

Rethinking the History and Defining Characteristics of Online Journalism

Zhaoxun SONG

*Hong Kong Hang Seng Management College,
HKSAR, China*

howardsong@hsmc.edu.hk

Abstract: Literature on online journalism abounds but some very basic questions such as the history, the definition, and the defining characteristics of online journalism are underexplored. This paper identifies three major versions of online journalism history in the academia: the 1969 version, the 1993 version, and the 1952 version. It conceptualizes the development of online journalism as consisting of the current distinct phases: online journalism via television channels, online journalism via computers and online journalism via mobile devices. The definition of online journalism and its defining characteristics are addressed accordingly to distinguish online journalism from traditional journalism. It also documents and verifies a series of important historical events in the course of online journalism development, which enriches the pool of knowledge and informs online journalism education.

Keywords: Online journalism, History, Characteristics, Development phases

1. Introduction

Online journalism came into being only in the 20th century as the product of the technology of digitization and internet. But the development of various forms of online journalism is so fast and fascinating that the world pays more and more attention to its rich applications, great potentials and revolutionary impacts on our society. Many professionals and scholars have devoted a lot of their time and energy into the research of online journalism, as evidenced by the large number of books and papers published so far in this discipline. But some basic questions of online journalism are underexplored and need rethinking about. Online journalism is a very new but very fast-evolving branch of journalism, with academic research about the subject lagging far behind (Kopper et al., 2000). Take the historical starting point of online journalism as an example, a literature review finds very few journal papers and book chapters dealing with the history of online journalism. Even among the scholars who have touched the topic, some claim that online journalism was born in the 1950s; some claim in the 1960s, others say in the 1970s and still others insist the 1990s. There is only a short history of online journalism, but there is still no consensus on when the online journalism started.

As the history of a discipline is the most essential ingredients of the discipline's basic knowledge, this paper, based on a thorough literature review, attempts to identify the most rational version of online journalism history, to trace its historical development, to come up with a synthesized definition of the term, and to summarize its defining characteristics. This paper is, in nature, a literature review of the major versions of history, definitions, and distinguishing characteristics of online journalism but with necessary criticism of the data under review. The literature includes but not limited to academic journal papers, book chapters, articles and historical records in the professional websites. The method of review, interpretation, and analysis of the extant literature is, to some extent, flexible and open because

the purpose of this study is to examine the meaning and value of the literature on online journalism. However, such literature review requires the researcher to “enter into an in depth learning process, to become intimately involved in data collection, and to be a critical editor of texts” (Law et al., 1998).

2. The history of online journalism

Literature on the history of online journalism has been found in very few academic journal papers, but a number of relevant book chapters and lots of journalism and communication websites do attempt to address the topic. However, different people raise different ideas about online journalism and no consensus has been reached on the historical starting point of online journalism.

Based on the thorough review, summary and synthesis of the existing literature concerning online journalism history, three major versions of the birth of online journalism are identified: the 1969 version, the 1993 version and the 1952 version.

2.1 The 1969 version

The first version of online journalism history is the 1969 version. Scholars regard 1969 as the birth year of online journalism because of the two important events: the operation of Arpanet and the founding of CompuServe Information Service in Columbus, Ohio. Arpanet is the forerunner of today's Internet which was to have a revolutionary impact on traditional journalism later. CompuServe Information Service is one of the first consumer online services in the USA whose computer time-sharing service played an important role in the development of online communication.

There are three prominent figures in support of this version: David Shedden, David Carlson, and Christopher Harper.

David Shedden is Library Director of the Poynter Institute's Eugene Patterson Library. He compiled the *New Media Timeline* (<http://www.poynter.org/uncategorized/28684/new-media-timeline-1969/>), which looks at the history of new media and online journalism from 1969 to the present, presented in two parts with parallel sections on “Technology/Services/Social” and “The Media”. The timeline is authoritative and widely cited because it helps preserve the history of new media and online journalism as well as serves as a very useful reference tool for journalists, students, and researchers.

Professor Christopher Harper is author of *And That's the Way It Will Be News and Information in a Digital World* in which he includes *News and Information on the Internet: A Short History* as one of the appendixes at the end of the book, listing 1969 as the birth year of online journalism.

Professor David Carlson is author of the book chapter *The History of Online Journalism in Digital Journalism: Emerging Media and the Changing Horizons of Journalism* edited by Kawamoto. This book chapter documents a lot of important historical facts about online journalism history and is widely cited in academia. Although he clearly claims that “the roots of online journalism lie in 1970” (Carlson, 2003, p31) because he regards Teletext as the beginning of online journalism, Carlson later advanced the timeline of online journalism to the 1960s in *The Online Timeline: A capsule history of online news and information systems* (<http://iml.jou.ufl.edu/carlson/timeline.shtml>), which is also regarded as authoritative and featured in the *Nieman Reports* from Harvard University.

2.2 The 1993 Version

Scholars in support of this version claim the year 1993 should be regarded as the real beginning of online journalism marked by two important events: the release of the beta version of web browser Mosaic and the first journalism website on the internet. The British journalism website (<http://www.journalism.co.uk>) makes the online journalism timeline (<http://www.journalism.co.uk/features/story1753.shtml>), listing the year 1993 as the beginning of

online journalism marked by the invention of Mosaic and the launch of what is believed to be the first journalism site on the internet by the University of Florida's journalism school (Meek, 2006).

Mark Glaser, Vincent Campbell and Mark Deuze are the 1993 version advocates and supporters. Mark Glaser, in his article *Online News Pioneers See Lots of Changes in the First 10 Years* on Online Journalism Review (ORJ), claims that news started being produced for the World Wide Web only in late 1993 with the release of Mosaic as the starting point (Glaser, 2003). Vincent Campbell declares that "it wasn't until the emergence of the World Wide Web in the early 1990s that online journalism was really viable" (Campbell, 2004, p250). In his research paper *Online Journalism: Modeling the First Generation of News Media on the World Wide Web on First Monday*, Professor Mark Deuze theorizes the impacts the global system of networked computers has had on journalism and regards the period starting from 1993 to 2001 as the first generation of news media on the World Wide Web (Deuze, 2001).

2.3 *The 1952 version*

Computer-assisted reporting (CAR) is the use of computer to gather and analyze the data necessary to write news stories. Reporters in the newsroom today are becoming more involved in computer-assisted reporting and online news research than ever before. But is computer-assisted reporting part of online journalism? The answer from most scholars and professors is yes.

In the article *Online Journalism: A Report on Current and Continuing Research and Major Questions in the International Discussion*, Gerd G. Kopper and other two scholars (2000) from The University of Dortmund, Germany, clearly claim that online journalism includes such elements as electronic databank research and computer assisted reporting, although its major emphasis is on the uses of the Internet as a means of communication, as a platform for journalistic endeavours and challenges and as a sea of information.

The online journalism majors in many schools of journalism and communication include Computer Assisted Reporting in their programme curriculum. For example, the E.W. Scripps School at Ohio University offers such specific courses as "Fundamentals of Online Journalism," "Legal Issues of Online Journalism," and "Computer Assisted Reporting" for online journalism major (see Undergraduate Catalog Archive, 2004-05). The module *Computer Assisted Reporting* offered by the Department of Journalism Studies at the University of Sheffield aims to give students the background knowledge and basic technical skills needed to work in online journalism (see JNL308 Web Journalism, 2013).

If computer-assisted reporting is considered as one essential skill or element in online journalism, the history of online journalism should date back to the first time that computers were introduced to the newsroom. Then we can find the very accurate record of the first actual instance of computer-assisting reporting:

"On election night, November 4, CBS News borrowed a UNIVAC to make a scientific prediction of the outcome of the race for the presidency between Dwight D. Eisenhower and Adlai Stevenson. The opinion polls predicted a landslide in favor of Stevenson, but the UNIVAC's analysis of early returns showed a clear victory for Eisenhower. Its sharp divergence from public opinion made newscasters Walter Cronkite and Charles Collingwood question the validity of the computer's forecast, so they postponed announcing UNIVAC's prediction until very late." (see Timeline of Computer History, Computer History Museum, 2013)

We have synthesized the three versions of online journalism history: the 1969 version, the 1993 version and the 1952 version. Although each version has its own rationale, this paper holds that the historical starting point of online journalism is the time when computers were first introduced into newsrooms to assist journalists in their reporting. So November 4, 1952 should be considered the great day for online journalism because it signaled the start of a brand new era of journalism: online journalism.

3. The development phases of online journalism

Some scholars have contributed to the studying of online journalism by tracing the different stages of its historical development (Carlson, 2003; Pavlik, 1997; Pryor, 2002, etc.). The development phases or stages are differentiated by the distinctive characteristics of online news contents, degree of audience participation, immediacy of news delivery, etc. This paper approaches this same issue from a different perspective: dividing the development of online journalism into different distinct phases according to its communication channels.

3.1 The first phase: online journalism via television sets

When the internet was born in 1969, few people had imagined that every member of our society would have computers. So the inventors of online journalism used computers to create and store the information but expected people to view the information on television sets, not computers. Teletext is the first type of online journalism that transmits text and numbers for display on a television screen (Carlson, 2003). The invention was patented by the British Broadcasting Corporation (BBC) in 1971. The information was displayed on television sets through the use of special decoder boxes that either sat on top of the set or built-in chips in order to capture and display the teletext information. On 23 September, 1974, BBC started Ceefax, phonetic for "See Facts" with thirty pages of information (see BBC Archive, 2013). The system became the first teletext service in the world and still runs regularly filling BBC Two's overnight schedule as *Pages from Ceefax*. On 18 April 2012, Britons said farewell to Ceefax after analogue TV signals were switched off across almost the entire country and the world's first teletext service is now only fully available in two regions following latest big digital switchover (Gavaghan, 2012).

Teletext provides useful instant sources of news to customers but the news and information must be very brief to fit on teletext pages and the pages came up very slowly and changed very slowly, which made many people lose patience (Carlson, 2003). In spite of its limitations, teletext was a huge technical advance because it was one of the earliest deliveries of digital information to the home (see BBC Archive, 2013).

Very soon after the invention of teletext, another type of online journalism, Prestel, was created by the British Post Office, whose commercial launch was in early 1979 (Carlson, 2003). It is the world first videotex system: an interactive, computer-based system that electronically delivers text, numbers, and graphics for display on a television set hooked to a dedicated terminal to receive information from a remote database via a telephone line. British newspapers, such as *Financial Times* and *Post and Echo*, began to offer news stories online through Prestel.

Videotex was soon offered in many other countries, for example, France, the United States, Germany, etc. But the technology became "an expensive failure" (Carlson, 2003, p.37) because the services were not only too expensive to attract significant numbers of consumers but also tied up the television set and the telephone.

3.2 The second phase: online journalism via computers

The attempts at delivering online newspapers through television were unsatisfactory. American news media organizations began to focus their eyes on the first generation personal computer users in the early 1980s because there were more than 5 million office and home computers by then (Lin, 2005). Consumer online services were designed from the very beginning to be delivered to home computers, which ushered in another important phase of online journalism: online journalism via computers. The big three leaders in providing online services were Prodigy, CompuServe and America Online (AOL).

Columbus-based CompuServe drove the initial emergence of the online service industry in 1969. It is credited with publishing the first newspaper online in the United States. On July 1, 1980, the *Columbus Dispatch* began transmitting a twice-daily "newspaper" through the CompuServe service and the news

flew into home computers. By the next year, *The Dispatch* and 10 other newspapers and the Associated Press made their news stories available to about 10,000 home-computer subscribers of CompuServe (Feran, 2009).

The Tribune Company of Chicago offered Chicago Online in May 1992 and it was the first newspaper service on America Online (Carlson, 2003). Chicago Online included content from all of its Chicago media properties, including radio, television, and its flagship newspaper, the *Chicago Tribune*. The *San Jose Mercury News*, *Time Magazine*, the *New York Times* and others followed with AOL services.

The Atlanta Journal-Constitution launched *Access Atlanta*, a local news and information service, on March 13, 1994 and became the first newspaper on the Prodigy Internet service. *Access Atlanta* concentrated on highly local information, allowing subscribers to check on recent home sales or access neighborhood crime reports and photos. Later, other newspapers including *Newsweek*, *Consumer Reports* and *Palm Beach Post* went with Prodigy.

However, some news organizations were not satisfied with providing news and information services through the online services. They were searching for ways to deliver their own online newspapers. The invention of Bulletin Board System in 1978 rushed in another wave of online journalism. A Bulletin Board System, or BBS, is a computer system that allows users to connect and log in to the system using a terminal program. Once logged in, a user can perform functions such as uploading and downloading software and data, reading news and bulletins, and exchanging messages with other users, either through email, public message boards, or sometimes via direct chatting.

The pioneer of BBSs run by newspapers was *The Electronic Trib (E-Trib)*, a service launched on December 13, 1990 by *The Albuquerque Tribune* in New Mexico. The most important features of *E-Trib* include providing free access for thirty minutes a day, offering online database of public records, holding chat sessions with newsmakers, public officials and editors, etc. At least thirty US newspapers launched computer BBSs between 1990 and 1994 (Carlson, 2003).

On 12 November 1990, a revolution took place that changed the way we communicate today: the World Wide Web, which was created when Tim Berners-Lee developed the computer language that enabled users to navigate by simply clicking on underlined words called links. But the Web remained in text-only form until February 16, 1993 when Mosaic, the first graphic web browser, was released by the National Center for Supercomputing Applications (NCSA) at the University of Illinois. Online journalism then had many firsts: the first journalism site on the web was launched in November 1993 at the University of Florida; and on January 19, 1994, the *Palo Alto Weekly* in California became the first newspaper to publish regularly on the web (Carlson, 2006); and on March 1, 1994, *The News & Observer* created *NandO.net* and began publishing the *NandO Times* electronic newspaper, which “evolved into the first serious, professional news site on the World Wide Web” (Yelvington, 2005). Other newspapers were quick to notice and were moving to the web.

3.3 The third phase: online journalism via mobile devices

Traditionally, a live broadcast at a breaking news scene involves a lot of time and money. A very expensive outside broadcast truck, a crew of at least two, tripods, broadcast cameras or cables are needed. But now, with a connected mobile phone, journalists can broadcast live video within seconds at a fraction of the cost. On 17 February 2004, *The New York Times* published a photograph taken with a mobile phone for the first time on page one, which marked a milestone in the use of the mobile phone for newsgathering (Quinn, 2009). On 20 August 2009, television reporter Jeremy Jojola used a mobile phone and free web-based software to file a live report for KOB-TV in Albuquerque, New Mexico (Quinn, 2009).

Smartphones today are, in fact, powerful mini-computers. Mobile users can send text, emails or instant messages, take pictures, record or watch video, listen to music, play games, look for directions and search for locations, etc, in addition to making voice phone calls. The news organizations came to realize the increasing importance and popularity of delivering the products of journalism via mobile

devices as more users have smartphones. As a result, mobile journalists came into being. A mobile journalist, often abbreviated as *mojo*, uses a mobile phone to gather and distribute news (Quinn 2009).

Mobile technology is becoming an essential part of the professional journalist's tool-kit and mobile devices such as smart-phones, iPad and other personal digital assistant (PDA) gadgets are changing the landscape of journalism. Innovative news organizations such as Reuters in London headquarters equip their journalists with a mobile journalism toolkit to deliver images, videos, and texts to the web.

3.4 The fourth phase: still on the way

New information and communication technologies are emerging and changing the ecosystems of journalism. For example, robots have been crunching data and writing stories with a cold, metallic tone for the last few years (South China Morning Post, 2015). Chinese social media giant Tencent published its first business report written by a robot in September, 2015. The flawless 916-word article was completed in just one minute by Dreamwriter, a Tencent-designed robot journalist that apparently has few problems covering basic financial news. Robo-journalism attracts a lot of coverage nowadays. However, the robot can only write hard news but not in-depth or feature stories. Media professionals don't think that the robot can take place of human journalists.

Some news organizations are offering viewers a different kind of look at the places to which reporters travel – a 360-degree shot made possible through virtual reality (VR). Virtual reality news opens the door to boundless possibilities allowing viewers to be anywhere at any time and takes storytelling to the next level. For example, ABC News VR launched a 360 degree virtual reality video that transports viewers to the streets of Damascus, a city largely cut off from the outside world (Bernstein, 2015).

Online journalism based on data collected by sensors, cameras and drones also has the potential to reinvent local journalism in terms of weather, traffic and local events sourced from social media (Newman, 2016). However, no one can tell what the next distinct development phase of online journalism will be, although online news is being created and disseminated through innovative media (channels).

4. Definition and characteristics of online journalism

Online journalism is also known as digital journalism, web journalism, cyber journalism, new media journalism, multimedia journalism, etc. Some scholars try to differentiate these terms but actually these terms are used interchangeably and mean the same thing. Among them, online journalism and digital journalism are the two most frequently used terms.

Quite a few scholars have made their contributions to the definition of online journalism. We find that the definition by Kawamoto (2003, p.4) is more detailed and specific:

“the use of digital technologies to research, produce and deliver (or make accessible) news and information to an increasing computer-literate audience”.

It is very advisable to adopt the important word “*research*” in this definition so as to include such essential elements as computer assisted reporting. But as we have illustrated earlier in the paper that online journalism is no longer confined to the use of computers, the attributive phrase “*computer-literate audience*” seems out of accord with the times. The online journalism technology today, such as digital TV programme, has benefited not only the informational technology literates but also traditional media users. Based on the definition by Kawamoto, this paper proposes to define the term as:

the practice of using digital technologies to research, produce and deliver news to diverse audiences.

One of the ways to distinguish online journalism from other types of journalism is to identify its

defining characteristics. Many professionals and scholars have tried to summarize the most distinctive characteristics of online journalism (Deuze, 2003; Dimitrova and Neznanski, 2006; Newhagen and Rafaeli, 1996; Singer, 1998; Pavlik, 1997 and 1999) and different versions of distinguishing characteristics of online journalism are suggested. But some characteristics, for example, “the unlimited capacity to store news stories” or “archival feature of information”, “hypertextuality” or “non-linearity in news storytelling”, are not defining characteristics but general characteristics of online journalism or, to be more exact, internet. Although “personalization” or “customization of content” is regarded by some scholars as an important characteristic of online journalism, it is, in fact, a form of user-to-system interactivity that uses a set of technological features to adapt the content, delivery, and arrangement of a communication to individual users’ preferences (Thurman & Schifferes, 2012).

This paper claims the following four defining characteristics of online journalism: digitality, multimodality, interactivity, and immediacy.

4.1 Digitality

Online journalism, in the first place, is digital. All the information or data in news media is encoded in numbers, which is in marked contrast to analogue media where all input data is converted into another corresponding physical object. Digital information is programmable, alterable, and subject to algorithmic manipulation (Manovich, 2001).

4.2 Multimodality

Multimodality in the context of online journalism refers to the convergence of traditional media formats - text, graphics, sound, voice, and (still and moving) images - into a common digital form (Dahlgren, 1996). The multimedia nature is an inherent characteristic of online journalism which makes it functionally different from traditional journalism.

4.3 Interactivity

Compared with traditional media’s unidirectional transmission of news and information with restricted feedback mechanism, online journalism provides users with greater levels of interactivity or user-control. Users are allowed to comment on stories and participate in discussion forums as well as contribute to the content production by submitting photos and videos.

4.4 Immediacy

Compared to traditional journalism, one most important feature of online journalism is immediacy: the news is being delivered faster than ever, often within minutes or even in real time. There is virtually no lag between online news delivery by the communicator and news consumption by the audience. Therefore, immediacy of online journalism can be simply defined as ‘live’ reporting in provision of news in a continuous pattern (Eriksen & Ihlström, 2000).

5. Implications of the findings on online journalism education

According to some scholars, journalism studies show a limited interest in history and history is just a sort of detachable subfield in journalism research (Nerone, 2013). But history is not about the past but about the relationship between the past and the future. Elliot King (2011) believes that knowledge of journalism history is needed in order to understand the culture of journalism after the demise of traditional forms and institutions of journalism. Mitchelstein and Boczkowski (2009) argue that the research on online journalism lacks historical dimensions. Online Journalism programs at journalism schools should not only address such emerging concepts and forward-looking applications as media convergence, backpack journalism, blogging and tweeting, they should also equip journalism students

with professional consciousness and context, which is important for them to understand the evolution of the form and content of journalism and the impacts of new media on society.

It is more urgent to make a study of online journalism history today than ever before because one of the problems to research on the history of online journalism is the unavailability of the digital documents of the early years because of the obsolescence of the format that contains digital information and the obsolescence of programs, browsers, and operational systems (Higgs, 1998; Diaz Noci, 2013).

This paper, based on a detailed review of the literature, attempts to document the history from the very moment of its social transcendence of some early manifestations because they prepared the paths toward what would later be online journalism. It identifies three major versions of online journalism history in the academia and conceptualizes the development of online journalism as consisting of distinct phases. The findings not only inform online journalism education but also enrich the knowledge pool of the related discipline.

It is almost a mission impossible to summarize the defining characteristics of online journalism because different development phases or stages of online journalism are corresponded with different characteristics. For example, teletext, an electronic system that uses a modified television set to display computer-based information, is regarded as a forerunner of online news media. However, it is not interactive because the viewer cannot send messages directly back to the computer that stores and disseminates the information. The system doesn't have other characteristics of online journalism today, either, such as multimediality and immediacy. It should be made clear that the four defining characteristics of online journalism identified in this paper, namely, digitality, multimediality, interactivity, and immediacy, are characteristics of online journalism today. Online journalism is such a recent phenomenon that is in the ongoing process of evolution. It is not at all surprising that online journalism is to have other distinctive characteristics in the future.

The review of literature also provides an opportunity to rethink some of the fundamental concepts in the study of the characteristics of online journalism. The first online journalism researchers were driven by technological determinism (Boczkowski, 2004; Domingo, 2006) but the techno-approach lacks commonly accepted definitions of such important concepts as interactivity and multimedia, which creates confusion as to what these characteristics represent and how they differ from one another (Steenen, 2011). This paper defines the four distinctive characteristics (digitality, multimediality, interactivity, and immediacy) by examining the conceptualization processes and implications of these slippery terms from a broader contextualization and attempts to make these concepts better fit the current state of online journalism.

References

- Alyssa Bernstein (Sep 16, 2015). *Introducing ABC News VR*. Retrieved on August 31, 2016 from http://abcnews.go.com/Press_Release/introducing-abc-news-vr/story?id=33792925
- BBC Archive (2013). Test Cards and Ceefax Retrieved on August 31, 2016 from: http://www.bbc.co.uk/archive/testcards_ceefax.shtml?chapter=9
- Boczkowski, P.J. (2004). *Digitizing the News: Innovation in Online Journalism*. Cambridge, MA: MIT Press.
- Bucy, E. P. (2004). Second Generation Net News: Interactivity and Information Accessibility in the Online Environment. *The International Journal on Media Management*, 6(1/2), 102-113.
- Cailliau, R, Gillies, J. (2000). *How the Web Was Born: The Story of the World Wide Web*. Oxford, UK: Oxford University Press.
- Campbell, V. (2004). *Information Age Journalism: Journalism in an International Context*. London: Hodder Arnold.
- Carlson, D. (2003). The History of Online Journalism, in Kawamoto, K. (ed.) *Digital Journalism: Emerging Media and the Changing Horizons of Journalism*. Lanham: Rowman. & Littlefield Publishers.
- Carlson, D. (2006). *The Online Timeline: A capsule history of online news and information systems*. Retrieved on August 31, 2016 from <http://iml.jou.ufl.edu/carlson/timeline.shtml>
- Company History, The News & Observer Publishing Company. Retrieved on August 31, 2016 from <http://www.newsobserver.com/2009/08/13/10439/company-history.html>

- Computer History Museum (2013). Timeline of Computer History. Retrieved on August 31, 2016 from <http://www.computerhistory.org/timeline/?category=ppc>
- Dahlgren, P. (1996). Media Logic in Cyberspace: Repositioning Journalism and its Publics. *Javnost/The Public* 3(3), 59–72.
- Deuze, M. (2001). Online journalism: Modelling the first generation of news media on the World Wide Web. *First Monday* 6(10). Retrieved on August 31, 2016 from http://www.firstmonday.org/issues/issue6_10/deuze/index.html.
- Deuze, M. (2003). The web and its journalisms: considering the consequences of different types of newsmedia online. *New Media & Society*, 5(2), 203-230.
- Díaz Noci, J. (2013). A History of Journalism on the Net: A taste of the art and some methodological trends. *Revista internacional de Historia de la Comunicación*, 1, 253-272.
- Dimitrova, D. V., and Neznanski, M. (2006). Online journalism and the war in cyberspace: A comparison between U.S. and international newspapers. *Journal of Computer-Mediated Communication*, 12(1), article 13.
- Feran, T. (2009). The history of CompuServe. Retrieved on August 31, 2016 from http://www.dispatch.com/content/stories/business/2009/09/06/COMPUSERVE_ADIOS.ART_ART_09-06-09_D1_7AEVBDQ.html
- Gavaghan, J. (2012). 'RIP Ceefax': *Tweeters mourn death of BBC's teletext service after analogue TV signal is turned off in big digital switchover*. Retrieved on August 31, 2016 from: <http://www.dailymail.co.uk/news/article-2131613/RIP-Cee-fax-Twitter-mourns-death-BBC-teletext-analogue-TV-turned-digital-switchover.html#ixzz29whp0azw>
- Glaser M. (2003). For Pioneers of Web Journalism, the Future Is Still Full of Surprises. Retrieved on August 31, 2016 from <http://www.ojr.org/ojr/glaser/1063325454.php>
- Gerd G. P., Albrecht, K & Andrea, C. (2000): Online Journalism - A Report on Current and Continuing Research and Major Questions in the International Discussion. *Journalism Studies*, 1(3), 499-512.
- Eriksen, L. B. and Ihlström, C. (2000) Evolution of the Web News Genre - The Slow Move Beyond the Print Metaphor, in *Proceedings of the 33rd Hawaii International Conference on System Sciences-Volume 3 - Volume 3*.
- Fulcher, G. (2009). Language Testing Resources. Retrieved February 5, 2013 from: <http://languagetesting.info>
- Gillies, J. and Cailliau, R. (2000). *How the Web was Born: The Story of the World Wide Web*. Oxford, UK: Oxford University Press.
- Glaser, M. (2003). *Online News Pioneers See Lots of Changes in the First 10 Years* Retrieved on August 31, 2016 from <http://www.ojr.org/ojr/glaser/1062631458.php>
- Harper, C. (1998). *And That's the Way It Will Be: News and Information in a Digital World*. New York: New York University Press.
- Higgs, E. (1998). *History and Electronic Artefacts*. Oxford: Clarendon Press.
- JNL308 Web Journalism (2013). Retrieved on August 31, 2016 from http://www-online.shef.ac.uk:3001/live/owa/web_cal.cal_unit_detail?unit_code=JNL308&ctype=SPR+SEM&start_date=30-SEP-02&mand=Optional
- Karlsson, M. (2007) Immediacy of Online News: Journalistic Credo Under Pressure, in *Proceedings of International Communication Association Conference*, San Francisco, CA.
- Kawamoto, K. (2003). *Digital journalism: emerging media and the changing horizons of journalism*. Maryland: Rowman & Littlefield.
- King, E. (2008). The Role of Journalism History, and the Academy in the Development of Core Knowledge in Journalism Education. *Journalism & Mass Communication Educator*, 63(2), 166-178.
- King, E. (2011). In defense of the study of journalism history. *Gateway Journalism Review*, 41(321), 16-17.
- Kopper, G. G., Kolthoff, A., & Czeppek, A. (2000). Research review: Online journalism-a report on current and continuing research and major questions in the international discussion. *Journalism Studies*, 1, 499–512.
- Law, M., Stewart, D., Letts, L., Pollock, N., Bosch, J., & Westmorland, M. (1998). *Guidelines for Critical Review Form- Qualitative Studies*. McMaster University.
- Lin H.F. (2005). The Electronic Editing and Electronic Publication: Concepts, origins, and Early Development. *Publishing Science*. the 5th Issue (in Chinese).
- Manovich, L. (2001) *The language of new media*. Cambridge, Massachusetts: The MIT Press.
- Meek, C.(2006).The online journalism timeline. *Online Journalism Review*. Retrieved on August 31, 2016 from <http://www.journalism.co.uk/features/story1753.shtml>
- Nerone, J. (2013). Why Journalism History Matters to Journalism Studies. *American Journalism*, 30(1), 15-28.
- Newhagen, J.E., Rafaeli, S. (1996). Why communication researchers should study the Internet: a dialogue. *Political Communication*, 46(1), 4-13.
- Nic Newman (2016). *Media, Journalism and Technology Predictions 2016*. Oxford: the University of Oxford.
- Paulussen, S. (2004). Online News Production in Flanders: How Flemish Online Journalists Perceive and Explore the Internet's Potential. *Journal of Computer-Mediated Communication*, 9, 00. doi:10.1111/j.1083-6101.2004.tb00300.x

- Pavlik, J. V. (1997). The future of online journalism. *Columbia Journalism Review*, 36(2), 30-38.
- Pavlik, J. V. (1999). New media and news: implications for the future of journalism. *New Media & Society*, 1(1), 54-59.
- Preston A. E. (1998). *Online Journalism and Media Convergence: Empty Promises for Small Markets?* Retrieved on August 31, 2016 from <http://list.msu.edu/cgi-bin/wa?A2=ind9812a&L=aejmc&T=0&P=1243>
- Pryor, L. (2002). The Third Wave of Online Journalism. *Online Journalism Review*, Retrieved on Aug. 31, 2016 from <http://www.ojr.org/ojr/future/p1019174689.php>
- Shedden, D. (2004). New Media Timeline. *Poynter Online*. Retrieved 1 November 2006 from <http://www.poynter.org/research/nm/timeline>
- Steensen, S. (2011) Online Journalism and the Promises of a New Technology. A Critical Review and Look Ahead. *Journalism Studies*, 12(3), 311–327.
- Quinn, S. (2009). *Mojo: Mobile journalism in the Asian region*. Singapore: Konrad Adenauer Foundation.
- Singer, J. (1998). Online Journalists: Foundations for Research into Their Changing Roles. *The Journal of Computer-Mediated Communication*, 4(1).
- South China Morning Post (Friday, 11 September, 2015): *End of the road for journalists? Tencent's Robot reporter 'Dreamwriter' churns out perfect 1,000-word news story - in 60 seconds*. Retrieved on August 31, 2016 from <http://www.scmp.com/tech/china-tech/article/1857196/end-road-journalists-robot-reporter-dreamwriter-chinas-tencent>
- Sussman, V. (1994). Electronic Newspapers. Retrieved on August 31, 2016 from <http://usinfo.org/enus/media/overview/press16.html>
- Thurman, N, & Schifferes, S. (2012). The future of personalization at news websites: Lesson from a longitudinal study. *Journalism Studies*.
- Undergraduate Catalog Archive, 2004-05, Online Journalism Major code BJ6909 Retrieved on August 31, 2016 from <http://www.ohio.edu/catalog/04-05/colleges/jour.htm>.
- Yelvington, S. (2005). Bye-Bye, Nando. Retrieved on August 31, 2016 from <http://www.poynter.org/how-tos/digital-strategies/e-media-tidbits/33430/bye-bye-nando/>

About the Author

Dr. Zhaoxun SONG is an Associate Professor at the School of Communication, Hong Kong Hang Seng Management College. His research interests include organizational communication, nonverbal communication, business and financial journalism education, and online journalism.

Journal of Communication and Education © 2016

Please cite as: Song, Z. (2016). Rethinking the History and Defining Characteristics of Online Journalism. *Journal of Communication and Education*, 3(1), 17-26.