Twitter as a News Source for Journalists

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Abstract

Twitter is a valuable news source for journalists. This article discusses the reporting by Twitter of the crash of Turkish Airlines TK1951 on 25 February 2009 on the runway at Schiphol Airport in Amsterdam. Analysis of the tweets shows how the news on Twitter develops and in what way Twitter is a news source. This article also looks at two other airplane crashes: On 23 December 2009 a Ryanair jet crashed on the runway at Prestwick in Scotland. The previous day an American Airlines jet crashed in Kingston, Jamaica. These three cases are compared and analysed. This article shows that the role of Twitter as a news source differs. This article also discusses whether the *wisdom of the crowds,* that is filtering of tweets by users in order to reach conclusions about the accident, played a role. A comparison will be made between the tweets about the crash on Schiphol Airport and the reports on *CoverItLive* about this accident by several newspapers.

Keywords: Twitter, news source, citizen reporting, wisdom of the crowds, *CoverItLive*.

Twitter as a news source for journalists

Herbert J. Gans (1980) in his classical study *Deciding What's News* paid much attention to the role of sources. The availability and social proximity of sources are important issues for journalists. Now-a-days we can argue that *news is in the clouds*, that is, in the Internet cloud. Journalists have lost their monopoly on news and news sources. The question is: are Gans's criteria still valid because of the development of Internet and especially social media like Twitter? Or has Twitter become a source beside the classical sources?

On first sight the content of the 140 character messages on Twitter is not very impressive. Generally the content varies between coffee chat, private observations and gossip: "40% is pointless babble" (Kelly, 2009). The topics generated by Twitterfall (www.twitterfall.com) do not create an incentive to learn the Twitter verse. However, in the past few years at least five topics on Twitter created news and on these occasions Twitter became an important news source. Twitter reports about the attacks on hotels in Mumbai in India were an important news source; later the student demonstrations in Tehran about the outcome of the Iranian elections attracted worldwide attention because of the pictures and reports which became available on Twitter. In *The Iranian Election on Twitter: The First Eighteen Da*ys, Jonathan Beilin and others (2009) have analyzed this collection of tweets.

> As a platform independent service for communication, Twitter has become a preferred vehicle to broadcast unfolding events in Iran both within the country and to an international audience.

In accordance with Gans's theory, traditional journalism is based on facts from documents or quotations from sources. This news model is changing rapidly. Academic Julie Posetti (2009) has described and analyzed how Australian journalists were using Twitter:

> Of course Twitter isn't journalism; it's a platform like radio or TV but with unfettered interactivity. However, the act of tweeting can be as journalistic as the act of headline writing. Similarly, the platform can be used for real-time reporting by professional journalists in a manner as kosher as a broadcast news live report.

Paul Farhi (2009), a reporter with *The Washington Post*, has shown how Twitter could become an important source: "Twitter works best in situations where the story is changing so fast that the mainstream media can't assemble all the facts at once". One of the most important problems for journalism when using Twitter as a source is the credibility of the message. Noam Cohen (2009), a reporter with *The New York Times*, drew six important conclusions about the use of Twitter during the Iranian elections. One of them is:

> Nothing on Twitter has been verified. While users can learn from experience to trust a certain Twitter account, it is still a matter of trust. And just as Twitter has helped get out first-hand reports from Tehran, it has also spread inaccurate information, perhaps even disinformation.

Micro-blogging, a better description of Twitter, makes direct broadcasting of impressions, emotions and news fragments on computer networks – the real time web – possible. These new forms of public communication or "para-journalism forms … are 'awareness systems', providing journalists with more complex ways of understanding and reporting on the subtleties of public communication" (Hermida, 2009). Professor Hermida states correctly that more research is needed to establish in which way journalism is adapting to these news forms of public communication.

In this study I will use three events to establish the role of Twitter as a news source. It concerns three crashes of jet aircraft: The crash of a Turkish Airlines jet on 25 February 2009 at Schiphol Airport; the crash of a Ryanair jet at Prestwick airport in Scotland on 23 December 2009; and an accident involving an American Airlines jet at Kingston airport in Jamaica the previous day.

Datacollection

Getting data from Twitter can be difficult. Using Twitter search is not always possible; collecting tweets from more then a few weeks ago is a dead end. Secondly if one searches for tweets on Twitter the question is whether all the tweets about a certain topic are retrieved. It could be for example that no hashtag (#) was used, or certain keywords were missing. Finally the researcher faces the question how to analyze a collection of tweets: how do you import a collection of hundreds of short messages into a spreadsheet?

The Schiphol case involved searching Twitter with Google, using a new tool: www.google.com/cse . This link gives the possibility to create one's own Google search engine. In this case searching was done using different keywords within the domain of Twitter (site:twitter.com). With different combination of keywords[1] a data set of 294 tweets was found. They were imported manually into Excel using copy and paste. The distribution of tweets according to various keywords is presented in Table 1 and Figure 1.

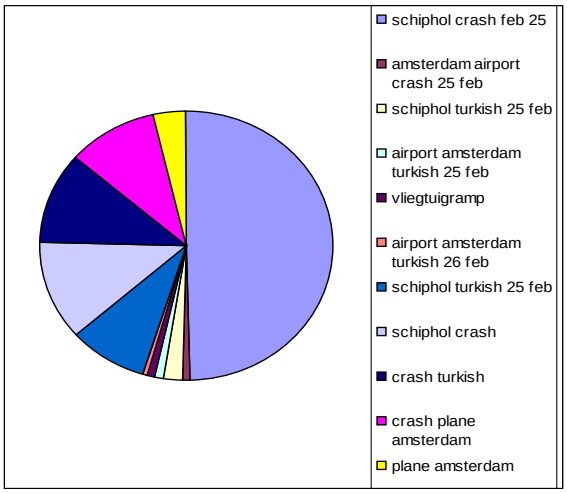

Figure 1 Pie graph of distribution of tweets according to keywords

[1] The keywords were: "schiphol AND crash"; "schiphol AND turkish"; "Amsterdam airport AND crash"; "Amsterdam airport AND turkish".

Table 1 Frequency distribution of tweets according to keyword

schiphol crash feb 25	145
Amsterdam airport crash 25 feb	3
schiphol turkish 25 feb	6
airport amsterdam turkish 25 feb	3
vliegtuigramp	2
airport amsterdam turkish 26 feb	2
schiphol turkish 25 feb	25
schiphol crash	35
crash turkish	33
crash plane amsterdam	29
plane amsterdam	11
	294

There is one lesson to be learned from this experience: collect tweets during the event, and store them for analysis later. Importing tweets into Excel can be done more easily by using specialized software: The Archivist[2]. This piece of software is very helpful for doing searches for tweets and exporting them directly to Excel.

[2] **The Archivist** is a Windows application that runs on your local system and allows you to archive tweets for later data-mining and analysis for a given search. **The Archivist** allows you to start a search and will get as many results as it can on the initial search. If you leave **The Archivist** open, it will update with the latest results every 10 minutes. You can also close **The Archivist** and open it later. **The Archivist** will save the tweets and get all the tweets it can since that search. http://www.flotzam.com/archivist/#

When on December 22 and 23, 2009 two similar crashes took place, the Archivist was used immediately to collect the tweets. Using different keywords[3] for searching, two new datasets were created. The first dataset was about the crash of a Ryanair jet and contained 301 tweets; the second set concerned the accident at Kingston, and contained 1373 tweets. Both new cases are comparable with the accident of Turkish Airlines at Schiphol earlier that year. One major point of difference emerged: the tweeting about the Schiphol accident started with a live report on Twitter; only in the Schiphol case was there eye witnesses reporting on Twitter.

Rating of tweets was done according to the following variables:

- **type** of tweet: @ = answer; RT = retweet; T = tweet
- **source**: does the tweet comes from a private person or a journalist?
- **content**: can the content of the tweet be categorized as news or message; comment; reference to sources like documents, maps or pictures; reference to news media?
- **time**: at what time was the tweet sent?
- **nationality**: (only for the Schiphol case) what was the nationality of the sender?
- **hardcopy media**: (only in the Schiphol case), was Twitter used for reporting in the print editions of national newspapers?

Findings

Every new gadget on the Internet generates a lot of public attention which can be represented by a graph showing exponential growth in that attention. For newspaper coverage about a new gadget like Twitter the same pattern can be found. The attention of the mainstream Dutch print media for Twitter shows this

[3] For the plane of Ryanair the following combination of keywords was used: "Ryanair (Scotland OR Prestwick)"; and for the crash at Jamaica: "Jamaica (AA or crash)".

exponential growth. A search with Lexis-Nexis using Twitter as a keyword for mainstream Dutch print media shows the following results (Figure 2 and Table 2):

Table 2 Attention of newspaper to Twitter, by number of stories.

	2007	2008	2009 sept	2009 nov
de Volkskrant	6	7	39	152
NRC	4	11	36	125
Trouw	3	6	30	129
AD	1	2	33	147
De Telegraaf	1	3	15	65
NRC.next	4	17	34	127
FD	7	12	12	55

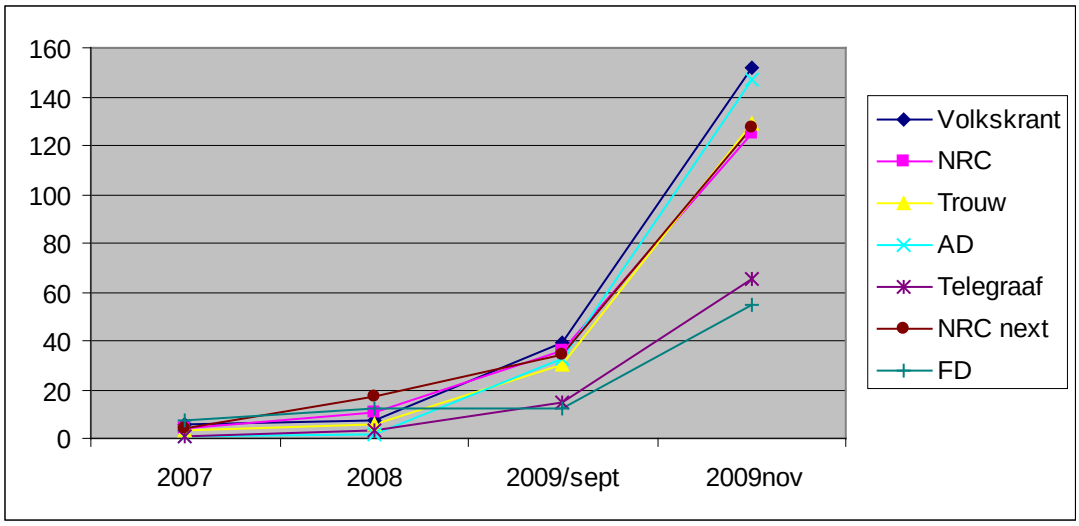

Figure 2. Exponential growth in attention for Twitter by print media, by number of stories.

A few years ago blogs attracted lots of attention in the media, and a similar type of analysis could be made. After some time the exponential growth stops, attention falls back and stabilizes on a certain level, meaning the new tool has been incorporated and accepted by the public and media. In the case of Twitter it is remarkable that the biggest national newspaper, *De Telegraaf*, is, relatively speaking, behind the other newspapers. An explanation could be found in the target audience of this newspaper. Income and education are generally lower than newspapers like *de Volkskrant* or *NRC-Handelsblad,* and therefore the attention for Internet gadgets is smaller.

This growing attention to Twitter as a new tool on the Internet is not reflected in the use of Twitter as news source. A search in Lexis-Nexis for national Dutch newspapers on Feb 25-27 using keywords "schiphol AND crash" and "schiphol AND crash AND twitter" gives the following results (Table 3).

Table 3 Attention of newspapers for Schiphol crash by Twitter, using number of stories

	schiphol AND crash 25-27 febr.	schiphol AND crash AND twitter 25-27 febr.
de Volkskrant	11	2
NRC	8	
Trouw	11	
AD	22	2
De Telegraaf	7	
NRC.next	7	1
FD	3	

The conclusion is simple: all national newspapers gave a lot of attention to the accident, but the number of stories where Twitter played a role was very limited. Twitter was hardly mentioned as (the) source of the news. On the contrary, most stories discussed the question: who was first in reporting, Twitter or radio? Or journalists wrote about the impact of the accident on tourism, because the runway of Schiphol was close to the highway and Twitter news spread fast.

De **Volkskrant**, a national newspaper, writes that the modern tourist visits accidents, takes a picture and sends his tweets around the world.

Het **AD,** another a national newspaper, focuses on the alert function of Twitter; Twitter starts an alarm, but as a news source it is not yet accepted.

NRC.next concludes that Twitter is becoming a news source, but most journalists try to find eye witnesses with Twitter

In general one can conclude that the role of Twitter as a news source in the main stream print media was limited. Reporting about the crash was mainly based on traditional sources like spokespersons, and eyewitness reports by journalists.

Real Time Web Reporting: CoverItLive

Although the use of Twitter as a news source was remarkably low in print news papers, this does not imply that new media tools were not used in the online editions. For the first time we have seen Real Time Web Reporting about this accident using *CoverItLive*. Professional reporters used the real time web to follow the events around the crash of the Turkish Airlines jet during the day. Input came from 'citizen reporters' using Twitter or people added comments to the reports on *CoverItLive*. The *CoverItLive* sessions by three news papers, *De Pers*, *Trouw* and *de Volkskrant,* show for example the development of the rescue operation for this

accident, using a combination of official sources and citizen reporting[4]. Reporting starts with a discussion about the question whether the plane was on fire or not, whether emergency cars and fire brigade had arrived, and how many people had died and how many had been injured. It is interesting to see how consensus finally arises out of the chaos of different message and facts. *CoverItLive* could be considered as an interesting example of a collective endeavor to find the truth, which is innovative from a journalistic perspective. But on the other hand it is also remarkable that these finding were not used in the print editions.

A more detailed analysis of these *CoverItLive* sessions will follow later, by comparing the content of *CoverItLive* sessions with the collection of all tweets related to the crash of the Turkish Airlines jet.

Schiphol in the Twitterverse

The use of Twitter during the events surrounding the crash at Schiphol airport was generally a Dutch affair. More than half of the tweets in the database (160 out of 290), although mostly written in English, were from Dutch origins. This is remarkable, because the crash of this carrier of Turkish Airlines would have drawn attention from Turkish people living in The Netherlands and Germany. However the number of these tweets in the analysis was very low.

Looking at the content of the tweets, the following distribution emerges (Table 4)

[4] De Volkskrant starts a live report on: http://www.coveritlive.com/mobile.php?option=com_mobile&task=viewaltcast&altcast_code=80d6daaf56&start=1&start=2&start=3&start=4 (accessed 28-12-2009); a journalist of Trouw (using a nickname: Ricus)starts also a coveritlive session: http://www.coveritlive.com/mobile.php?option=com_mobile&task=viewaltcast&altcast_code=4a2b48ef31 (accessed 28-12-2009); 'coveritlive veteran' Peter van der Ploeg reported for the free newspaper De Pers: http://www.depers.nl/binnenland/287903/Schipholcrash-liveblog.html (accessed 28-12-2009). Jaap Stronks, the Twitter-king of the Low Countries summarized the most important developments and sources on a blog: http://www.bright.nl/beleef-live-mee-vliegtuigcrash-op-schiphol

Table 4 Distribution of the content of tweets

type of content	Total
Comment	117
Media	11
News	112
Source	50
Total	290

The most common content of the tweets involved comment, with phrases such as "did you see that …". The second most common comment could be categorized as news, because they contained messages like "Turkish Airlines crashed at Schiphol". Reference to documents, photographs, maps, maintenance reports etc, were the third most common. And in fourth place were tweets referring to media. Although news and comment share almost the first place, their occurrence on a time line however is totally different, as will be shown later.

If we look at the people who sent tweets, the majority were private persons (252 out of 290) as opposed to journalists. Re-tweets and answers represented a minority. The majority of messages were just simple tweets (242 out of 290). From cross tabulation between type of tweet and type of content, no relationship could be found, because the numbers in the various cells were too low for calculating percentages or Chi Square. In the Schiphol case therefore tweets could contain any type of content: news, comment, reference to documents, or to media. A relationship could be established between the content and the source. Journalists were generally sending tweets with news content, tweets of private persons generally involved comment: 62% of the tweets of journalists were news, and for private persons this number was 35%. Looking at the comments, the numbers were

reversed; 44% of tweets of private persons were comment and for journalists this was 16% (see table 5).

Table 5 Cross tabulation show distribution for content of tweets versus source

	journalist	private persons
comment	16%	44%
media	11%	3%
news	62%	35%
source	11%	18%
	100%	100%

The distribution of the number of tweets on the time axis[5] for the variable 'content of the tweet', categories news and comment, showed a predictable picture (Figure 3). At the start of the event tweets with news represented a majority; gradually the tweets with comments took over and grew. Within three hours after the crash 149 of the total number of tweets (290) had been sent: 75 of 149, 50%, were news tweets.

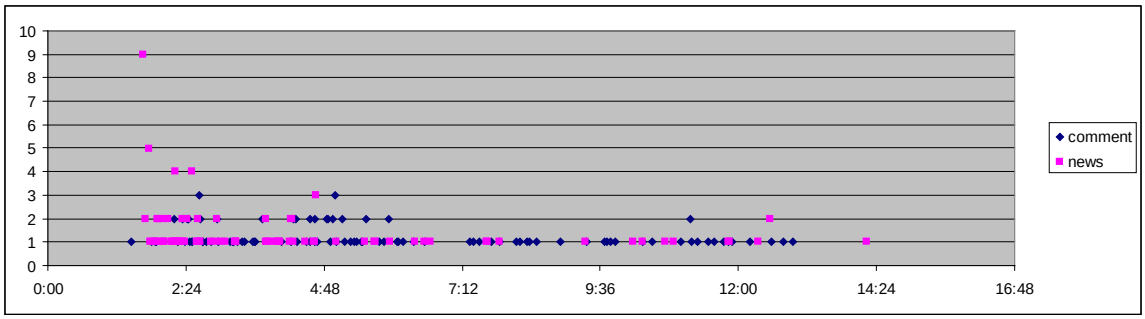

Figure 3 Time axis for news and comment

[5] The time axis in Twitter creates a problem. The first tweet was sent by Nipp on 10.39 Dutch time, but using Twitter search the tweet was found with a different time stamp: 1.39; which is three hours later. The time difference could be explained by the time differenced between the local time and the time on the server of Twitter. Therefore the numbers on the time axis must be recalculated, but that does not influence the distribution.

Nipp, Ansgarjohn and the Schiphol crash

The first tweet about the Schiphol crash was sent by an eyewitness under the Twitter name Nipp (http://twitter.com/nipp). He wrote: "Airplane crash @ Schiphol Airport Amsterdam!!1:39 AM Feb 25th". Nipp is one of the key persons in the reporting on Twitter about the disaster. Reading his tweets gives an impression of how the reporting on Twitter developed. The perspective was as follows. In the beginning Nipp started sending his tweets as an amateur-journalist, who reports what he sees. However within minutes he was contacted by the mainstream media for an eyewitness report. Then he was asked about his use of Twitter as a reporting tool. Twitter is therefore used by (international) journalists as an 'alert system'. Journalists use Twitter to get the news about the crash, but they immediately tried to locate the person who was tweeting. After a person is found he or she is considered to be a traditional source: the eyewitness.

One hour after the crash Nipp had sent about 15 messages from his Blackberry; he reported about the disaster and the chaos which was developing in front of his eyes. He started with the crash, and then tweeted about the survivors who were standing outside the plane, then a description of the plane which had broken into three parts, and finally information about the airline and an estimate of the number of passengers. He tried to take pictures from his location, close to the runway. After one hour Nipp stopped reporting about the accident, he was too busy twittering and talking with the mainstream media who were interviewing him. The Dutch media were first to contact him, with radio leading. After the Dutch media came the international media, in particular CNN. Two hours later Nipp was talking to Dutch TV stations, and when he had time he continued tweeting about the number of victims, the wounded and dead, and speculated about the cause of the disaster. The

experiences of Nipp, were recorded by *het Parool*, an Amsterdam newspaper, under the headline “Twitter was even de rampenzender” (Twitter as the broadcaster for disasters). It is remarkable that the story focuses on Nipp’s experiences with Twitter but not about the disaster. John Ansgar (http://twitter.com/ansgarjohn) was another eyewitness. He went into the plane to help rescue the victims. He wrote on Twitter: “Saw the plane go down and entered plane to help until emergency services arrived; Amsterdam Schiphol crash, lot of back injuries +/- 10 dead 3:48 AM Feb 25th from web”. A few minutes after the crash, John Ansgar wrote to Nipp that people probably had died. After he had played his role in the rescue operation he was also busy talking to mainstream media about his experiences and his use of Twitter.

From Scotland to Jamaica: two crashes in tweets

On December 22 and 23 2009 two other planes crashed. Around 9am on Monday December 23 an airplane of Ryanair crashed on the runway of Prestwick Airport in Scotland. One day earlier, December 22 around 10pm, an American Airlines jet had crashed on the runway at Kingston airport in Jamaica. The data were immediately collected with the Archivist and were easily exported into Excel for analysis. The total number of tweets in the analysis for Ryanair was 300, and 1,373 for American Airlines. Technically speaking these accidents were similar to the Turkish Airlines crash, but from a journalistic perspective there was one important difference. In these two cases there were no eyewitnesses. Live reporting as in the Schiphol case was therefore no option. Analysis of the tweets shows how the news about the accidents was broadcast on Twitter. Also the roles of journalists and the media were different. This becomes clear when we compare the tweets of these two cases with the tweets about Schiphol.

The first important difference related to the type of tweets. In the case of Ryanair

more then half of the tweets (51%) refer to a source or to a medium. In the Schiphol case is number was much lower (21%). The number of tweets for news and comment was bigger in the Schiphol case. Also the number of re-tweets was in the case of Ryanair higher than in the Schiphol case (41% versus 11%).The relationship between source and the content of the tweets was more or less similar to the Schiphol case, as in shown in Table 6 below.

Table 6 Content of the tweet versus source

	journalist	private person
commentaar	0%	13%
media	8%	14%
nieuws	75%	34%
bron	17%	39%
	100%	100%

Notice again that the content of the tweets from journalists was more news related; tweets of the public referred more to sources and media.

On the time line for the tweets about Ryanair we notice a difference with the Schiphol case (Figure 4). In the case of Ryanair the content of the tweets looked more like a mixture of news and references to sources. In the Schiphol case the tweets on the time line started with news and were later followed by comments. Three hours after the crash at Prestwick 204 tweets were sent out of total of 304. Of these 204 tweets, 83 were news tweets (that is 40%). In the Schiphol case this was 50%.

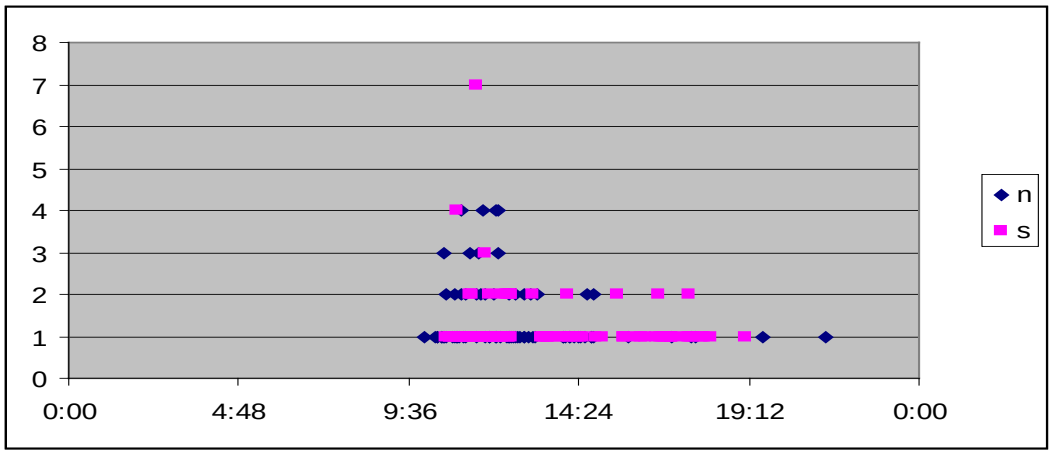

Figure 4 Time axis for the distribution of tweets for news and reference to sources

This distribution was confirmed by the American Airlines tweets. Just as in the Scotland case no eyewitnesses were available, so the public relied more on messages from the media. This was reflected in the distribution. Also in the American Airlines case the number of tweets referring to a source or a medium was higher than news: 41% refers to a source or a medium and 34% is related to news. The number of re-tweets was also much higher. The relationship between source and content of the tweet was confirmed for this case as well. Journalists were more often tweeting news than the public: 59% of the tweets of journalists were related to news.

The time line (Figure 5) for the tweets about the crash on Kingston Airport resembled the distribution of tweets about Prestwick. There was no clear follow up from comment after news. The tweets were a mixture of news and comment without time order. Three hours after the crash, 434 tweets were sent out of the total of 1,372. This number is low. This could be explained in the following way: the tweeting started later because of the time difference with Miami Florida. Out of 434 tweets, 144 were news tweets, or 33%. This was lower than in the Schiphol case.

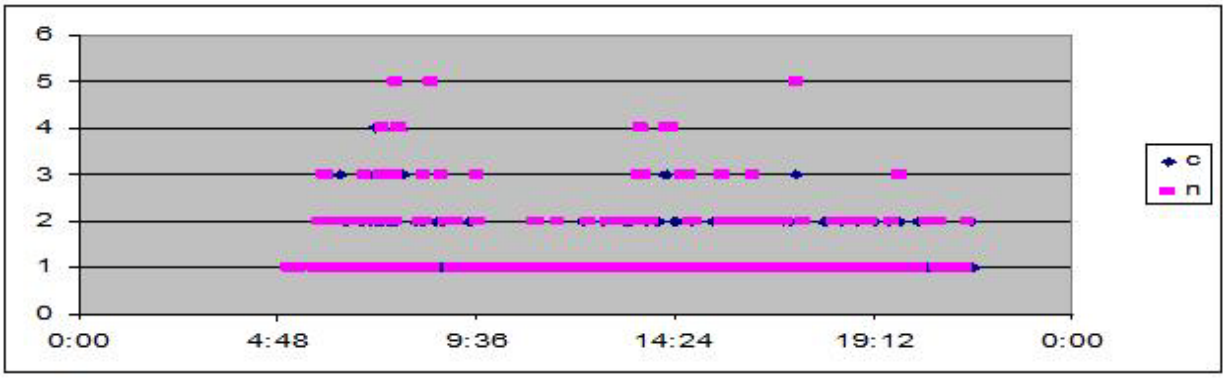

Figure 5 Time axis for news and comments in tweets

Discussion

News spreads in waves, which is shown by the closeness of tweets on the time line. If we look at the distribution of all tweets on a time line for the Schiphol case, one notices this closeness in the distribution of the points (Figure 6). After a certain time span the closeness of the tweets decreases.

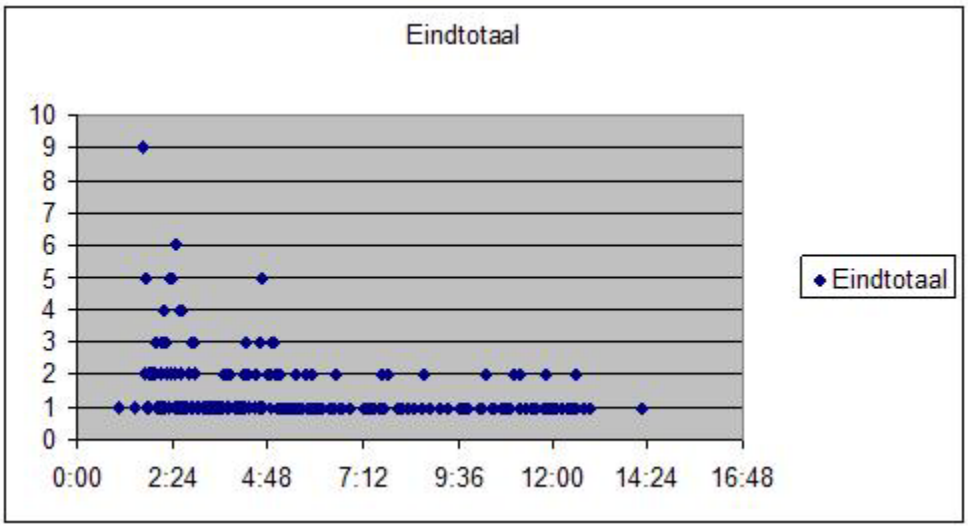

Figure 6 Time line for the total number of tweets for the Schiphol crash.

Within this wave a distinction can be made based on the content of the tweets. In the case of live reporting, news tweets are more dominant in the beginning followed later by comment. If there is no live reporting, in the case of Scotland and Jamaica, this distinction cannot be made. The wave is a continuous stream of

different messages.

In all the three cases studied here, it is evident that journalists and the mainstream media are using Twitter as an “alert system”. This confirms the hypothesis of Hermida (2009) discussed at the start of this paper. Finding eyewitnesses for a report about the accident had high priority. The tweeting of Nipp and AnsgarJohn shows this. From this perspective the use of Twitter by the mainstream media is hardly different form the use of traditional sources, as has been analyzed by Gans (1980). The only difference is the way of communicating between the media and the sources; the mobile phone. The aim of the use of sources in journalism is related to a goal: finding the truth. The individual approach of sources on Twitter, and the use of Twitter as an “alert system”, is part of the classical journalistic process to find the truth. However in this approach on important dimension is omitted. What is the impression from the total number of tweets? Can one draw a conclusion by reading all the tweets about a certain event? In modern studies about reporting news, based on network communication, the idea of collective intelligence, or the *“wisdom of crowds”*, plays an important role (Benkler, 2006). In this approach the classical distinction between reporters/ journalists on one side and the public on the other is omitted. According to Deuze and Bardoel: Journalisten krijgen de “rol toe bedeeld van zingevers, als knoopunt tussen annotatie en selectie, tussen nieuws en analyse” Bardoel en Deuze (2001, p. 101). (“The role of journalists is changing from reporting the facts to interpretation of facts”). The idea of giving up the distinction between the public and journalists is a central element in the book *We Media* by Dan Gillmor (2004). From this perspective the question arises: From the total collection of tweets, can truthful information be derived about the development of the event? Hermida has labeled this *ambient journalism:*

> The value does not lie in each individual fragment of news and information, but rather in the mental portrait created by a number of messages over a period of time.

To answer this question the analysis will now focus on an inspection of the content of three reports on *CoverItLive* about the Schiphol crash. The results will be compared with an inspection of the content of all tweets.

CoverItLiive[6]

The best way to give an impression about the content of the reporting on *CoverItLive* is frequency distribution of the words. Words that occur more frequently could be considered as central words in a discussion. These frequency distributions have been calculated for all the three *CoverItLive* sessions. The frequency distributions have been used as input for a *tag cloud.*[7] Below one finds the three tag clouds for the various reports.

Figure 7 Tag cloud for CoverItLive session of *De Pers* (frequencies behind the numbers)

This cloud contained several words with high frequencies, which is interesting

[6] CoverItLive is a free service on the internet for real time web reporting: http://www.coveritlive.com/ . Reporting by CoverItLive can be followed on a blog: the front end. There is one central reporter who is typing messages at the back end of the system and who is able add audio, video and pictures. He is also in control of the input from front end users who are commenting. Input from Twitter can also be included.

[7] Tag clouds have been made with web software at http://tagcrowd.com/

because it points towards topics of discussion in the reporting: “doden”, “gewonden” and “persconferentie” (death, injured and press conference) are three words which are central topics under discussion in the reporting.

Figure 8 Tag cloud of CoverItLive session of *Trouw*

This tag cloud shows a different picture, however we notice key words focusing on the same discussion topics: “doden”, “gewonden”, “passagiers” and “piloten” (death, injured, passengers and pilots). Compared with the first cloud the same finding occurs for the number of casualties; the position of pilots was also under discussion.

Figure 9 Tag cloud of the CoverItLive session of *de Volkskrant*

Compared with the other two sessions presented above, this CoverItLive report by *de Volkskrant* was not as focused as the other two. Only the word “press conference” could be considered as a central topic for discussion.

The idea about collective truth finding is an important element in CoverItLive

sessions. In these cases one can discover central topics for discussion. Generally the discussion starts with confusion and ends with a consensus about the facts. There is a process going on leading towards eliminating falsehood in claims about the event. In due course the impact of the disaster becomes much clearer. This can easily be explained by the fact that CoverItLive has a central point for reporting and commenting. Secondly the journalist plays the important role as moderator in the discussion and input of the participants. This role of moderator is of equal importance to his role as reporter in the CoverItLive session. Like a spider at the centre of the web, the journalist is controlling the process of reporting and discovering the truth. On the other hand one should not underestimate the role of the public following the CoverItLive session. The public should be considered as a "virtual community", dedicated to bring the best to the discussion and reporting. Exactly these elements are missing in the process of tweeting about the Schiphol crash. There is no central point, only Twitter in general. The difference can be shown by a tag cloud based on the total number of tweets for the Schiphol case.

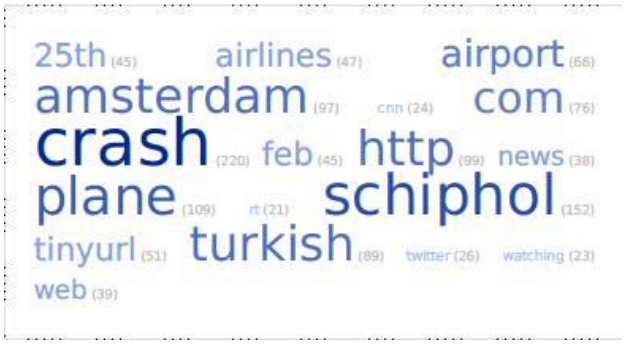

Figure 10 Tag cloud of all tweets for Schiphol

In this tag cloud it is difficult to distinguish central words for discussion. Interesting to note is "http" and "tinyurl", meaning that messages are referring to sources and or media. The absence of a central point, the role of journalist as a moderator, and the weak connectedness between the participants could explain why the process of truth finding on Twitter is much more difficult or even absent.

Tweets follow each other at high speed and contain lots of different information. On Twitter, one could say, there is a lot of noise on the line, which limits the possibility to listen. Or, the echo is too strong and hinders close listening.

The idea of a collective intelligence or *wisdom of the crowds* leading to spontaneous filtering of results could not be found on Twitter; however in CoverItLive sessions one could discover important elements of this process. This goes contrary to observations by Rheingold (2003) who showed that the use of SMS made spontaneous coordination of collective actions possible. This process of filtering and coordination was also confirmed for blogs (Rheingold, 2005; Benkler, 2003). But for blogs, the *blogroll* is very important; it specifies the virtual community of the blogs.

A second explanation for the unclear and unfiltered picture of the tweets about Schiphol is the number of tweets. Compared with studies about the Iranian elections (Beilin, 2009) and about the earthquake in China (Bradshaw, 2008), the number in this dataset could be too low. Filtering of tweets also depends on the structure of the virtual community. The ties in this twitter community could be lower than the ties in CoverItLive session. An analysis of the structure of a virtual Twitter community – showing central points using tools of social networks analysis[8] – could perhaps establish whether I have under estimated the self filtering possibilities and collective intelligence of Twitter.

[8] The possibilities to use a social network analyses for Twitter have been enlarged by the introduction of NodeXL, a template for Excel, which download the tweets in a network format. http://www.codeplex.com/NodeXL

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