

Does Twitter Create a Daily Me or a Daily We?

Microblogging, awareness systems and the future of newspapers

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Introduction

The microblogging service Twitter receives its fair share of both accolades and condemnations. A relative newcomer to the Internet's social media landscape, Twitter allows its users to post a message, known as a 'tweet', 140 characters at a time. It was quite successful as a platform for information sharing during the 2009 Iranian protests and the 2008 American election. At the same time, it also played a major role in the dissemination of the balloon boy hoax and spread of Kanye West's rumored death.¹

As the service allows for posting to the web from mobile phones through text messaging, short message service (SMS) and also through web applications, it is not surprising that Twitter is becoming a common way to break and spread news. Its popularity has surged in the past year jumping from 1.6 million accounts in April 2008 to 32.1 million in April 2009 (Hermida, 2009). In March 2009, Twitter was recording about six million updates a day (Stiles, 2009).

In addition, users on Twitter are spend more time reading the news; in fact the average user is two to three times more likely to visit a leading news site than the average American citizen (Farhi, 2009). Many journalists have been incorporating Twitter into their arsenal of tools that they use when researching and writing a story.

¹ Kanye West died in Twitter Hoax published on October 21, 2009. Retrieved from <http://www.popeater.com/2009/10/21/kanye-west-died/>

The traditional news model which is typified by a one-to-many broadcast signal, where journalists chose, write and produce the news for an audience, is in the midst of a transition and social media sites like Twitter are playing a role in this as they are able to disseminate news in quick, short bursts that the traditional model cannot compete with.

The purpose of this research paper is to describe, explore and explain the use of the microblogging service Twitter as a news outlet in order to arrive at an in-depth understanding of its role as a news breaking and gathering tool for journalists and citizens alike. The paper also examines the role that users play in Twitter's innovation and evolution and attempts to extrapolate how innovations have, or have not, impacted the journalism community of Twitter. It also explores the lessons learned from Twitter to contribute to a framework for understanding the process of socio-technical innovations more generally. Consideration will be given to Twitter's development and use through a social constructivist lens of technological development. A textual analysis of other studies, blog posts and articles about Twitter will be combined with qualitative observation of relevant application program interfaces (APIs) that are showing promise for the future of journalistic format on the Internet.

Key theoretical concepts

To give perspective to the on-going development of Twitter and its wide spread adoption by journalists, it is important to look at this technology from an already

established lens of innovation theories to reach a better understanding of its diffusion, development, and implementation.

Bijker (1995) explores both the social shaping of technology and the technical shaping of society but warns that framing these issues in terms of “society” and “technology” should not obscure the fact that they both human constructs. It is important to recognize that technical innovation does not occur in a vacuum. There are many different actors involved in the development of any technical artifact. As Bijker and Law (1995) explain, innovation is shaped by political, economic, technical and social factors, making it a product of pre-existing structures, constraints, and opportunities. This is an important point to keep in mind when considering new technologies influence on contemporary {what type} systems, for example how a society gathers and disseminates information through the practice of journalism.

The diffusion of innovation is a process that employs communication channels among the members of a social system over time which can be seen as leading to social change (Rogers, 1995). There are many factors influencing the uptake of new innovations, as well as how quickly they spread. Rogers (1995) argues that not all innovations are made equal and that there are five factors that play an integral role in whether they are successful: the degrees of relative advantage which can be measured in social prestige and convenience; compatibility which relates to a potential adopter's perception that the innovation meets their needs; the innovation's complexity; the general usability of the innovation, which Rogers defines as trialability; and the innovations' visibility to other possible users.

Wyatt (2003) argues that the choice of whether or not to adopt a new technology cannot be seen simply as a passive move by the user. Rather, Wyatt asserts that it is equally, if not more, important to consider those who either adopted then rejected or just never adopted the technology in the first place (2003). This idea will be explored further later in this paper, but it is important to note that there are many people who question Twitter's validity as platform for anything more than self-reflection and navel-gazing. This reinforces the idea that it is the user that shapes the technology and that it is entirely dependent on how the innovation is leveraged through use.

Rogers (1995) argues that there are multiple stages involved in the process of technological adoption: knowledge, persuasion, decision, implementation, and confirmation. He concludes that state re-invention is most likely to occur during the implementation stage, (Rogers, 1995). Re-invention is a key concept when thinking about Twitter as its users have played an important role in shaping its development and its functionality as an application. These highly involved and influential users, referred to by Rogers (1995) as "innovators" or "lead users" by von Hippel (2005), are ahead of the majority and are willing to take risks in the hopes of financial or perceived status gains. Many companies have begun to recognize these people as important to the process of development and diffusion of their innovations and often give them early access to new technologies in "Beta" stages of development before they are released to the general public. Google makes frequent use of this strategy, such as with the release of their Wave and Gmail applications. Improved computer and communication technologies have resulted in a reduction in cost for

diffusing information and leads to the growth of "innovation communities" (von Hippel, 2005, p.166).

There is a long history of the relationship between media technologies and community building which social media are seen to challenge, mainly the relationship between a media's ability to build large unified audiences or smaller, segmented ones, as well as the traditional "one way" broadcaster-audience communication model. Nicholas Negroponte (1995) coined the term the "Daily Me" to describe a two-way communication channel that is typified by increased choice, customized consumption and instant availability for news. New information dissemination systems provided by the Internet are often seen as an attack on the traditional news system where only those with access to a printing press or broadcast studio could leverage the mass media. Sunstein and Keen argue that all this access to self-broadcast will have negative impacts by creating an echo chamber (Sunstein, 2007) and thereby create too much noise (Keen, 2007).

In contrast to the Daily Me, Eves (2009) forwards the idea of the "Daily We" as offering the user a customized newspaper compiled from all the things the people in specific social networks are reading. In this context, Twitter has been described as a "vetted reading list" (Eaves, 2009) in which a user's followers post what they are reading and what they deem to be news. More sophisticated versions of this, for example The Hourly Press and the Twitter Tim.es are discussed below.

This paper makes a conceptual division between social media innovations in general and the effect they have on the practice and consumption of journalism. The object

here is to analyze the journalistic and information gathering uses of Twitter in the context of theories of technological innovation. Twitter allows for the effects of these changes in journalism to feed directly back into the innovative process by opening up their application programming interface (API) for designers and engineers to act as lead users and innovate.

A quick history of Twitter

Twitter was publically released in August 2006. It is the brainchild of Jack Dorsey, Evan Williams and Biz Stone, all of whom worked for a San Francisco start-up called Obvious (Farhi, 2009). Twitter was created as an answer to their need for a simple way to share information.

It began as a “bare-bones service, offering little more than the ability to post 140-character messages”, (Miller, 2009, para 2). Twitter’s inventors see its appeal as due to its ease of use, its instant accessibility, and the interconnection it offers, all with a “very low expectation” you post messages that people can read if they choose to, there is no guaranteed audience as it can be likened to writing on a wall (Niedzviecki, 2009, p. 129). Twitter asks users to post responses to the question “What’s happening?”

According to Nielsen, in the past year Twitter.com has out-grown its toughest competitor, the world’s most popular social networking site, Facebook.com. Ranking number one in Nielsen’s member communities’ category, Twitter’s unique visitors increased 1,382 percent year-over-year, from 475,000 unique visitors in February

2008 to 7 million in February 2009, compared to Facebook's 228 percent growth in the same period (McGiboney, 2009). This is not to say the social network's popularity is similar to Facebook's, which is the most popular site garnering 66 percent of the Canadian market share, while Twitter has only 8 percent (Cormier, 2009). Twitter is more popular with Americans with 18 percent participation while Facebook is slightly less popular than in Canada with 51 percent of the market share (Cormier, 2009).

These numbers can be explained, at least in part, by the fact that cell phone plans in Canada make it prohibitive to participate as the cost for data plans as well as unlimited SMS are quite high. Mobile providers have been reluctant to allow users to participate at a reasonable cost. While there is the possibility of communications via Twitter on the web, real life experiences are much more interesting and relevant to tweet about as they happen without being tethered to a computer (Gauthier, 2009). If the cell phone owner does not have data or unlimited SMS it can be argued that Twitter loses its appeal with a lack of real time participation.

Existing research

As a relatively young innovation, there has been very little empirical research conducted on Twitter. This will probably change in the near future as the service has been given considerable mass media attention in the past year and more academics are adopting the technology.

Twitter has been described as a broad, asynchronous, lightweight and always-on communication system (Hermida, 2009). These characteristics have resulted in a few academics drawing the conclusion that Twitter can be classified as an awareness system (Hermida, 2009; Naaman, Boase and Lai, 2010). As an awareness system, the stream of messages provided by its users allows individuals to be “peripherally aware without directly participating,” (boyd, Golder and Lotan, 2010, p.1). Twitter offers the news industry a way to disseminate information with greater speed, as well as new ways to gather information by allowing journalists to extend their reach in finding sources and networking with other journalists regardless of geographic location, crowdsource their questions and collaborate with the audience. It is an interesting dilemma for the news industry as in an environment of tight budgets and newsroom consolidation due to the harm the Internet is causing economically it is at the same time viewed as part of the solution. Journalists are turning to the web, and specifically social media sites and applications, to help them do their work in a world that demands more of them all the while allocating much less resources in terms of staffing and much tighter budgets.

The ability to network with other communities of practice such as the growing contingent of journalists concerned about the future of their craft, has led to a vibrant online debate that can be observed through Twitter. The conversations that take place on Twitter have been explored in a few academic studies. In one such study, conversation and collaboration were examined through a content analysis of the uses of the 'at sign' (@) (Honeycutt and Herring, 2009). The findings revealed that the @ is used as a marker of addressivity by directing a message at an intended user as well as proving that despite the noisy environment many conversations with multiple participants can be coherent and collaborative (ibid.). The @ syntax is reminiscent of an early form of Internet social networking, Internet Relay Chat (IRC). It was used in IRC similarly as it is in Twitter - as a signifier that the user was a channel operator and thus had power to control the conversation but it would also be used to get someone's attention within the channel. The ability to get someone's attention on Twitter is key to its utility as a communication platform because there is a high signal-to-noise ratio in that there are many different conversations and postings happening at the same time, without the @ it is much harder to get a user's attention.

Another way conversation is propagated on Twitter is when a user retweets (RT), the process of taking a post by another user and copying it for others to see. One study looks at Twitter's retweet function and discusses how it can both be considered a simple act of copy and rebroadcasting as well as a means of participating in a diffuse conversation (boyd, Golder and Lotan, 2010). The spreading of messages across non-cohesive networks, in a space where the receiver

changes depending on the sender, results in a space where people loosely inhabit a multiplicity of conversations all at once (ibid.). This creates a vibrant, yet overwhelming sphere of conversation. One of the criticisms of Twitter is that for this reason it is often daunting for new users as well as non-users.

Non-users are an often-overlooked segment of population when considering technical innovation and adoption (Oudshorn and Pinch, 2003). In the context of innovation, Wyatt believes that those studying technological artifacts need to take into account non-users and former users instead of only focusing on the users of an innovation (Wyatt, 2003). On Twitter there are many vocal journalists who have rejected the technology dismissing it as “a toy for bored celebrities and high school girls” and “garbage” (Hermida, 2009). As it is a relatively new application, there have been no studies conducted to date into the use or non-use of Twitter by journalists and how it does, or does not, impact their profession. The non-use of technology is also considered to be relevant by Rogers who believes it should not be assumed that the diffusion and adoption of all innovations are necessarily desirable, as the technology must offer at least some degree of benefit for its potential adopters (1995). The benefits to Twitter are not necessarily immediately recognizable when you have yet to establish a network of contacts, and as such it often takes some explanation for a user to understand its potential. One Nielsen study has found that 60 percent of people who sign up for Twitter don’t return the following month (Farhi, 2009). Another study points to the fact that in their sample of 11.5 million Twitter accounts, 21% have never posted a tweet (Cheng and Evans, 2009). This raises the question of whether or not Twitter will be a long-term

service. Although the gains it has made are noteworthy, it is possible that as a technology it will not live up to its hype. "Far too many tech junkies and marketers are obsessed with Twitter becoming the next news outlet source. As a result, the press are doing what they did with blogging: hyping Twitter as this amazing source of current events and dismissing it as pointless babble" (boyd, 2009, para 5). That being said, microblogging is an important development in the way people get their information, news and socialize, one which will not rely in the long run on any one specific service.

Twinnovation

When considering an innovation it is important to look at the artifact's development, use, and innovation through a wide enough lens to capture all the actors. Applying a social construction of technology framework to the development of Twitter will highlight some of the platform's successes in incorporating its users' ideas and innovations into its design. Technological development should be seen as a social process and not an autonomous occurrence as it involves many actors and relevant social groups (Bijker, 1995). That is to say, when looking at how an innovation has diffused through society, it is necessary to recognize that the way in which the users of Twitter actually use the innovation as it has a strong impact on application design. This impact can be seen explicitly by examining the adoption of the @ and the RT functions by the programmers at Twitter.com. The way in which the lead users (von Hippel, 2005), or early adopters' (Rogers, 1995) used Twitter played a

large role in dictating the way the innovation currently functions. Two good example of this can be seen through the RT and the @ functions.

Incorporating @ and RT functionalities

As mentioned earlier, when Twitter was launched it was very basic with no extra functionality. Twitter is a relatively new innovation still in the stages of transition which means it has interpretative flexibility that allows users to dictate use.

Therefore it, to some extent, has not yet reached what Bijker would term closure:

The social-constructivist model highlights the contingency of technical development (by demonstrating the interpretative flexibility of artifacts), while describing how freedom of choice is narrowed by contextual constraints and alliances. Processes of social construction thus have a dual character: They include (almost) irreversible processes of closure, reflecting the step like aspect of technical change, but they are also continuous between the steps, as indicated by changes in the degree of stabilization (1995, p. 271).

Honeycutt and Herring (2009) argue that Twitter was not originally designed for collaboration as the stated purpose was originally to answer the question “What are you doing?”, but they see the users appropriating the service for informal collaborative purposes. These collaborations facilitate conversation to function within the system. These practices were not originally built into the service, but Twitter responded to the way users were using the system and built the collective will into the system (boyd, Golder and Lotan, 2010). When using Twitter.com the user can click on the @name and be linked to the person’s personal page; there is also a specific page where the user can see all mentions of their own @name. There is also a button on which users can click to reply to any @name mentions.

The retweet function

Similar to the way Twitter.com adopted the @, the RT function developed through its adoption first by users and then there was a formal implementation by the Web service. As boyd et al. (2010) discovered in their study on RT there was no universally agreed-upon syntax for retweeting; it would mostly appear as *RT @user content* but there are other forms such as the use of *content (via @user)*. In November 2009, Twitter unveiled a formalized RT structure before there was a universally agreed upon syntax and many users were unhappy with the new functionality as it was viewed as restrictive. Previously, retweeting was manually entered through Twitter.com (with the exception of some APIs that included a RT button). Thus, any editing of the original comment could be made as well as allowing the user to add their own remark allowing context or opinion to be added. However, when Twitter rolled out the new RT function it restricted users from adding their own short message. Users were unhappy and have so far seemingly chosen to ignore the functionality. Presumably in the near future, Twitter will re-release the RT functionality in a less restrictive format.

Twitter's deliberate outsourcing of its design to its users is part of the reason why its popularity is increasing. In an interview with the *New York Times*, Evan Williams, one of the founders, said: "Twitter struck an interesting balance of flexibility and malleability that allowed users to invent uses for it that weren't anticipated... You get a bunch of users interacting and it's hard to predict what they're going to do. We say, 'Why are people using this and how could we make that better?'" (Miller, 2009).

Users feel a sense of inclusion that Twitter is listening to their concerns and responding to their wants by incorporating changes into the design and function of the service.

Empirical studies show that many “lead users”, from 10 to 40 percent, engage in developing or modifying products (von Hippel, 2005). These lead users share many characteristics with Rogers’ vision of early adopters as they are usually ahead of the majority of users with respect to important market trends. The lead users tend to gain relatively high benefits from finding solutions (von Hippel, 2005). Twitter’s growth can possibly be attributed in part to its users’ innovations and many journalists can be seen to be taking full advantage of this service to network with others. The *Globe and Mail* has an entire contingent of reporters online.²

The Web is in a good position to provide a forum for informal collaboration which is usually done for free; examples of this would be the online user generated encyclopedia, Wikipedia, and the operating system, Linux, both of which have been built from the ground up by volunteers. This phenomenon of groups acting collectively for the benefit of society has been named a variety of things: collective intelligence (Levy, 1994), crowd-sourcing (Howe, 2008), wisdom of the crowd (Surowiecki, 2004), wikinomics (Tapscott and Williams, 2006), and groundswell (Li and Bernoff, 2008). Twitter acts as another tool to harness the collective intelligence and good will of users on the Internet.

² An entire list of *Globe and Mail* journalists on Twitter compiled by their Communities Editor, Mathew Ingram can be found online at <http://listorious.com/mathewi/globestaff>

Twitter as an innovation is in a constant state of fluctuation. It has not stabilized and as such is in a state of controversy where the users can function as both users and innovators (Bijker, 1995). This fluctuation can be seen from the point of view of the application programming interfaces (APIs) that are constantly being released and redesigned for users by users. Since October 2006, Twitter has allowed programmers' and engineers' applications to work in conjunction with Twitter.³ Tech guru Dave Winer blogged that Twitter has now set the bar for APIs and that there is a strong possibility that this will become the open standard for the Web (2009). The transparency and openness that Twitter exhibits as a service when it comes to its inner workings have changed the expectations of the programming world and other companies are following suit.

A time of transition

In the process of transition from the traditional print medium to an online existence, many experiments are being undertaken in the journalism world. One example is through the Twitter API and the services that are being designed to leverage the collective intelligence of the Twitter users.

“People want to *do* news and this time of transition has been a catalyst for creativity after far too long when the traditional media were too comfortable. Being terrified has prompted more energy and innovation in the news business than ever before” (Jones, 2009, p. 219). Citizen journalism, which is the concept of non-professionals

³ The official Twitter blog at http://blog.twitter.com/2006_10_01_archive.html

reporting the news through the web, wider online readership and the crumbling of the traditional economic model where the cost of advertising covered the cost of producing the newspaper have led to many attempts at finding new and innovative ways to deliver news content.

In harnessing tweets by journalists, bloggers, citizen journalists and average users a new news system can be created that would be more collaborative in nature. While the proliferation of news is a positive thing, some worry that this will lead to an insular news system, where personalization will result in an echo chamber of content and the user will not be aware of topics outside of their circle of friends and interests (Sunstein, 2007; Keen, 2007). The idea of the Daily Me can be classified as a personalized news service (Lasica, 2001). Sunstein views this ability to control content as an attack on democracy, as the newspaper represents to him the public sphere in which general interest reigns and allows society to function (2001). The equation of democracy with newspapers is a contentious statement. “The internet offers its own democratic way of filtering content, allowing what people think is important, relevant and interesting to be aggregated and heard. It may be messy and far from perfect, but then, so is democracy” (Owen and Eaves, 2009). The Web allows information to be accessed both more widely as well as faster than ever before and Twitter is one of the tools that can be used to leverage this.

Personalized news services

Two specific new applications that hold particular potential for the future of news are The Twitter Tim.es and The Hourly Press.⁴ Although they function differently, they both represent new innovations that allow the application to leverage the content created and reported by the collective mind on Twitter.

The Twitter Tim.es aggregates the news that you tweet in addition to the news the people you follow post and puts together a recommended list of news stories on a separate Web page. It is fairly effective and relies on each Twitter user as an editor. This can result in a wide range of content depending on who you are following and what they happen to be reading and discussing that day. “From the massive volume of daily news,” says Maxim Grinev, who is leading the Tim.es project, “the most interesting [news stories] are those actively discussed by people you follow, your friends, respected persons and celebrities you admire. This is the most effective filter” (Bunz, 2009). The API allows the user to have a personalized news service of topics that are aggregated based on their personal interests and tastes based on their online presence. One blogger surmises that “we’re more likely to follow a recommendation from a friend than one from a stranger, so it makes sense that we would rather read articles endorsed by our contacts than by an editor we’ll probably never meet” (Wheeler, 2009). This is not to say that the work journalists have been doing for the past century was not well done, but rather that the Internet has shifted

⁴ See <http://www.twittertim.es/> and <http://hourlypress.com/>

how users filter their information and has thus effected the shape of the industrial news model.

The Hourly Press addresses the possible weakness of The Twitter Tim.es through a news aggregation solution that is hierarchical. The Hourly Press site explains it as: “an example of an *authoritative social filter*. It shares some attributes with open social systems like Digg and others with formal organizations like newspaper editorial boards. It is based on a hierarchical projection of the Twitter social graph rooted by a hand-selected editorial board.” Each Hourly Press has appointed editors that choose the content they think is important – the more editors that agree that something is important, the higher it ranks in your news feed. Each story consists of a headline, a snippet and then a list of comments about why the editors think the story is newsworthy. The stories come from sources and each source is assigned a score based on how many of the editors follow them.

While this is a very early release of the platform it holds some promise for the future although it seemingly replicates the same power structures and hierarchies as the ones found in the offline world of mainstream media. It also is problematic in that in the future if there are no newspapers, where will the content come from? It is estimated that 85 percent of all hard news reporting comes from newspapers (Jones, 2009). It is not currently clear who will be funding the news reporting of the future although innovations like The Twitter Tim.es and The Hourly Press are important experiments worthy of further study as effective social distribution systems in which the social network directs the users reading list.

These two APIs represent the idea of the Daily We: the provision of a customized newspaper compiled from all the Web pages people in specific social networks are reading which in turn gives users a worldview based on their own tastes as well as those who inhabit their community. One blogger describes Twitter as their equivalent of a newspaper, providing him with a “vetted reading list” (Eaves, 2009). It is, essentially, harnessing the collective intelligence of the user’s network. Provided that the person has wisely chosen the network’s members, the content is filtered both editorially as well as socially.

The Daily Me?

The transition to the Web has allowed media to transition from a one-way channel of communication to a two-way communication. The social networking power that exists through Web 2.0 has brought with it new solutions but also new problems.

Increased choice, customized consumption and instant availability allow news to be consumed through what has been dubbed “The Daily Me” (Negroponte, 1995).

Whereas the audiences of mass media were perceived as massive, passive, anonymous, heterogeneous and primarily assembled for advertisers (Pavlik, 2008), “the Daily Me” can be seen as a 24/7 online news cycle in which the user personalizes their news consumption. This has been widely discussed as causing a revolutionary change in the balance of power between the news producer and the news consumer (Lasica, 2002; Shirky, 2009; Jenkins, 2006). While this is true to a certain extent it is important to remember that this new communication can also be seen as replicating power structures.

Castells (2009) discusses how the rise of this type of communication has modified the role of the gatekeeper but that “gatekeeping still yields considerable networking power because most socialized communication is still processed through the mass media, and the most popular information web sites are those of the mainstream media because of the importance of branding in the source of the message” (p. 419). That is to say that the years of branding give the major newspapers an advantage in the noisy world of the Internet. Shoemaker echoes this, “even in the face of technological and institutional changes, the tug of older, established routines shapes the newer environment.” (2009, p. 119). People are often likely to turn to names they recognize and institutions they trust for their information, tilting the scales in favour of the mainstream.

On the other hand, the world of Twitter places a strong emphasis on personal brand and not on the larger institution. This has the hypothetical result of making the playing field more level because anyone can act as a broadcaster and therefore as an editor and gatekeeper. The gatekeeper can be defined as those who “determine what becomes a person’s social reality, a particular view of the world” (Shoemaker, 2009, p. 3). This can certainly be extended to anyone who is using Twitter as a way to share information. The power to act as a gatekeeper is potentially available to any user by enabling them to filter information by acting as von Hippel’s lead user and being an early adopter of technology, thereby influencing the design of the artifact through its use.

This idea can be applied to the current crisis in the newspaper industry as well. “In the supply and demand system that guides all marketplaces, including the marketplace of ideas and information, we need better demand, not just more supply” (Gillmor, 2009, para. 8). A variety of words have been created to describe this new role: active consumer (Gillmor, 2009), prosumer (Deuze et al., 2007), produser (Tapscott and Williams, 2006) and new activity: citizen journalism (Thurman, 2008), participatory journalism (Winer, 2008), network journalism (Jarvis, 2008), interactive journalism (Matheson, 2004), ambient journalism (Hermida, 2009). It is possible that journalism is ceasing to be a profession and becoming an activity (Shirky, 2009). The shift in the role of gatekeeper is representative of the dominant idea that increased audience participation attacks the very notions of journalism, objectivity, and the journalistic profession.

Conclusion

Social media creates a high level of noise by the sheer size of content that is created by day, by hour or even by the minute. Especially systems like Twitter that allow users to post as often as they want 140 characters at a time up to 1000 times a day. Users have adapted ways in which to ensure they see the content that interests them – by using the @, RT for other’s learning and by categorizing people into lists and groups. Journalists can be seen to play a multiplicity of roles in their use of Twitter as both users and reporters. Twitter facilitates the dissemination of digital fragments enabling the disintermediation of news (Hermida, 2009). The ground is shifting under the traditional newspaper industry and the online world is one of the

main causes. Journalists are leveraging this improved technology to help them do their jobs in an environment of financial constraint. In a current economic state where their jobs are being cut and they are being expected to do more with less, social media technologies like Twitter and Facebook are offering some help but also are at the same time attacking the way the news industry functioned traditionally. Twitter and other microblogging platforms are offering journalists a new tool as well as a potential solution, at least in part, for the dilemma caused by the Internet. With more information available than ever before the role of the journalist is more needed as filter, analyst, fact checker, gatekeeper and context giver. Through initiatives like The Hourly Press, APIs are offering a way to harness the collective intelligence of Twitter. This is not to say that interesting initiatives online in and of themselves hold the key to journalism's future as that relies too heavily on the technology and ignores the effect of human participation. There is also the major problem for newspapers online due to the lack of a viable economic model; as of now, no one has figured out how to successfully monetize the Web at the same level of profit that the traditional newspaper industry has made historically.

Twitter is in a state of evolution, as its design and service have not yet stabilized. There has been a lot of hype surrounding the technology both from mass media as well as the tech geeks about Twitter's potential. It remains important to follow its development, as it sits in a similar unknown state as online newspapers; the service does not currently have a business model. That being said, the newspaper industry may well learn some important lessons from Twitter's openness and willingness to allow its participants to help with innovation.

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