

# Chapter 40

## Interface Trends in Human Interaction, the Internet of Things, and Big Data

William J. Gibbs  
Duquesne University, USA

### ABSTRACT

*In this chapter, the author examines trends in today's news-orientated interfaces and the impact of digital interfaces on news consumption. Digital interfaces will be differentiated from traditional informational sources such as newspapers and television news. Additionally, the author explores several major characteristics or trends germane to today's news interfaces and their implications for how people consume news and, more generally, for how they transform information services: 1) rapid innovation, 2) interactivity, 3) social, 4) standardization, 5) scale, 6) media convergence and, 7) the internet of things and big data.*

### INTRODUCTION

The Web and other networked-based services are primary vehicles for news and information dissemination. In 2008, Kohut, (2008, p. 21) reported that, "Thirty-seven percent of people today, including more than half of Internet users, obtain news online whereas ten years ago only 13% of the public and 35% of Internet users went online for news." More recently, Conaghan (2015, p. 1) noted that greater than 93% of men and 92% of women between the ages of 25-44 who went online in August 2015 engaged with newspaper content and half of this online audience use mobile devices (smartphones or tablets) to get news. A majority of major news websites are finding that most of their traffic comes from mobile devices rather than from desktop computers (Mitchell, 2015). Due in large part to mobile connectivity, people can obtain news instantaneously and become aware of worldwide events at any time of day or in any location around the world. It is estimated that there are over 7 billion mobile-cellular subscriptions (ICT, 2015), which enable people to access the news wirelessly on mobile devices, making news and information services portable, personalized, and participatory (Purcell, Rainie, Mitchell, Rosenstiel & Olmstead, 2010). The transformations taking place in news and information services magnify questions

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regarding the influence networked-based services have on newsreaders (Santana, Livingstone, & Cho, 2011). Researchers indicate that media are not solely transmitters of information, but they influence the process of thought (Carr, 2008; Purcell et al., 2010).

Online news content is frequently represented on digital displays as a highly dynamic interface characterized by a proliferation of media and interactivity that supersedes what is found in traditional informational sources such as newsprint or television news. Digital interfaces or points-of-contact through which people experience news and information services have never been so diverse or transformative. They present complex visual landscapes comprised of and supported by multimedia, communications, and networking technologies. Pervasive worldwide, they afford people an unprecedented degree of functionality and access to news, information services, and other people. The actions or ways in which users interact with modern interfaces are diverse and include behaviors such as swiping, scaling, dragging scrolling, hovering, and flipping (Sundar, Bellur, Oh, Xu & Jia1, 2014). Interfaces are a foundational technology that has helped instigate tectonic shifts in news and information consuming behavior, journalistic reporting, and news preparation and distribution, the impact of which is not fully understood.

In this chapter, I examine trends in today's news-orientated interfaces and the impact of digital interfaces on news consumption. Digital interfaces will be differentiated from traditional informational sources such as newspapers and television news. Additionally, I will explore several major characteristics or trends germane to today's news interfaces and their implications for how people consume news and, more generally, for how they transform information services: a) rapid innovation, b) interactivity, c) social, d) standardization, e) scale, f) media convergence and, g) the Internet of Things and Big Data.

## **TRADITIONAL MEDIA FORMS**

Access to the news and one's understanding of it are influenced by interface elements. When people have contact with news, news organizations preplan or design the visual, auditory, conceptual, and functional aspects of that experience or point-of-contact. The manifestation of this design comprises an interface intended to help people access news and derive meaning from it. For example, when reading a newspaper, the printed document, type, content organization, headings, writing style, the proximity of page elements, the surrounding context, groupings and placement, and page numbering establish a context that guides readers' attention and provides them information about how to use the newspaper to glean information. One can imagine how readers would fare if a paper suddenly removed all headlines, page numbers, table of contents, and used disparate type. Some authors contend that the typographical design of newspaper makes reading easier and enhances comprehension relative to news content published on the web (Shafer, 2011). The inherent attributes of newsprint and television news media greatly influence how people access and comprehend news as well as how news is reported. Pippis, Walter, Endres, and Tabatcher (2009), for example, report research showing that content recall for television and radio news was lower than recall of textual information. Santana et al. (2011) found that news consumption varied based on the frequency, duration, and visual content of a news presentation. Access to a news story and learning from it is directly affected by many contextual features that make up the social and behavioral state of the environment in which a person acquires news (DeFleur, Davenport, Cronin, & DeFleur, 1992, p. 1011).

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