional interactive options that some news organizations have used, such as interactive quizzes, digital postcards, and virtual tours. Media richness is enhanced through use of video, audio, and animation (Coyle and Thorson, 2001). With these unique features, the Internet as a news platform has the potential to flourish if converged news organizations share their resources and incorporate these components in their online presence.

News organizations differ in how they incorporate these components on their Web sites, and many still view the Web as simply an extension of traditional print news (Neuberger, Tonnemacher, Biebl, and Duck, 1998). For this reason, many are not taking advantage of the benefits the Web offers, and they will likely lose consumers as a result. Converged news organizations attempt to move beyond the standard Internet placeholder by sharing their print and broadcast resources (Killebrew, in press).

As the rules established by the Federal Communications Commission (FCC) regarding media ownership become more lenient, the possibility for cross-ownership of multiple media platforms becomes more and more feasible. In 1975, the FCC banned media companies from owning both a daily newspaper and full-service

broadcast station when the broadcast station's service area overlapped the newspaper's distribution area (Federal Communications Commission, n.d.). However, the FCC revised these limits in June of 2003, allowing cross-ownership of television and print in markets with between four and eight television stations. In markets with fewer than four television stations, cross-ownership was banned.

With this new ruling, several media giants, including Media General, Gannett, and the Tribune Company, have expanded their media empire through the purchase of broadcast and print media outlets around the country—not just in one market. For instance, Gannett Company's purchase of Central Newspapers Inc. in Phoenix brought about the converged media operation of *The Arizona Republic* and KPNX television (Fitzgerald and Moses, 2003). With multiple news organizations under the control of one owner, it only makes sense to streamline operations so that resources can be shared—not only in news distribution but also in advertising.

Several news organizations have emerged as convergence leaders in recent years, taking great strides to build a strong relationship between media platforms. In Tampa, Media General invested \$40 million dollars to create a state-of-the-art news center where *The Tampa Tribune*, WFLA, and TBO.com can pool their resources to provide the most comprehensive stories (Colon, 2000).

As of 2002, media conglomerate Belo had acquired four daily newspapers, 19 local television stations, and 34 Web sites in three regional areas of the United States—Texas, the Pacific Northwest, and the Southwest. "It's a strategy the company hopes will lead to strong news-gathering operations, increased revenues and market share, as well as more cost-efficiencies" (Murphy, 2002, para. 19). However, many news organizations resist the move to a converged marketplace. Such a practice requires cooperation from newsroom staff who are often hesitant to change (Flanagan, 2003).

Yet with true convergence, news organizations will benefit tremendously from a more dynamic Web site where consumers seeking multimedia and interactive components can have their needs met. With these platforms at their disposal, news organizations can integrate streaming audio and video to the static but detailed written word.

This study examines several Web sites in converged news centers to determine the extent to which converged and non-converged news organizations include interactive and multimedia components on their Web sites. Through content analyses of several Web sites, this study will examine whether converged news organizations do indeed utilize their shared resources to make their Internet presence more interactive and media rich than the Web sites

of non-converged news organizations. The results of this inquiry show news organizations and leaders how these elements are being used by innovators in the media industry. Such insight may provoke other news organizations to couple their resources and offer consumers information in a manner that meets their needs and preferences.

CHAPTER 2: LITERATURE REVIEW

"The new information and communication technologies have been discussed as both an opportunity and a risk from the point of view of the traditional established media" (Neuberger, et al., 1998, para. 2). More and more people are using the World Wide Web as technology becomes more accessible, and news organizations are noticing this trend. According to the U.S. Department of Commerce, more than 143 million people—53.9 percent of the population—were online in September 2001, and that figure is growing at a rate of 20 percent a year since 1998. In addition, more than 174 million people—65.6 percent of the population—are computer users (U.S. Department of Commerce, 2002).

With such a large audience and potential for growth, the Internet and the World Wide Web have joined the ranks of television and print as a mass medium. According to Morris (1996), communication researchers have only just begun to embrace the Internet as a mass medium, sparked by research uncovered in the fields of education, management, information science, and library science. A thematic meta-analysis of the Internet uncovers similar findings (Kim and Weaver, 2002). From 1996 to 2000, the analysis logged only 561 articles in 86 communication and internet-related journals as indexed

in *Communication Abstracts*. This may seem reasonable except when compared with the total number of articles featured during this time frame (8,922 total articles). Of the 561 internet-related articles, only 96 articles "tested a specific communication theory or relied on communication theories for their primary arguments" (p. 529).

Having proven this new medium is not simply a fad, researchers are now paying more attention to the effect the Internet has on established media like print and broadcast. Earlier research suggests that new technology will not likely affect the use of these other media (Bromley and Bowles, 1995). However, a study conducted by Stempel, Hargrove, and Bernt (2000) found shrinking numbers in the consumption of broadcast and print news and an increase in consumption of online news. In addition, these researchers observed that most news consumers deliberately seek out either newspapers or the Internet to obtain additional, more specific information. Based on this observation, they concluded that newspapers and the Web attract users who play an active role in acquiring information, which is consistent with research conducted by Althuas and Tewksbury (2000).

Unlike print and broadcast, the Internet offers news organizations unlimited time and space to provide additional information that other media cannot make available. However, the contents of such sites are generally re-purposed stories from these

traditional media. That is, news organizations simply cut and paste stories from the print versions onto the Web site. Nerone and Barnhurst (2001) indicate that the Internet began as a "simplified print medium," which offered a "new location for reading and writing, a return from the immediacy of broadcasting to the calm of words in type" (p. 470). Barnhurst (2002) suggests that newspaper and magazine publishers "use their internet [*sic*] presence as a low-cost place holder that guards their US [*sic*] market position" (p. 477). It would appear, then, that news organizations are not making any attempts to satisfy the needs of their consumers. Rather, they are adhering to the paradigm that the Internet is simply an extension of print media.

Uses and Gratifications

Studies in the uses and gratifications of new media technologies suggest that this could be detrimental to online news organizations that want to attract not only Web surfers but also loyal news consumers. The uses and gratifications theory posits that people choose media strategically based on how well these media meet their specific needs (Katz, Blumler, and Gurevitch, 1974). For instance, if a news consumer wants visual and auditory stimulation, he or she will not likely turn to print as a source of information but rather a medium that can provide the dynamic characteristics required, such as

broadcast or Internet news. Their study resulted in the following uses and gratifications model:

(1) the social and psychological origins of (2) needs, which generate (3) expectations of (4) the mass media or other sources, which lead to (5) differential patterns of media exposure (or engagement in other activities), resulting in (6) need gratifications and (7) other consequences, perhaps mostly unintended ones (p. 20).

The uses and gratifications theory has proven useful in understanding what people do with media. Studies in this genre typically fall into one of two categories: 1) typological studies of gratifications sought and gratifications obtained, or 2) investigations into relationships between gratifications sought and gratifications obtained and exposure to a medium or content choice (Rayburn, 1996). Studies in the first category were prevalent early in the history of the theory; whereas, category two studies are more common today.

Cutler and Danowski (1980) later developed another layer to the relationship between gratifications and the medium of choice. Their research suggested that motivations are generally either content related or process related. Content related motivations refer to the gratifications people feel by actually using the message, and process related motivations refer to the gratifications achieved through the act

of using a medium. Stafford and Stafford (2001) expanded upon this study, suggesting a third variable they identified as socialization—using the medium to communicate with other people.

While earlier studies have primarily focused on the uses and gratifications of television viewers, more and more studies are incorporating this theory to better understand the Internet as a mass medium. Of the 96 theory-based, Internet-related articles found by Kim and Weaver in their thematic meta-analysis of Internet-related research, most (21.9%, N = 21) of these articles used the uses and gratifications approach to develop their argument.

Wanting to better understand the motives for consumer behaviors, Korgaonkar and Wolin (1999) examined both demographic variables and user motivations to better understand why consumers use the Web as a medium. Using both focus group interviewing and a quantitative questionnaire, the researchers suggest that "motivations and concerns play a greater role than demographics alone in determining subjects' actions with respect to Web usage" (p. 66). Continuing with the association between Internet use and consumer behavior, Foucault and Scheufele (2002) focused their study on why university students used the Internet for shopping to understand the "social factors that influence the purchasing behaviour [*sic*] of students" (p. 422). This study found a strong correlation between

consumers' needs and their behaviors, providing strong support for the uses and gratifications theory with regards to the Internet as a medium.

Although many studies tend to focus on consumers use of Internet from a marketing or economic standpoint, recent studies have focused on the use the Internet as an information source. Parker and Plank (2000) conducted an exploratory study of college students' use of the Internet for news consumption, replicating the methodology from a similar study conducted by Vincent and Basil (1997), which did not include the Internet as a news medium. Although their findings "underscore the growing importance of the Internet as a source of information," their results suggest there is no difference in why college students use the Internet and other media for news consumption.

Recently, several studies have examined what specific gratifications the Internet and new media technology fulfill to understand why people use the Internet. LaRose, Mastro, and Eastin (2001) report several commonly identified gratifications, including activity, social interaction, novel sensory, pleasing sensory, and self-reaction. Activity gratifications referred to behaviors used to ease boredom or provide fun or amusement. The social gratifications attract users who wish to interact or communication with others. According to LaRose, et al. the novel sensory gratification satisfies users' need for

information; whereas, pleasing sensory satisfies users' need for "interesting or enjoyable graphics or sound" (p. 399). The self-reactive gratifications were identified among media users who wanted to escape or relax. Their study found a significant correlation between these gratifications sought and use of the Internet.

Katerattanakul (2002) identifies five common gratifications in a more recent study of the Internet: entertainment (i.e., relaxation, enjoyment, etc.); consumer information-transaction (i.e., to obtain information about a future purchase or for making a decision); social communication (i.e., to interact and meet others); information-seeking (i.e., to research topics of interest); and surveillance (i.e., to learn about current or forthcoming events). This study later narrows this list down to just three—information search, transactions, and enjoyment—which recur in other studies of Internet usage (Althaus and Tewksbury, 2000; Parker and Plank, 2000).

The Internet is quite different from other media in its ability to fulfill several of these gratifications at once. For instance, news Web sites in converged organizations have recently begun to incorporate news stories into games to better help consumers understand complex issues:

On February 21, NBC's Dateline ran a piece about dangerous roads in America, zeroing in on three particularly treacherous

thoroughfares. The program invited viewers to log onto the MSNBC site to learn about roads in their community. Those who did so could enter their zip code and, within seconds, based on federal data, find out how many fatal accidents had occurred in that community between 1992 and 1995 and on which roads. Within twelve hours MSNBC logged 68,000 visitors to that feature (Pavlik, 1997, para. 6).

Another example (Schultz, 2000) uses an exploratory questionnaire to survey readers about their motivations for using the *New York Times* online forum. Like previous results in uses and gratifications studies, respondents suggest this platform fills the information, transaction, and enjoyment needs. Direct quotes such as the one below illustrate how the interactive features of the Internet satisfy both the information and enjoyment needs:

These Internet forums and email [*sic*] lists are very important to me...Good quality forums ought to encourage the [message] poster to cite solutions, pretending the [message] poster is the politician or policy maker. I suppose that Internet forums can be considered relatively civilized outlets for ventings (p. 215).

Although these studies agree on the gratifications the Internet satisfy, many other studies uncover different gratification needs (Ko, 2000). Although these needs may vary from study to study, news

organizations should understand that news consumers use media for very different reasons. The needs of Internet news consumers differ from those of print or broadcast media, and it's those differences that draw people to this new mass medium. News organizations should appreciate the unique features of the Internet that attract these individuals to the World Wide Web for news consumption.

Influences on Media Content

In addition to understanding how the news consumer uses media, it is also imperative to understand the choices news producers make in creating media content. Shoemaker and Reese (1996) identify several factors that influence the breadth and depth of news content. This research led to the development of a hierarchical model of influences on media content, of which both personal and organizational factors play important roles.

Rather than cater to the needs of the consumer, media workers create news that addresses the organization's expectations. "Studies of newsroom activity show that occupational and organizational considerations far outweigh any constraints imposed by audience needs and interests" (p. 116). In this way, news workers, or gatekeepers, present information that qualifies as one of the traditional news values of newsworthiness (i.e., prominence, human interest, conflict, unusualness, timeliness, and proximity)—developed

out of what early journalists believed appealed to news consumers. These values provide a strong indication of the kinds of news stories that media organizations publish, but they do not specifically account for the quality of information contained in their stories.

The extent to which journalists develop stories is based primarily on the routines of the media organization and journalists. Although limitations placed on journalists play a small role in how in-depth stories become, "routines help explain how that content is shaped in response to those limits" (p. 118). These routines often allow journalists to cope with physical restraints, such as time or space restrictions. For example, if a story develops just before it is to be aired, it will likely offer few details.

In addition, journalists often find themselves following specific routines in how they report on issues. For decades, news has followed the inverted pyramid format, with the most important facts delivered first and the minor details following. Often times, stories are developed based on the reporter's preconceived notion of the story's events. These routines develop as a result of the journalist's experience, but "trying to fit news stories into familiar forms may blind reporters to other features of the story" (p. 122).

As journalists and media organizations grow accustomed to these routines, it becomes more difficult to change the way news

stories are delivered. As a result, stories seem to differ very little from one organization to the next, and more often than not, editors question reporters who veer too far from the news wires reports. This makes it very difficult for reporters to offer a new perspective or angle to a story. "The desire to be unique is far outweighed by the risk of being different and, perhaps, wrong in full view of the nation" (p. 125).

Converged News Organizations

Many news organizations hope to prosper as a result of the integration of the Web with their existing platform. In fact, some have discovered the benefits of not only offering print and online news, but also delivering information through broadcast channels. These converged news organizations may be in a better position to offer consumers news packaged in such a way that it meets their information, transaction, and enjoyment needs through the "coming together and blurring of lines between various forms of communication" (Head, et al., 2001).

According to Killebrew (in press), convergence is a two-part process involving the technological delivery of information and the utilization of this information through organizational partnerships. In the current practice of convergence, information is shared between print media (i.e., newspapers), broadcast media (i.e., television and radio), and the Internet (through the World Wide Web). These three

formats gather information and news using communal technical resources. In the case of the Tribune Company, several news organizations around the country have access to one single database system known as Oxygen, which stores text, video, audio, and graphics (Lasica, 2002). Sharing technical resources better enables reporters and editors to distribute information equally between these formats through the collaboration of several news organizations (Killebrew, in press).

Gentry (n.d.) identifies sixty news organizations throughout the United States that offer a convergence relationship with regard to news (Appendix A). These organizations team up to cover and develop news stories. From simply sharing weather reports to central, integrated newsrooms, these organizations vary in their stage of development in the convergence activities.

Another researcher identified several news organizations in which print and broadcast platforms collaborate in a study of cross-ownership of newspapers and television stations (Pritchard, 2002). Commissioned by the Federal Communications Commission, this study sought to uncover the extent to which jointly owned newspapers and television stations in a community speak with a single voice about important political matters. Pritchard claims there exists only seventeen cross-owned newspaper-television collaborations in the

United States as of mid-2002. Of these organizations, Pritchard selected ten for closer examination (Appendix B).

Many times these partnerships develop as a result of the acquisition of media properties. Other times, converged news organizations maintain separate ownerships and management. In both cases, several organizations pioneered the convergence movement; however, they vary in how to put convergence into practice. Whether they share ownership or just story ideas, they exemplify this new era of journalism.

The Tampa Tribune, WFLA, and TBO.com. In Tampa, Florida, Media General's *The Tampa Tribune*, WFLA (News Channel 8), and TBO.com emerged as prominent players in the convergence movement. Identified by Gentry as one of the most converged news organizations in the United States, *The Tampa Tribune*, WFLA, and TBO.com share a state-of-the-art facility and resources with each other on a voluntary basis: no single individual controls the flow of resources among all three platforms (Carr, 2002). Yet there are hundreds of examples of how all three platforms work together to accomplish a single goal. For instance, after a small plane crashed into a Tampa building, the organization was able to provide comprehensive coverage by sharing resources:

TBO.com's Jim Collins witnessed the crash and reported live from the News Center almost immediately. Tribune business writer Dave Simanoff had records on file about the building's tenants; he delivered this information to WFLA-TV viewers live. The Tribune archive desk quickly traced the owner of the plane via the tail number and Tribune reporters and editors helped wrangle witness interviews for WFLA-TV (Carr, 2002, para. 11). *Chicago Tribune, WGN, and chicagotribune.com*. The Tribune Company, which owns print and broadcast news organizations in many of the nation's largest markets, takes advantage of new technology as it becomes available. In November 2000, the Tribune Company integrated several content management systems between eleven Tribune affiliates under the Oxygen system, which allows staff to share stories, images, sound, and video online (Lasica, 2002b). Gentry suggests that this partnership could in fact be the most extensive endeavor of all sixty converged partnerships.

Unlike *The Tampa Tribune*, the Tribune Company collaboration does not offer a separate Web version. The print and broadcast platforms each have a site where news and information may be obtained, and links on these sites lead to one of several online sites. Local and national news stories are generally linked to chicagotribune.com; sports information and news are generally linked

to chicagosports.com; and entertainment information and news are linked to metromix.com. According to Killebrew (in press), such a merger does not follow the true convergence model. He refers to this kind of partnership as "partial convergence with newspaper bias."

The Dallas Morning News, WFAA, and DallasNews.com. Although the Belo Corporation owned both *The Dallas Morning News* and the ABC television affiliate WFAA, the two news organizations were fierce competitors for nearly fifteen years (Murphy, 2002). Now these two companies regularly collaborate to offer news consumers more comprehensive information while increasing productivity.

Political news, state news and photos from the *Dallas Morning News* [sic] routinely appear on other Belo sites in Texas: WFAA, Texas Cable News, Austin's KVUE and the *Denton Record-Chronicle*. In the opposite direction, most of the weather-related features on dallasnews.com come straight from the meteorologists at WFAA (Lasica, 2002a, para. 22).

In addition, Belo Interactive has developed its own Web technology—VelocIT—to create a uniform Web interface between all Belo news organizations (Schult, 2002). VelocIT creates a standard template that can be easily customized with new content. Such technology eliminates "the need for a large online staff at every site" to operate and maintain Web sites ("From the outside in", para. 7).

The Arizona Republic, KPNX-TV, and Azcentral.com. Gentry identified *The Arizona Republic*, KPNX-TV, and Azcentral.com triad as highly converged. Because Gannett owns all three news providers, sharing story ideas with editors from each platform has become routine (Finberg, 2003). Although they are more than a mile apart, *The Arizona Republic* newsroom and KPNX-TV studio exchange video, audio, and communication signals through a microwave link. In addition, a camera in the *Republic* newsroom, equipped with a teleprompter linked directly with KPNX, allows producers to make last minute changes to reports delivered by *Republic* staff.

Reporters and editors who once fought to keep their stories under wraps until the newspaper hit the door step the next morning are now pushing the TV station and Web site to break their stories immediately. Reporters are writing "bulletin" versions of their stories for TV and online in an attempt to get them out faster, and *Republic* editors are partnering with their electronic counterparts to help the newspaper reach audiences who do not rely on the print media for their news and information (Callinan, 2001, para. 21).

Multimedia and Interactivity in Convergence

These news organizations "take advantage of the technology by providing print stories from the newspapers, streaming video and

audio stories from the broadcast television outlets and independently created original stories from the web-based reporters on their dot-com staff" (Killebrew, 2003, p. 8).

Travis Linn, interim dean of the journalism school at the University of Nevada at Reno, sees this integration as the direction that journalism is moving towards with the convergence movement (South and Nicholson, 2002).

Students entering the journalism field these days need to understand how different media—written words, audio, video, graphics, photographs, interactivity—work together to tell a story. The concept of integrating media, and using interactivity, is essential (p. 11).

Multimedia. "One of the most important dimensions that differentiates new media from traditional media is the level of realism provided" (Coyle and Thorson, 2001, p. 65). Video, audio, and animation are the tools necessary to create a media-rich environment that appeals to multiple senses (Schultz, 1999). These components make up the elements of "multimedia." Multimedia elements engage the senses in an effort to simulate "real life," thereby determining how rich an individual perceives a medium to be (Steuer, 1992; Sundar, 2000).

This level of richness, or vividness, increases as senses are stimulated. The way in which the medium presents information to the sensory systems—visual, auditory, haptic (touch), taste, and smell—is very often referred to as vividness and is measured by the breadth and depth of sensory information that a user engages (Bell, 2001). Breadth refers to the quantity of sensory information that a medium will stimulate; whereas, depth refers to the quality, or resolution, of that sensory information (Steuer, 1992).

For instance, print media are relatively low in breadth because they only stimulate one of the five senses: sight. Television media, however, offer greater breadth of vividness because they stimulate two sensory systems: visual and auditory systems. Attempts have been made in the past to increase the breadth of vividness in films by incorporating the haptic and smell senses in the mediated experience (Steuer, 1992). Rides at Universal Studios movie theme park in Orlando, Florida, often use seating devices that vibrate and emit strong odors during key times in the film. Yet such tools are not readily accessible and come at a great expense to the organization. Computer mediated communication generally relies on only the visual and auditory senses.

Beyond the breadth of multimedia sensory appeal, the depth of sensory information adds yet another dimension to the level of

vividness. According to Steuer, depth is best understood in terms of the quality of sensory stimulus. In an unmediated environment, sensory depth is at its greatest. However, in a mediated environment, such as on a Web site, images and sounds will not be as vivid as in real life. For instance, a video clip delivered on a Web site will vary in size and clarity based on the bandwidth of the user or the format the clip was recorded in. Sometimes images appear pixilated because they were not captured in a high resolution format, which decreases the depth of vividness in that it appears less "real."

Sometimes, though, forces beyond the control of the news organization affect the depth of vividness on a Web site. The transmission speed of the modem, or bandwidth, of the Internet Service Provider determines the download speed, size, and quality of multimedia components like graphics, video, and sound clips (Pavlik, 1998). To meet the bandwidth demands required to view video and sound on the Internet, news organizations must "stream" their multimedia. This technique involves "placing several frames of video [or sound] into a buffer on the client (user) computer's hard drive, and then beginning to play the video, as more files are placed into the buffer" (p. 46).

The relationship between multimedia and audience perception has been explored in several studies. One study examined the use of

graphics in televised news stories (Fox, et al., 2002) to learn more about how people mentally process graphics. Using participants' heart rate, researchers were able to measure the attention of participants when shown televised news stories featuring either animated graphics, redundant text graphics, or no graphics. The results of this experiment suggest that people pay more attention to animated graphics than to redundant graphics (images that reiterated the main idea of the news story). In addition, researchers found that graphics aided participants in understanding difficult stories and recollection of news stories.

Coyle and Thorson (2001) also examined the relationship between vividness and audience attitudes on Web sites. The results of their experiment uncovered a relationship between the level of vividness on Web sites and attitudes toward those sites. Web sites that featured audio and animation resulted in stronger attitudes from participants than sites without these elements.

If news media organizations want to attract news consumers to their Web versions, it would behoove them to include multimedia components on their Web platforms. Because truly converged news media organizations share resources equally between their print and broadcast counterparts, they will likely differ in how they incorporate multimedia components from non-converged news media organizations.

RQ1: How will the Web platform in converged news media organizations differ from the Web sites of non-converged news media organizations in their use of multimedia components?

Interactivity. "Journalism, in many places, is turning into a two-way exchange of information in which people get to talk back instead of a one-way pipeline that was our traditional model of journalism," (Schaffer, 2001, "Interactivity," para. 4). Mass media are slowly moving away from the one-to-many model, opting instead for the many-to-many model that incorporates the feedback function (Li, 1998). Results from a poll conducted by the Pew Center for Civic Journalism shows that 99 percent of editors surveyed believe that it is imperative to understand what the reader wants, which shapes what information and news is actually covered (Schaffer, 2001). By not including elements of interactivity into their online stories, news organizations have little means to understand the needs of online consumers.

Researchers have yet to agree on a single, all-encompassing definition of interactivity (Pavlik, 1996). One author believes that with interactivity, information must be exchanged "within a computer mediated system controlled by the user" (Fidler, 1997, p. 284). However, Bell (2001) focuses on the user's role in his definition of interactivity, measured by the "degree to which a person can

manipulate the environment of a medium" (p. 51). Despite these differences, researchers do agree on one important facet of interactivity: it allows users the ability to provide feedback—an essential component of the modern communication model—to media organizations originating the message.

Rafaeli (1988) identifies three levels of interactivity: "two-way (noninteractive) communication, reactive (or quasi-interactive) communication, and fully interactive communication" (p. 119). He and Zhu (2002) also propose three models of interactivity—the transmission model, the interactive model, and the community model—in their qualitative analysis of interactivity of Chinese news Web sites. Using these models as guides, they uncovered a marked increase in the amount of interactivity, "allowing the online newspaper to interact with its readers, and readers with readers" (p. 135).

Massey and Levy (1999) believe journalism becomes interactive when "content consumers are given opportunities to become content creators" (p. 141). Under this assumption, links appear to be the most obvious tool for interactivity. Links allow users to move between hypertext documents and files on the World Wide Web. However, Schultz (1999) argues in his study of interaction options on newspaper Web sites that interactivity involves more than simply clicking on a link. In order for communication to be interactive, it should progress

beyond reactive communication to incite additional, interrelated messages.

Schultz identified several tools that increase interactivity on Web sites, including e-mail, live chats, online polls and surveys, and online forums. E-mail allows users to send asynchronous text and graphic messages between journalists, or editors, and readers. Like e-mail, live chats allow users to communicate with newspaper staff through synchronous messages referred to as *threads*. Sometimes, these chats are moderated by hosts who define topics and keep communication confined to specific issues. Schultz categorizes online polls and surveys as reactive communication but suggests that they could "still be used as a means to ignite and channel discussions" ("Interactive Online Journalism," para. 5, bullet 3). Schultz also adds that online polls and surveys are by no means representative because they do not follow the same rigor as a scientific survey or poll. Much like live chats, online forums allow users to post threads to electronic bulletin board systems for asynchronous communication with other readers. Again, this interactivity component is largely reactive but has the capability for triggering interactive communication.

In addition, Schultz (1999) describes several other interactive options that some news organizations used to enhance the interactivity of a Web site, such as interactive quizzes, digital

postcards, and virtual tours. Interactive quizzes test readers' knowledge of facts and issues relating to stories. Sometimes these are supplanted within games as a means to convey information through an amusing interface. Postcards allow readers to send entire news stories or snippets of information to entice the reader to read more. These and other components—unique to the Internet—give news consumers the power to read what they want.

One study investigating interactivity between journalists and readers used a qualitative questionnaire of journalists to understand how they evaluate and respond to readers' e-mails (Schultz, 2000). This study gathered a sample of 50 *New York Times* journalists who made their e-mail addresses public: only nineteen journalists responded. Using an open-ended questionnaire, journalists were asked to write about their personal experiences of e-mail communication with readers and participation in online forums. The results of this exploratory survey reveal that although e-mail from readers is primarily reactive, some journalists "appreciate online communication with readers" and actively respond to e-mail inquiries (p. 214). The study also reveals that reader-to-reader communication is increased through the use of forums, thereby increasing the newspaper's interactivity.

Schultz (1999) suggests that those news organizations that "exploit the Internet's opportunities in terms of visual design (multimedia) seem also more likely to exploit the Internet's conversational potential" ("Interactive Online Journalism," para. 9). As such, it seems likely that converged media will focus a great deal more attention on incorporating interactive components on their Web site than non-converged news organizations do. Like multimedia, these elements instill a more positive attitude toward the medium (Ko, 2000), and with their combined resources, converged news organizations may be better able to include these components in their Web presence than non-converged news media organizations.

RQ2: How will the Web platform in converged news media organizations differ from the Web sites of non-converged news media organizations in their use of interactive components?

CHAPTER 3: METHOD

In order to recognize what interactive and multimedia components news Web sites use, this study examined the Web sites of news organizations who are considered by several sources to be highly converged (Pritchard, 2002; Gentry, n.d.). These news organizations include Belo Corporation's DallasNews.com (*The Dallas Morning News* and WFAA), Gannett's Azcentral.com (*The Arizona Republic* and KPNX-TV), Tribune Company's chicagotribune.com (*Chicago Tribune* and WGN), and Media General Inc.'s tbo.com (*The Tampa Tribune* and WFLA). All of these news organizations share print, broadcast, and online resources in varying degrees according to previous research.

The sample also included two news Web sites from non-converged media organizations. The Web site for the daily newspaper *The Buffalo News* (buffalonews.com) was selected because it has a circulation of more than 230,000 (Bacon's Newspaper Directory, 2003) and was not identified as having a relationship with a broadcast media organization. A daily newspaper located in an urban city of New York, this organization was chosen to represent the northeast geographic area of the United States.

From the Master Station Index of 634 broadcast media owners, the Web site for KFMB (IND) Channel 8 was selected for analysis

because it produces several newscasts each day and is ranked in the top 30 Designated Market Areas (DMA). KFMB's parent organization, Midwest Television, Inc., does not own any additional television stations or newspapers (Broadcast Employment Services, n.d.). KFMB operates out of San Diego, California, and is a CBS affiliate.

This study conducted a content analysis of news-oriented Web sites for a period of seven days to explore what interactive and multimedia components each news organization employed on its Web site. Each Web site was accessed at approximately the same time every day. Examination of large Web sites took up to 2 hours, and smaller sites took about 1 hour to code. Some sites required registration to gain further access to the actual stories: for these sites, the researcher who did the coding pre-registered prior to the start of the study.

Web sites take users to the organization's home page, or the initial screen of the organization's Web site. Usually only limited information, such as a news headline or story abstract, is available on the home page. This represents the first tier of the Web page. Information is then hyperlinked to another page, where additional information can be found. Generally, interactive and multimedia components are hyperlinked from the news story in the second tier; however, content on the home page was analyzed because it is

"instrumental in forming a user's impression of gratification potentials" (Chan-Olmsted and Park, 2000, p. 325). To fully ascertain the use of these elements, each site was analyzed two tiers beyond the organization's home page. Pop-up windows, which usually appear almost instantaneously with the loading of a Web page, were not coded since many Web browsers now block pop-up windows from appearing.

Each Web site offered an index of topics for which stories and information can be categorized. Since the focus of this study was on news, only those Web pages relating to news were coded. Such pages had headings like *news, local, national, business*, etc. Excluded in this study were pages that fell under such headings as *opinion/editorial, weather, sports, and entertainment*. Although these sections are considered valid sources of information, this kind of information is generally considered to be entertainment rather than news (Shoemaker and Reese, 1996). Because the focus of this study was on news content, these and similar categories were excluded.

When multimedia or interactive components were used on a news-related but were not related to the story, they were not coded. For instance, nearly every Web site offered a search tool; however, this search tool relates to the entire site—not the story in question.

Only dynamic components used to enhance a news story were used in this study.

Because the goal of this study was to determine how converged news organizations directly use these dynamic components to enhance their stories, only stories that originated by the news organization's staff reporters were counted in this study. Stories that originated a news wire service (e.g., Associated Press, Reuters, Knight Ridder) were not counted, as they do not indicate the news organizations' use of their own resources to advance a story. In some instances, the authors of some stories were unknown because an author was never identified. In these situations, the story was coded as if it was originated by a staff writer.

While story Web pages made up the units of analysis, the variables were the interactive and multimedia components found on these pages. The following items, as well as links to these components, were visually coded for a length of seven days in February 2004 (Appendix C): live chats with authors, editors, or other readers; online polls or surveys; online discussion forums; interactive quizzes or games; search tools; digital postcards that allow users to e-mail stories to others; virtual tours; links to Web sites and other news stories that specifically relate to or advance the original story; streaming video and audio clips; photos; animated graphics, such as

flash or animated gifs; and static graphics, such as graphs or maps (Wrobel, 2002). Also, the researcher who did the coding counted other interactive and multimedia components that were not listed above in the category "other" with a brief description of the component.

Several studies have been unable to find a correlation between the kinds of interactive features and the perceived level of interactivity by the Web site user (Lin, 2002; McMillan, 2000). That is, one interactive component is generally not perceived to be more interactive than another interactive component. Therefore, interactive components were not coded in a rank order. These elements were simply counted. Because interactive components were counted rather than ranked, multimedia components were also counted.

CHAPTER 4: RESULTS

This study measured six organizations' use of interactive and multimedia components on their Internet presence. Four of these news organizations are considered to be highly converged, having strong relationships among their print and broadcast partners. The other two media organizations—one print and one broadcast—do not collaborate with other media organizations.

Table 1 shows the frequencies and mean number of stories for each day for these six Web sites. During the seven-day period, the researcher coded 1,361 news stories by staff reporters from azcentral.com, buffalonews.com, chicagotribune.com, dallasnews.com, kfmb.com, and tbo.com. Most of these news stories came from chicagotribune.com (N=412), accounting for 30.27 percent of the total stories coded. Although this figure seems high in comparison with the other news organizations, one must take into consideration that the *Chicago Tribune* does not have an independent Web identity like the other three converged news organizations. Kfmb.com, the only non-converged broadcast organization, had the fewest total stories (N=101), accounting for 7.42 percent of the total stories coded.

Table 1: Story Means by Organization

News Organization	Stories Per Day Mean	Total Number of Stories (Percentage)
azcentral.com	45.57	319 (23.44%)
buffalonews.com	30.57	214 (15.72%)
chicagotribune.com	58.86	412 (30.27%)
dallasnews.com	19.29	135 (9.92%)
kfmb.com	14.43	101 (7.42%)
tbo.com	25.71	180 (13.23%)
Total	194.43	1361 (100%)

Multimedia. Research question 1 asked "How will the Web platform in converged news media organizations differ from the Web sites of non-converged news media organizations in its use of multimedia components?" The data in Table 2 reveal the quantity of multimedia components each news organization utilized in their stories for one week. As indicated in the table, no news organization offered animated graphics to enhance its Web stories. The photo was the most frequently counted multimedia component among these organizations during the study. Following the use of photos was the use of static graphics, of which all but one of the six news organizations used at some point to enhance its news stories. Only chicagotribune.com used streaming audio (44) in their stories, but every organization—with the exception of buffalonews.com—used streaming video (82).

Table 2: Interactive Components by Organization

	Streaming video	Streaming audio	Photos	Animated graphics	Static graphics	Other multimedia	Multimedia Score	Frequency
azcentral.com	34	0	55	0	0	16	105	15.77%
buffalonews.com	0	0	69	0	6	0	75	11.26%
chicagotribune.com	22	44	167	0	80	24	337	50.60%
dallasnews.com	21	0	13	0	10	1	45	6.76%
kfmb.com	4	0	62	0	25	0	91	13.66%
tbo.com	1	0	10	0	2	0	13	1.95%
Total	82	44	376	0	123	41	666	100%

Several news organizations featured multimedia components not listed in the coding form, including fourteen slideshows and 26 photo galleries. The slideshows presented information about the stories using photographs and text in Microsoft PowerPoint presentations, and the photo galleries displayed a series of electronic photographs relating to the story. These items were included in the total multimedia score, with each occurrence of a multimedia component counting as one point. For instance, azcentral.com had both a link to a photo gallery and a slideshow presentation on the same day, which gave the "Other multimedia" category a score of 2 for that specific story.

The quantity of streaming video, streaming audio, photos, animated graphics, static graphics, and other multimedia components were summed to determine the news organization's multimedia score. Chicagotribune.com had the highest multimedia score (337), distantly followed by azcentral.com with 105 multimedia components. Following these two news organizations were kfmb.com (91), buffalonews.com (75), dallasnews.com (45), and tbo.com (13).

The frequencies indicate the distribution of multimedia components utilized among the six news organizations during the study. As shown in Table 2, chicagotribune.com had the largest percentage, with more than three times the next closest news organization, azcentral.com (15.77%). Having the two smallest percentages are the converged media organizations dallasnews.com (6.76%) and tbo.com (1.95%).

Table 3: Mean Occurrences of Multimedia Components

News Organization	n	Multimedia Score	Mean Multimedia Score
azcentral.com	319	105	0.3292
buffalonews.com	214	75	0.3505
chicagotribune.com	412	337	0.8180
dallasnews.com	135	45	0.3333
kfmb.com	101	91	0.9010
tbo.com	180	13	0.0722

The mean multimedia scores were then computed using the statistical analysis software SPSS (Table 3). The mean multimedia

value reflected the multimedia score divided by the number of stories for each news organization. Kfmb.com had the highest mean (0.9010), followed by chicagotribune.com (0.8180). The media organization with the smallest mean was tbo.com (0.0722).

Table 4: Comparison of Multimedia Components Among Organizations

News Organization (I)	News Organization (J)	Mean Difference (I-J)	Standard Error	Tukey's HSD Significance
azcentral.com	buffalonews.com	-.0213	.1259	1.000
	chicagotribune.com	-.4888	.1063	.000(*)
	dallasnews.com	-.0042	.1463	1.000
	kfmb.com	-.5718	.1627	.006(*)
	tbo.com	.2569	.1328	.382
buffalonews.com	azcentral.com	.0213	.1259	1.000
	chicagotribune.com	-.4675	.1201	.001(*)
	dallasnews.com	.0171	.1566	1.000
	kfmb.com	-.5505	.1720	.018(*)
	tbo.com	.2782	.1441	.384
chicagotribune.com	azcentral.com	.4888	.1063	.000(*)
	buffalonews.com	.4675	.1201	.001(*)
	dallasnews.com	.4846	.1413	.008(*)
	kfmb.com	-.0830	.1582	.995
	tbo.com	.7457	.1273	.000(*)
dallasnews.com	azcentral.com	.0042	.1463	1.000
	buffalonews.com	-.0171	.1566	1.000
	chicagotribune.com	-.4846	.1413	.008(*)
	kfmb.com	-.5677	.1875	.030(*)
	tbo.com	.2611	.1622	.592
kfmb.com	azcentral.com	.5718	.1627	.006(*)
	buffalonews.com	.5505	.1720	.018(*)
	chicagotribune.com	.0830	.1582	.995
	dallasnews.com	.56766	.1875	.030(*)
	tbo.com	.8288	.1772	.000(*)
tbo.com	azcentral.com	-.2569	.1328	.382
	buffalonews.com	-.2782	.1441	.384
	chicagotribune.com	-.7457	.1273	.000(*)
	dallasnews.com	-.2611	.1622	.592
	kfmb.com	-.8288	.1772	.000(*)

Based on observed means.

* The mean difference is significant at the 0.05 level.

To examine the relationship between the six news organizations and their use of multimedia components, a GLM univariate analysis in SPSS was conducted using the Tukey's honestly significant difference (HSD) post hoc test for multiple comparisons (Table 4). This test revealed that chicagotribune.com and kfmb.com had significantly different means than the other news organizations, except when compared to each other. Because there was no significant difference in the means of azcentral.com, buffalonews.com, dallasnews.com, and tbo.com, no inferences can be made about these organizations' use of multimedia components. With significantly higher means than the other organizations, chicagotribune.com and kfmb.com had significantly more multimedia components during the seven days of the study. However, the analysis revealed no significant difference between these two sites, so no assumption can be made about the differences between them.

Interactivity. Research question 2 asked "How will the Web platform in converged news media organizations differ from the Web sites of non-converged news media organizations in their use of interactive components?" The data in Table 5 reveal that none of the six news organizations offered live chats or virtual tours to develop a story, and only tbo.com used an interactive quiz. Nearly every news

organization offered Web site users the ability to send articles via e-mail or electronic postcards with the exception of kfmb.com.

An Interactivity Score was derived by adding the total number of interactivity components together. Chicagotribune.com scored 1132; azcentral.com scored 525; buffalonews.com scored 279; dallasnews.com scored 215; tbo.com scored 199; and kfmb.com scored 156. Several news organizations featured interactive components not listed in the coding form, including seven feedback forms, one interactive map, and six tools that ranked companies by

Table 5: Interactive Components by Web Site

	Live Chats	Online Polls or Surveys	Discussion Forums	Interactive Quiz or Game	Search Tool	E-mail article tool or Digital Postcard	Virtual Tour	Related Web Links	Other interactivity components	Interactivity Score	Frequency
azcentral.com	0	0	0	0	1	319	0	205	0	525	20.95%
buffalonews.com	0	0	0	0	0	214	0	65	0	279	11.13%
chicagotribune.com	0	15	1	0	18	412	0	673	13	1132	45.17%
dallasnews.com	0	6	2	0	1	133	0	72	1	215	8.58%
kfmb.com	0	5	38	0	0	0	0	113	0	156	6.23%
tbo.com	0	0	0	1	0	175	0	23	0	199	7.94%
Total	0	26	41	1	20	1253	0	1151	14	2506	100%

their stock index. The feedback forms allowed users to send comments to either the author or the editor by entering comments into fields and hitting the submit button. These items were included in the total interactivity score, with each occurrence of an interactivity component counting as one point.

The frequencies in Table 5 indicate the distribution of interactivity components utilized by the six news organizations during the study. Chicagotribune.com had the largest percentage (45.17%), with more than twice the percentage of the next closest site, azcentral.com (20.95%). Buffalonews.com followed azcentral.com with 11.13 percent of the number of interactivity components. Dallasnews.com (8.58%), tbo.com (7.94%), and kfmb.com (6.23) all had fairly similar percentages.

The data in Table 5 suggest that chicagotribune.com offers a great deal more interactive components than the other news sites. To test this, the mean of each Web site was computed and compared between the six Web sites. Table 6 indicates the means of all six Web sites as derived from interactivity score divided by the total number of stories featured during the study. Chicagotribune led the group with a mean score of 2.7476, followed by: azcentral.com (1.6458), dallasnews.com (1.5926), kfmb.com (1.5446), buffalonews.com (1.3037), and tbo.com (1.1056).

Table 6: Mean Occurrences of Interactive Components

News Organization	n	Interactivity Score	Mean
azcentral.com	319	525	1.6458
buffalonews.com	214	279	1.3037
chicagotribune.com	412	1132	2.7476
dallasnews.com	135	215	1.5926
kfmb.com	101	156	1.5446
tbo.com	180	199	1.1056

A GLM univariate analysis was then used to compare the means between each Web site (Table 7). Chicagotribune.com was the only organization that showed any significant difference among the six Web sites. Because there was significant difference between azcentral.com, buffalonews.com, dallasnews.com, kfmb.com, and tbo.com, no inferences can be made about their use of interactivity components. However, the data suggest that chicagotribune.com did indeed use significantly more interactivity components than the other news organizations.

Table 7: Comparison of Interactivity Components Among Organizations

News Organization (I)	News Organization (J)	Mean Difference (I-J)	Standard Error	Tukey's HSD Sig.
azcentral.com	buffalonews.com	.3420	.2973	.86
	chicagotribune.com	-1.1018	.2509	.000(*)
	dallasnews.com	.0532	.3454	1.000
	kfmb.com	.1012	.3841	1.000
	tbo.com	.5402	.3136	.517
buffalonews.com	azcentral.com	-.3420	.2973	.86
	chicagotribune.com	-1.4438	.2835	.000(*)
	dallasnews.com	-.2889	.3698	.971
	kfmb.com	-.2408	.4061	.992
	tbo.com	.1982	.3403	.992
chicagotribune.com	azcentral.com	1.1018	.2509	.000(*)
	buffalonews.com	1.4438	.2835	.000(*)
	dallasnews.com	1.1550	.3336	.007(*)
	kfmb.com	1.2030	.3735	.016(*)
	tbo.com	1.6420	.3006	.000(*)
dallasnews.com	azcentral.com	-.0532	.3454	1.000
	buffalonews.com	.2889	.3698	.971
	chicagotribune.com	-1.1550	.3336	.007(*)
	kfmb.com	.0480	.4426	1.000
	tbo.com	.4870	.3830	.801
kfmb.com	azcentral.com	-.1012	.3841	1.000
	buffalonews.com	.2408	.4061	.992
	chicagotribune.com	-1.2030	.3735	.016(*)
	dallasnews.com	-.0480	.4426	1.000
	tbo.com	.4390	.4183	.901
tbo.com	azcentral.com	-.5402	.3136	.517
	buffalonews.com	-.1982	.3403	.992
	chicagotribune.com	-1.6420	.3006	.000(*)
	dallasnews.com	-.4870	.3830	.801
	kfmb.com	-.4390	.4183	.901

Based on observed means.

* The mean difference is significant at the 0.05 level.

CHAPTER 5: CONCLUSION

Very few studies have attempted to compare the differences between converged news organizations, which claim to be on the cutting-edge of journalism today, and news organizations that many researchers believe still think of the Internet as supplemental. In fact, there exists almost no empirical research that describes the quantity and quality of new media technologies that converged news organizations can and should employ. This information has been largely anecdotal—until now.

This study examined four news organizations considered by several researchers to be "highly converged" and two non-converged news organizations to determine just how much these two types of media organizations differ in their use of new media technologies, or more specifically, multimedia and interactivity components. The results revealed that only one of the six news organizations—chicagotribune.com—had significant interactivity scores, and only chicagotribune.com and kfmb.com had significant multimedia scores.

Although this study revealed significant findings about the use of interactivity and multimedia components for specific types of stories in converged and non-converged news organizations, the results are applicable only to the six media organizations analyzed in this study.

Moreover, it would be audacious to lay claim that *all* converged and non-converged news organizations follow similar patterns in their use of multimedia and interactivity components. To make such a claim, one would need to assess the Web sites of many more news organizations to provide a representative picture of how other news organizations are using the Web. Therefore, the findings of this study can and should only apply to the original, news-related stories on azcentral.com, buffalonews.com, chicagotribune.com, dallasnews.com, kfmb.com, and tbo.com.

Despite the large number of news stories collected among these sites, the results of this study are also limited because of the length of time data were collected. Other studies have analyzed Web sites for more than the seven days allotted in this study, while others have used longitudinal studies to account for differences throughout any given year (Dibeau and Garrison, 1999 and Kweon, 2000). This methodological difference could prove a liability in its ability to replicate findings.

The specific organizations selected for this study could also place validity limitations. For instance, chicagotribune.com, although identified as a highly converged news organization, does not have a separate Web presence (e.g., chicagotribune.com does not have a separate online news staff), as do the other converged organizations.

Furthermore, stories originating from news wire services were eliminated, yet some stories did not identify whether the story came from the wire service or internally. Kfmb.com did not identify the author for any story posted on its Web site, and as such, its stories (and accompanying interactivity and multimedia components) could have come directly from a wire service. This would give kfmb.com an unfair advantage over the other sites. Future research would be well advised to include only news organizations with clear distinctions between their print, broadcast, and Web identity.

As the convergence movement expands, so will the likelihood that more interactive and multimedia components will grace the Web sites of converged and non-converged news organizations. Should researchers want to replicate this study, the complexity and frequency of these components will require more than simply one coder to collect data. Future studies would need to use multiple coders and check inter-coder reliability to eliminate disagreements between coders and avoid accidental omission of components.

When comparing the use of interactive components among the six news organizations, chicagotribune.com had the highest frequency, with more than double the next highest frequency (kfmb.com with 20.95%). An analysis of variance also revealed statistically significant

interactivity scores when compared to other converged news organizations, as well as non-converged news organization.

Chicagotribune.com used its extensive resources to incorporate more interactivity components much more frequently than both the converged and non-converged news organizations in this study. Overall, this site utilized more online polls and surveys, archive searching tools, related Web links, and other interactive tools like feedback forms, interactive maps, and stock ranking tools, all the while providing more original staff reports and news stories. Although the variety of interactivity components varied with each story, all of chicagotribune.com's 425 news stories allowed readers to send news stories to others electronically.

This may lead some to suggest that because of the high quantity of news stories featured on their site, chicagotribune.com's dominance can be attributed to that. However, when an analysis of variance was conducted on the six means excluding this component, chicagotribune.com continued to have the highest statistically significant mean, with only the non-converged broadcast news organization kfmb.com having no significant difference from chicagotribune.com.

Moreover, these findings suggest that the three "converged" news organizations that are supposedly leading the way in the

convergence movement neglect to include the necessary tools for true convergence. The mean interactivity scores of azcentral.com, dallasnews.com, and tbo.com could not significantly differentiate themselves from the smaller news organizations that have no established relationships with other news organizations. This reveals strong support for the assumption that these news organizations favor their more established platforms over the Web, fitting into Killebrew's (in press) definition of "partial convergence."

In the examination of multimedia components, the results of this study produced even more unexpected results. Kfmb.com, a non-converged broadcast news organization, had the highest mean score, followed closely by chicagotribune.com, which had a greater frequency than all the other organizations combined. This inconsistency is likely due to chicagotribune.com's having the highest number of original stories ($N=412$), as opposed to kfmb.com's having the lowest number of original stories ($N=101$).

When an analysis of variance was conducted for the six means, only kfmb.com and chicagotribune.com showed significant findings. These sites had a statistically significant number of multimedia components, suggesting that azcentral.com, dallasnews.com, tbo.com, and buffalonews.com did not provide sufficient quantities of multimedia components. It comes as no surprise that buffalonews.com

scored low on the interactivity total. However, azcentral.com, dallasnews.com, and tbo.com claim to share their resources mutually with their broadcast counterparts, but their low multimedia scores suggest otherwise.

Some may argue that photos do not qualify as multimedia (Dibean and Garrison, 1999), and should not be included in the analysis of variance. To satisfy such an argument, an analysis of variance was conducted on the mean scores excluding photographs. In this analysis, dallasnews.com joins chicagotribune.com and kfmb.com as having statistically significant levels of multimedia components. Even without photographs, the other two converged news organizations still lack the necessary multimedia features present at chicagotribune.com.

Although it did not provide enough multimedia features to a statistical level of significance, azcentral.com did secure the third highest frequency (15.77%) of multimedia components. What may have kept this site from showing significant findings could relate to the types of news stories produced by the organization. During the study, azcentral.com often used nearly identical stories in different areas of the site. This is often the case with newspapers, which tend to cater news stories to the specific market being served (i.e., readers residing in a suburb might receive the same paper as those residing in a

metropolitan area, except local stories would focus on the location where the paper is distributed). This practice may have also been used as a quick way to add seemingly new or revised content on a continual basis. In either case, because these stories varied to some degree—no matter how slight the variation—all were included in the analysis. Had their number of stories been less, azcentral.com may have shown significant findings, although such an assertion could only be revealed through a re-evaluation of the data.

For the purposes of this study, though, the only organizations to show any significant findings in multimedia are kfmb.com and chicagotribune.com, but an analysis of variance could not establish any significant difference between the two. Therefore, one must conclude that the differences between these two means could have been due to chance. This supposition implies that the converged chicagotribune.com does not offer significantly more multimedia components than the non-converged (and much smaller) kfmb.com. Although it does stand apart from the other converged news organizations, chicagotribune.com does not distinguish itself from the non-converged kfmb.com in this study. One could conclude two things from this observation: either chicagotribune.com does not provide enough multimedia features to set itself apart from less resourceful news operations, or kfmb.com excels in providing dynamic, multimedia

items beyond the scope of what might be typical for a news organization (regardless of whether or not it is converged).

To test these conclusions, researchers would need to replicate this study using a much larger sample of independently-owned broadcast news stations around the country. Such a study may prove difficult, though, as more and more organizations merge with other platforms in an effort to increase revenues and audience loyalty. Chan-Olmsted and Park (2000) conducted their own analysis of how television stations used the Internet and found that the stations in their study played it safe by providing more text-oriented information and "re-assembling and re-purposing their existing products for online delivery" (p. 336). The results from this study suggest that kfmb.com may be the exception in their inclusion of multimedia components.

In any case, both kfmb.com and chicagotribune.com demonstrated a noticeable commitment to provide dynamic stories beyond the static text placeholder. Both Web sites used photos frequently to provide visual appeal to news audiences, but chicagotribune.com offered news consumers more variety in the kinds of multimedia components with the use of streaming audio, Microsoft PowerPoint presentations, and online photo albums.

Overall, chicagotribune.com emerges as an innovative news source that realizes the potential of the Internet for providing dynamic

tools to understand and interpret information. As suggested by Massey and Levy (1999), a news organization would need to have a relatively large staff to be fully interactive. This could explain the strength of chicagotribune.com above the other organizations in the study, as it averaged almost one multimedia component per news story and almost three interactive components per story. As a result, it could become a prominent source for online news for audiences wanting more than just text on a screen.

Yet this study also suggests that smaller news organizations with fewer resources at their disposal are also taking advantage of the multimedia opportunities that the Internet offers, as is the case with kfmb.com. Although it is a television news station, most of the multimedia components on its site did not take the form of streaming audio or video. Rather, a majority of its multimedia components took the form of digital photos and slideshows. [Kfmb.com](http://kfmb.com)'s excellence in this study suggests that news organizations need not have vast resources to take advantage of the strengths of the World Wide Web.

Future research of converged news organizations could expand upon this study in many ways. As stated earlier, researchers could encompass

If, as expected, the laws governing news organization ownership become more lenient, consumers should expect to see more

convergence among media companies. At this early stage of convergence, few organizations have shown a true understanding of how convergence is practiced. However, as this trend in journalism increases, media companies will begin to move beyond what is traditionally thought of as "safe" and offer the dynamic components available through the Web platform.

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Appendices

Appendix A: Converged News Partnerships in the U.S.

Company	Location
ALABAMA	
WVUA-7, Tuscaloosa News	Tuscaloosa, AL
<p>Partnership Description: Cross-promotion and shared content. For example, Tuscaloosa News (part of the New York Times Regional Newspaper Group) features WVUA-7 weather content (and on-air personalities). WVUA-7 nightly news features "tomorrow in the Tuscaloosa News" stories. The station is an independent (no network affiliation), owned by the University of Alabama.</p> <p>Related Links: http://www.wvua7.com/ http://www.tuscaloosanews.com/</p>	
ARIZONA	
Arizona Republic, KPNX-TV (NBC), Azcentral.com	Phoenix, AZ
<p>Partnership Description: Very converged. Republic reporters regularly on KPNX. Regular sharing. Strong Republic leadership.</p>	
CALIFORNIA	
Times, KTLA (WB)	Los Angeles, CA
<p>Partnership Description: Headlines tonight, some entertainment, business content on air. Camera and KTLA reporter in Times newsroom. Cross-media ad sales on a project basis. Internet integrated with newsroom. Various stand-alone radio content relationships.</p>	
Press-Enterprise, KVCR-TV and radio (PBS)	Riverside, CA Los Angeles, CA
<p>Partnership Description: Reporters occasionally on radio.</p>	
KNTV-NBC11, KSTS-Telemundo , KTSF-Ind	San Jose, CA San Mateo, CA
<p>Partnership Description: Camera in newsroom. Newspaper provides its own TV producer. Live Mercury News story reported on NBC11 11 p.m. news. Work some stories, polls together. Live/taped reports on Telemundo, including stories from newspaper's weekly Nuevo Mundo. KTSF presents Cantonese and Mandarin newscasts. Its reporter has desk in newsroom. Newspaper gets headlines on both news programs.</p>	
COLORADO	
Post, KUSA-TV (NBC)	Denver, CO
<p>Partnership Description: Very active. Share budgets. Share some stories. News reporters on KUSA, TV reporters write for Post. KUSA video on Denver Post Online.</p>	

Appendix A: (Continued)

CONNECTICUT	
Courant, WTXN-TV (WB), New England Cable News (not Tribune)	Hartford, CT
Partnership Description: Some news and features shared. Regular cut-ins for cable news. Camera in newsroom with late news headlines. One of more successful cross-media ad sales and promotion efforts. Video for Internet.	
FLORIDA	
Orlando Sentinel, Central Florida News 13, Clear Channel radio, WESH (NBC), WTMO (Telemundo), WVEN (Univision)	Orlando, FL
Partnership Description: 50-50 partners with Time Warner for CFN13. Nation's first central multimedia desk. Targeted cross-media sales. Aggressive re partnerships. Internet integrated with newsroom. Extensive cross-promotion. WESH weather in paper. A progressive new media culture.	
Jackson County Floridan and Dothan Eagle, WMBB-TV (ABC-Panama City)	
	Panama City, FL
Partnership Description: TV bureau reporter in Floridan newsroom writes for paper. Content sharing on special reports. Creative advertising sales efforts targeting beach-goers.	
St. Petersburg Times, WTSP-TV (CBS)	
	St. Petersburg, FL Tampa/St. Petersburg, FL
Partnership Description: Cross promotion, occasional converged sharing.	
Herald, WTVJ (NBC)	
	Miami, FL
Partnership Description: Camera in newsroom, some news sharing.	
Florida Times-Union, WJXX-TV (ABC), WTLV-TV (NBC)	
	Jacksonville, FL
Partnership Description: Headlines tonight, cross promote news, building TV set in newspaper newsroom	
Sun Sentinel, Miami, WFOR-TV (CBS), W. Palm, WXEL-TV (NPR)	
	Miami, FL
Partnership Description: Headlines tonight, occasional projects. Sun-Sentinel does news for WXEL. Camera in newsroom. Single manager over newspaper, TV and Internet.	

Appendix A: (Continued)

Herald-Tribune, Six News Now (SNN)	Sarasota, FL
Partnership Description: Could well be the "most converged," thanks to committed leadership, one manager over all media, common newsroom, paper's ownership of cable news operation.	
Tribune, WFLA-TV (NBC), TBO	Tampa, FL
Partnership Description: One of most converged. Helped greatly by new, common facility and extremely committed leadership (locally and corporate). Strong cross-selling success. Still not satisfied with progress.	
GEORGIA	
Opelika-Auburn News, WRBL-TV (CBS-Columbus, GA)	Columbus, GA
Partnership Description: Working together on political coverage. TV teases tomorrow's headlines. Some advertising initiatives.	
Chronicle, all three local network stations, Chronicle, all three local network stations	Augusta, GA
Partnership Description: "News Headlines at 11 p.m." on WRDW-TV (CBS). Community outreach and advertising with all three stations.	
IOWA	
Quad City Times, KWQC (NBC)	Quad Cities, IA
Partnership Description: Talkbacks. TV reporters contributing stories to paper. Times provides local news "Afternoon Edition" at www.qctimes.com to drive web traffic.	
Gazette, Iowa City Gazette, KCRG-TV (ABC)	Cedar Rapids, IA Iowa City, IA
Partnership Description: Newspaper, TV collaboration on major news stories. Some cross selling. Jointly sponsor community events.	
ILLINOIS	
Tribune, WGN-TV (WB), WGN radio, Web. Also created cable partner CLTV.	Chicago, IL
Partnership Description: Sharing of content and video. Tribune has TV news stage in center of newsroom w/ multiple cameras. Cross-media ad sales for print, cable, TV, Internet. Possibly the most extensive initiative.	

Appendix A: (Continued)

Sun-Times, WFLD-TV (Fox)	Chicago, IL
Partnership Description: Headlines tonight. Polling	
Daily Herald, WBBM radio, WMAQ-TV (NBC)	Chicago, IL
Partnership Description: Daily Herald provides news updates for WBBM. Headlines tonight on WMAQ.	
The Pantagraph, WEEK Television	Bloomington, IL Peoria, IL
Partnership Description: Shares news between both newsrooms. WEEK publishes headlines of stories in the next day's Pantagraph to promote the paper and extend their local story count. Also teamed up to promote local community events, such as the Red Cross blood drive.	
IOWA	
Moline Dispatch, Rock Island Argus, WQAD-TV (ABC)	Moline, IL Rock Island, IL Quad Cities, IA
Partnership Description: Camera in newsroom, occasional "converged" pieces	
ILLINOIS	
Moline Dispatch, Rock Island Argus, WQAD-TV (ABC)	Moline, IL Rock Island, IL Quad Cities, IA
Partnership Description: Camera in newsroom, occasional "converged" pieces	
INDIANA	
Star, WTHR-TV (NBC)	Indianapolis, IN
Partnership Description: Star headlines on TV, some sharing of news projects. Star staffers on TV. Training for reporters who go on the air. WTHR reporter and photographer assigned to Star's North Bureau.	
Tribune, WSBT (CBS)	South Bend, IN
Partnership Description: Very early stages.	
KANSAS	
Capital-Journal, CJOnline, WIBW radio (Also has non-family TV partner.)	Topeka, KS
Partnership Description: Committed, aggressive C-J leadership results in frequent cross-platform activities. CJOnline is one of U.S.'s top websites.	

Appendix A: (Continued)

Capital-Journal, CJOonline, KSNT-TV (NBC)	Topeka, KS
Partnership Description: KSNT often interviews C-J reporters on the air; other content sharing. Many community projects. (See earlier reference under family relationships.)	
Journal-World, Channel 6, World Online	
Lawrence, KS Kansas City, MO	
Partnership Description: Beautiful new common newsroom. Small cable news channel. Fully integrated with Web. Multimedia desk. Ad sales success. Dynamic new online leadership.	
MISSOURI	
Journal-World, Channel 6, World Online	Lawrence, KS Kansas City, MO
Partnership Description: Beautiful new common newsroom. Small cable news channel. Fully integrated with Web. Multimedia desk. Ad sales success. Dynamic new online leadership.	
KENTUCKY	
WKCT - AM, WBGN - AM, WBKO -TV, The Daily News	Bowling Green, KY
Partnership Description: Related Links: BGDailyNews.com BowlingGreenJobs.com BowlingGreenLiving.com BowlingGreenAuctions.com SoKYPublicNotices.com	
LOUISIANA	
Advocate, WBRZ-TV	Baton Rouge, LA
Partnership Description: In early stages.	
MASSACHUSETTS	
Globe, New England Cable News	Boston, MA
Partnership Description: Provides news content.	
MARYLAND	
The Baltimore Sun, WMAR-TV	Baltimore, MD
Partnership Description: camera in newsroom, content sharing between newsrooms; joint sales and marketing efforts.	
MICHIGAN	
Gazette, WMMT (CBS)	Kalamazoo/ Grand Rapids, MI
Partnership Description: Partnered on some stories, movie reviewer on air. Weather school. Partnership terminated.	

Appendix A: (Continued)

NORTH CAROLINA	
Observer with both NBC6 and WBT(CBS)	Charlotte, NC
Partnership Description: Limited partnership, with sharing of some news projects and standing features and web site links with NBC. Occasional ad and promotional projects with WBT, "Tomorrow's Headlines Tonight" and weather Q&A by TV staff.	
NORTH CAROLINA	
News & Observer, WRAL-TV (CBS), News 14 (cable)	Raleigh, NC
Partnership Description: Combined effort creates stormtracker.com, website for weather buffs. Nightly talkbacks. Some joint projects. Govt. reporters do weekly cable talk show.	
NORTH DAKOTA	
Forum, WDAY-TV (ABC), WDAY radio, In-Forum.com	Fargo, ND
Partnership Description: Lots of newspaper-radio cooperation and some cross-selling efforts.	
NEW MEXICO	
Tribune, KRQE-TV (CBS)	Albuquerque, NM
Partnership Description: Websites are linked. Camera in newsroom. KRQE weather in paper. Some shared content.	
NEW YORK	
Newsday, WPIX (WB)	Long Island, NY New York, NY
Partnership Description: Headlines tonight, some features, TV weather in paper. Some cross-media ad sales. Camera in newsroom. WPIX L.I. Bureau in Newsday office. Cable and radio partners.	
NEW YORK	
Star-Gazette, WETM Channel 18	Elmira, NY
Partnership Description: Star-Gazette headlines appear on WETM's nightly and weekday morning news broadcasts. The Star-Gazette and WETM co-produce a weekly public-affairs show, Twin Tiers Weekly. WETM's health reporter contributes a weekly print column and the station also provides local weather forecasts for the Star-Gazette. The station produces a news segment in conjunction with the Star-Gazette's monthly "Our Towns" series. The partners also co-market other events.	
NEW YORK	
WOKR-TV, WXXI-TV	Rochester, NY
Partnership Description: Weather in the paper, headlines on TV, newspaper personnel on TV, joint projects	

Appendix A: (Continued)

OHIO	
Daily News, WHIO-TV (CBS), web	Dayton, OH
Partnership Description: Occasionally work together on projects. Cross promote. Planning to install camera in Daily News newsroom.	
Brown Pub. Co. - North Group, WDTN TV	
	Troy, Piqua, Sidney, OH Dayton, OH
Partnership Description: Share news, weather and sports information. Cross promote stories and exclusive data. Associate Editor John Secor reports on air once a week from a variety of newspaper newsrooms and community locations. Station identifies content shared by partner newspapers.	
OKLAHOMA	
The Oklahoman, KWTW NEWS 9, Citadel Radio Stations	Oklahoma City, OK
Partnership Description: NewsOK is a joint website serving all three entities: The Oklahoman, NEWS9 and several Citadel Radio stations within our market, primarily, WKY Talk Radio. Related Links: http://www.Newsok.com	
PENNSYLVANIA	
Herald Standard, (HSTV) Herald Standard TV (leased access cable)	Uniontown, PA Pittsburgh, PA
Partnership Description: Local C-Span model.	
SOUTH CAROLINA	
Florence Morning News, WBTW-TV (CBS)	Florence-Myrtle Beach, SC
Partnership Description: Some joint special projects. Jointly sponsored a gubernatorial debate. Joint polling, coverage. Joint sales, marketing, promotion.	
TENNESSEE	
Chattanooga Times Free Press/ Fox61	Chattanooga, TN
Partnership Description: Shared weather in paper, on web; web video; headlines	
The Tennessean/WTVF (CBS)	
	Nashville, TN
Partnership Description: Limited sharing of news video/headlines	
TEXAS	
American-Statesman (Cox) and KVUE (ABC/Belo)	Austin, TX

Appendix A: (Continued)

Partnership Description: Low-key relationship with camera in newsroom, some sharing of news, weather and cross-promotion.	
Morning News, WFAA-TV (ABC), Dallasnews.com, wfaa.com Also created cable partner TXCN-TV.	Dallas, TX
Partnership Description: DMN, WFAA newsrooms in constant contact. Regularly exchange information, share reporting. Regular joint projects. Belo TV stations in Dallas, Austin, Houston and San Antonio also contribute.	
Star-Telegram, NBC5 (KXAS-TV / NBC/GE)	Ft. Worth, TX
Partnership Description: Limited relationship with sharing of some news and promotion.	
Chronicle, KHOU-TV (CBS)	Houston, TX
Partnership Description: Talkbacks, small projects. Joint fundraiser for storm victims. Chronicle uses KHOU video on web. Early advertising efforts.	
Express, KENS-TV (CBS)	San Antonio, TX
Partnership Description: Early in process.	
UTAH	
Deseret News, KSL-TV (NBC) , KSL radio, web	Salt Lake City, UT
Partnership Description: Deseret News reporters on KSL radio. KSL-TV and DN reporters occasionally work together on stories.	
VIRGINIA	
Lynchburg (Va) News & Advance, Danville Register & Bee, WSLs (NBC)	Roanoke-Lynchburg , VA
Partnership Description: Regularly work together on breaking news and projects. Implementing converged reporter training plan. WSLs produces daily news update for local radio station.	
TENNESSEE	
Bristol (Va) Herald Courier, WJHL-TV (CBS-Johnson City, Tn)	Bristol, VA Johnson City, TN
Partnership Description: Some shared breaking news, twice monthly shared features. Strong cross promotion sponsoring community events. Some cross-selling.	

Appendix A: (Continued)

VIRGINIA	
Bristol (Va) Herald Courier, WJHL-TV (CBS-Johnson City, Tn)	Bristol, VA Johnson City, TN
Partnership Description: Some shared breaking news, twice monthly shared features. Strong cross promotion sponsoring community events. Some cross-selling.	
Daily Press, WAVY-TV (NBC)	Newport News, VA
Partnership Description: Headlines tonight, some shared content.	
WFLS, WYSK, WWUZ, Adelpia Channel 3, The Free Lance-Star	Fredericksburg, VA Spotsylvania, VA
Partnership Description: Newspaper & radio stations post breaking news to Fredericksburg.com's homepage throughout the day. Web news team works with local TV news staff to share coverage of breaking events and sharing video.	
Virginian-Pilot, WVEC-TV (ABC) Cox Communications cable, Pilot Online	Norfolk, VA
Partnership Description: Cable runs jointly prepared news, features on "Pilot 13 News" and re-runs WVEC's news. Also, other newspaper content.	
WISCONSIN	
Journal, WTMJ-TV	Milwaukee, WI
Partnership Description: Headlines tonight and some sharing of content for web. Cross-promotion on larger projects.	

Note. From *Convergence Tracker Search Page* by James Gentry. Copyright 2004 by The Media Center at the American Press Institute. (Available on The Media Center Web site at <http://www.americanpressinstitute.org/convergencetracker/>). Adapted with permission.

Appendix B: Selection of cross-owned newspaper-television
organizations in the U.S.

Company	Location
ARIZONA	
Arizona Republic, KPNX (Gannett)	Phoenix, AZ
CALIFORNIA	
LA Times, KTLA (Tribune Company)	Los Angeles, CA
CONNECTICUT	
Courant, WTIC (Tribune Company)	Hartford, CT
FLORIDA	
Tampa Tribune, WFLA (Media General Inc.)	Tampa, FL
ILLINOIS	
Chicago Tribune, WGN (Tribune Company)	Chicago, IL
NORTH DAKOTA	
Forum, WDAY (Forum Communications)	Fargo, ND
NEW YORK	
NY Post, WNYW (News Corp. Ltd.)	New York, NY
Newsday, WPIX (Tribune Company)	New York, NY
TEXAS	
Morning News, WFAA (A.H. Belo Corp.)	Dallas, TX
WISCONSIN	
Milwaukee Journal Sentinel, WTMJ (Journal Communications)	Milwaukee, WI

Note: From "Viewpoint diversity in cross-owned newspapers and television stations: A study of news coverage of the 2000 presidential campaign," by David Pritchard, 2002, Media Ownership Working Group, No. 21709. (Available on the Federal Communications Commission Web site at http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-226838A7.txt.) Copyright 2002 by the Federal Communications Commission.

Appendix C: Multimedia and Interactive Coding Categories

Multimedia components

Streaming video:	Video that loads from a Web page by placing several frames of video into a buffer on the computer's hard drive, and then beginning to play the sound, as more files are placed into the buffer (Dibean and Garrison, 1999; Pavlik, 1998)
Streaming audio:	Sound that loads from a Web page by placing several frames of sound into a buffer on the computer's hard drive, and then beginning to play the sound, as more files are placed into the buffer (Dibean and Garrison, 1999; Pavlik, 1998)
Photo:	Photographical representation of something (Kweon, 2000)
Animated Graphic:	Graphical representation of something that has the illusion of movement (Kweon, 2000)
Static graphic:	Fixed or stationary graphical representation of something (Kweon, 2000)

Appendix C: (Continued)

Other - Slideshow: Microsoft PowerPoint presentation

Other - Photo gallery: Electronic album of photographic representations

Interactivity components

Live chat: Area on a Web page that allows for real-time discussions by readers (Dibean and Garrison, 1999)

Online poll or survey: Form on a Web page that allows the reader to submit an answer to a question and view the results (up to and including the user) on a linked page (Dibean and Garrison, 1999)

Online discussion forum: An area on a Web page that allows the posting of continuous discussions by readers about any topic (Dibean and Garrison, 1999)

Interactive quiz or game: An online device that tests the users' knowledge of facts and issues relating to stories using an interactive interface (Schultz, 1999)

Search tool: Device on a Web page that allows users to enter keywords to find articles or other

Appendix C: (Continued)

information on the Web site, or any device designed to help the user find related information easier (Dibean and Garrison, 1999)

Digital postcard: Tool that allows readers to send entire news stories or snippets of information to entice the reader to read more (Schultz, 1999)

Virtual tour: Place on a Web site that guides readers through Web pages or stories in a specific order

Related Web links: Internet hyperlinks or pullouts of information from other Web stories or sources (Dibean and Garrison, 1999)

Other - feedback form: Device that allows users to send comments to either the author or the editor by entering comments into fields and hitting the submit button

Other - interactive map: Map that allowed users to zoom in and out for more or less details

Other - interactive stock ranker: Sorted organizations' stock rankings based on criteria created by the user