



The Use of Hashtags in TV-Shows: Analysis and Guidelines

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Abstract. People watch TV with a second screen nearby and more than 30% of the time is used to perform social activities. This is why broadcasters are trying to exploit hashtags: they want people to talk about TV-shows in the social scenario. In this paper, we investigate how broadcasters use hashtags to promote their TV-shows. Indeed, we focus on 15 different TV-shows and we perform two different types of analyses: one investigates if broadcasters propose official hashtags and analyzes how these hashtags are promoted, the other investigates the characteristics of the Twitter conversations held around the considered TV-shows. Results show that broadcasters do not have a clear strategy in the social scenario: most of them do not exploit the synergy that can be created by linking the TV scenario to social and Web platforms. However, from the analysis of the Twitter conversations, we identified a successful case, whose analysis allowed us to outline some clear guidelines that broadcasters should employ when using hashtags to promote their TV-shows.

Keywords: Hashtags · TV-shows · Marketing · Twitter conversation

1 Introduction

The social scenario and the advances in Internet technologies changed the way we watch TV: in the past, the TV-set was the king of the living room and people watched TV-shows alone or with their family, but today everything has changed [1]. Young generations are no longer interested in the TV-set and migrated to streaming services that allow them to watch TV-shows on their tablets, smartphones or laptops. This migration is highlighted by a recent Nielsen Research [2]: from 2011 to 2016, 40% of young Americans moved to streaming services. Moreover, more and more people watch TV with a second screen nearby, that is with a tablet, a smartphone or a laptop at their side. For instance, recent researches show that 86% of people has a second screen in the nearby when

watching TV [3]. In particular, 81% has a smartphone in the nearby, 66% use a laptop/PC device when watching TV [4]. Furthermore, the proximity of these second devices is tempting: many studies highlighted that more than 30% of the attention time is focused on these devices [5].

In the attempt to re-catch the viewers' attention, broadcasters are trying to embrace the second screen scenario by suggesting official hashtags to create conversations around TV programs in the social scenario [6, 7]. A hashtag is an alphanumeric string preceded by the hashtag special character #. Originally introduced in Twitter, the micro-blogging platform that permits to post messages up to 140 characters in length, nowadays people use hashtags in any social platform to emphasize contents and to facilitate the message classification. For instance, a user who wants to emphasize that his/her post is about "social media" may use the hashtag #socialmedia within the message or within the description of the posted picture; similarly, a user who wants to browse for messages that talk about social media may use the hashtag #socialmedia as a research keyword. In summary, hashtags provide an effective way to specify the main topic of the message and to follow conversations on specific topics (e.g., a public event, a brand, a politician, etc.).

People use hashtags to browse for any type of content (e.g., from personal feelings to public critics, from meaningless messages to important updates) posted by any type of users (e.g., from ordinary people that share personal information with their friends to important executives that talk about economics, politics and corporations) [8, 9], and different studies highlighted that many conversations that are being held on Twitter concern television programs [10, 11].

In this paper, we investigate how broadcasters use hashtags to promote social conversations around their TV-shows. To the best of our knowledge, different studies analyzed social media conversations to understand peoples' opinions towards TV-shows, but this is the first paper that analyzes the broadcasters' use of official hashtags. In particular, we focus our study on the Twitter platform, as this platform is one of the most used in the social scenario to talk about TV-shows [11].

Our study focuses on 15 different popular TV-shows broadcast (either through free-to-air channels, digital subscription television companies or streaming platforms) in Italy during Spring 2017. The first investigation analyzes the official Web Page and the official Twitter account of the TV-shows to see if an official hashtag is available and advertised somehow. Then, we analyze the Twitter conversations around the hashtags.

Results show that broadcasters do not have a clear strategy in the social scenario: they create hashtags, but they exploit them badly or they do not exploit them at all. From the analysis of the Twitter conversations, we identify a successful case, whose analysis allowed us to outline some clear guidelines that broadcasters should employ when using hashtags to promote the interests around their TV-shows.

This paper is organized as follows. In Sect. 2 we present a brief overview of studies that consider the relation between the social and the TV scenario. In

Sect. 3 we show details of our investigation. A set of guidelines is presented in Sect. 4, whereas Conclusions are drawn in Sect. 5.

2 Related Work

The advances in mobile and Internet technologies and the proliferation of social platforms are changing the way we live, work and have fun [8,9,12–17]. With respect to the act of watching TV programs, the use of a second device to perform social activities is becoming very popular [10].

Recent studies highlighted that Twitter is often used by people when watching TV. Indeed, Mukherjee et al. [11] analyzed the Twitter conversations for a period of time and results showed that the subject of the conversations is usually related to TV-programs and also revealed that people post messages that can be grouped into five different categories: questions, responses, referrals, broadcasts and retweet. A subsequent interesting study [18] analyzed three different social platforms (i.e., Twitter, Instagram and Tumblr) during the Superbowl. Results showed that people talk about everything: the conversations were not only related to the game, but also towards music and commercials. Holmes et al. [5] showed that when people watch TV, 30% of their attention time is focused on the smartphone.

These studies show that people pay less attention to television programs. That is, even when people sit in front of a TV screen, they are not 100% focused on the TV program: the several mobile devices they have nearby distracted them. Therefore, it does not surprise that several studies have been aimed at capturing the attention of the viewers. For instance, Meloni et al. [19] focused on the Brazilian digital television system and proposed an application for second screen devices that allows users to send messages, and immediately display them on a digital television screen. Pagno et al. [20] elaborated a set of guidelines to help developers in the use of second screens. Lee et al. [21] proposed a second screen Web service framework based on multimedia package distribution. Knowles et al. [22] proposed a second screen application for interactive TV and investigated the user experience of interactive TV with the help of second screen applications. Results showed that the perception of second screen varies and it's content specific. The investigation also revealed that quizzes are positively perceived.

In such scenario, broadcasters and advertisers are trying to exploit the social platforms to promote their products. In particular, in addition to posting activities, the use of hashtags to link the TV product (either a TV program or a TV commercial) to social activities is receiving more and more attention. Since this approach is in its early stage, we think it is necessary to analyze the current scenario in order to understand if hashtags are efficiently used, if there are successful cases and what are the main features of these successful cases.

3 Experimental Investigation

To understand how broadcasters use the social scenario, we focus our study on 15 different popular TV-shows broadcast in Italy during Spring 2017. Note that, the considered TV-shows are available through free-to-air channels, digital subscription television companies and streaming platforms. The goal of the experimental investigation is to analyze how broadcasters use hashtags to promote TV programs and to engage viewers. In the following, we first analyze the official Web Page and the official Twitter account to see if an official hashtag is available and advertised somehow. Then, we collect data from Twitter to analyze the conversations around the official hashtags that are available.

3.1 The Use of Official Hashtags

To understand the role that hashtags have in the television scenario, we analyzed the official Web page of every considered TV-show in order to see if an official hashtag is displayed on the home page; then, we analyzed whether an official account is present on the Twitter platform and if the short description of the Twitter account reports the official hashtags.

Table 1 summarizes how broadcasters employ and use hashtags to promote TV-Shows. The results highlight the broadcasters' interest towards the social scenario: every considered TV-Shows has an official hashtag. This clearly indicates that broadcasters want to stimulate social conversations.

Table 1. The 15 monitored TV-shows.

TV-show	Official hashtag	Visibility on Web page	Visibility on Twitter
13 Reasons Why	#13reasonswhy	<input type="checkbox"/>	<input checked="" type="checkbox"/>
American Horror Story	#americanhorrorstory	<input type="checkbox"/>	<input type="checkbox"/>
Breaking Bad	#breakingbad	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fargo	#fargo	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Game Of Thrones	#gameofthrones	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Grey's Anatomy	#greysanatomy	<input type="checkbox"/>	<input type="checkbox"/>
Modern Family	#modernfamily	<input type="checkbox"/>	<input type="checkbox"/>
NCIS	#ncis	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Prison Break	#prisonbreak	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Riverdale	#riverdale	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sherlock	#sherlock	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Sons of Anarchy	#sonsofanarchy	<input type="checkbox"/>	<input type="checkbox"/>
The 100	#the100	<input type="checkbox"/>	<input type="checkbox"/>
True Blood	#trueblood	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Twin Peaks 2017	#twinpeaks2017	<input type="checkbox"/>	<input checked="" type="checkbox"/>

However, the analysis also reveals the misuse in promoting the hashtags through Web pages: only one TV-show (i.e., “Prison Break”) has the official hashtag displayed on its home page. The analysis also highlights that some broadcasters (5 out of 15) do not advertise the official hashtags on the official Twitter account. Figure 1 shows the descriptions of two Twitter accounts: one promotes the official hashtag and one doesn’t.



Fig. 1. Description of the Twitter account. The example on the left clearly displays the hashtag, whereas the example on the right does not mention the official hashtag.

These results show that broadcasters consider both the Web and the Social scenario to promote and to engage viewers towards conversation around TV-shows. However, we notice a misuse of the social platform, as Web and social are considered two separate worlds that do not interact with each other: broadcasters did not exploit the synergy between Web and Social. Needless to say, this is a bad practice to promote TV-shows and to create engagement with the audience.

3.2 Conversations Around the Official Hashtags

To investigate whether people use the official hashtags to talk around TV-shows, we listened to the Twitter conversations centered around the 15 TV-shows (e.g., “13 Reasons Why”, “American Horror Story”, “Breaking Bad”, etc.). After a period of 30 days, we collected around 250,000 Twitter messages.

Conversations by Hashtags. The first goal of our analysis is to understand whether the broadcaster medium (e.g., streaming, satellite, free-to-air) affects the number of conversation around TV-shows. Figure 2 displays the top ten hashtags used by people who talk about the considered TV-shows in the dataset. “Prison Break” (#prisonbreak), a five-seasons serial drama that had four seasons broadcast from 2005 to 2009, and a fifth season aired in April–May 2017, leads the group with more than 20% of the Twitter conversations; three different TV-shows (i.e., “Games of Thrones”, “13 Reasons Why” and “The 100”) reach percentages between 5 and 10%. It is interesting to notice that the broadcaster medium does not affect the popularity of the conversations. Indeed, “13 reasons why” is available through a streaming platform, “Game of Thrones” is broadcast through a digital subscription television company, whereas free-to-air channels broadcast “Sherlock”.

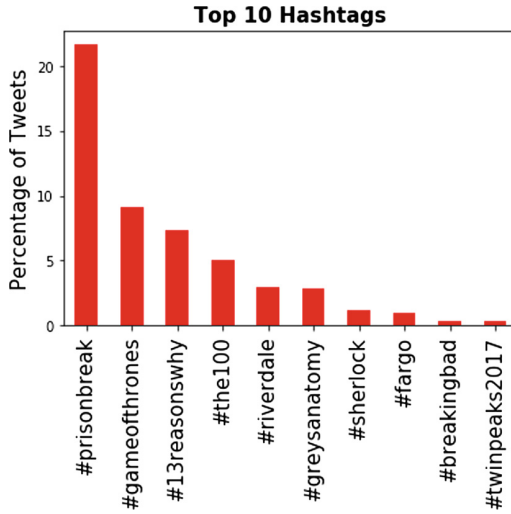


Fig. 2. Top ten hashtags used in the collected dataset.

Language. A second investigation analyzes the pervasiveness of official hashtags. Indeed, we want to understand what are the languages of the conversations. Figure 3 shows the top ten languages used in the collected dataset. It does not surprise that English is the king of the conversations (more than 65% of the conversation collected in the dataset are written in English), but it is interesting to note that people talk about TV-shows also in other languages. To deepen the analysis, Fig. 4 shows the top ten hashtags used by people who talk about TV-shows in Italian. The highest number of conversations is connected to the #13reasonswhy hashtag although the show title is translated from “13 Reasons Why” to “Tredici”. This example highlights the pervasiveness of the official hashtag.

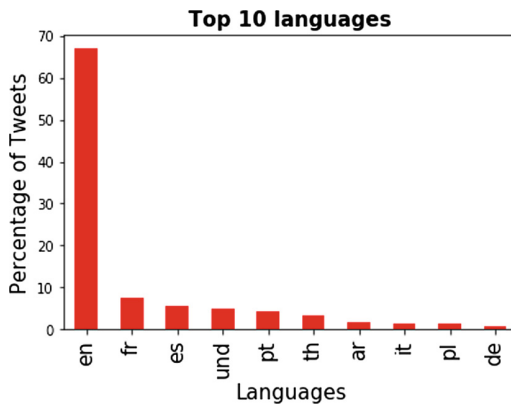


Fig. 3. Top ten languages used by people who talk about TV-shows in Twitter.

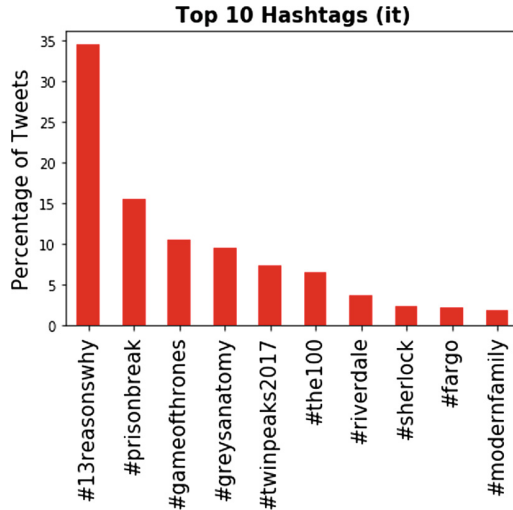


Fig. 4. Top ten hashtags (it) used by people who talk about TV-shows in Twitter.

Authors. To better understand who talk about TV-shows, Fig. 5 (left) shows the top ten authors (Twitter account) that talk about the considered TV-shows in the dataset. It is to note the low percentage reached, in general, by the accounts. There is no a specific account that leads the conversations, but these are produced by a considerable number of accounts. Among these accounts, we investigate the most retweeted ones. Indeed, in Twitter people can write their own message, but they can also contribute to the conversation by retweeting (i.e., posting again) a message wrote by someone else. The retweeting operation extend the visibility of the message. Figure 5 (right) shows the top ten most retweeted users. Some of the considered official accounts are among the most retweeted ones. @prisonbreak leads the group: almost 7% of the retweeted messages are written by the official account of Prison Break. Then, there are account related to TV-shows (e.g., @13reasonszone is the official “13 Reasons Why” fan account, @PBWritersRoom is the official Twitter account for the writers of the new season of Prison Break, @PrisonBreakFive is the French account of Prison Break) and private accounts.

Retweet Time. The @prisonbreak account is the most retweeted one. Therefore, we focus on this account to understand the reason why people retweet its messages. First, we investigate whether people retweet messages at specific day-time. Figure 6 shows that people retweet messages at every hour of the day (with the exception of the night hours), with two peaks around 18:00–19:00 and 22:00–23:00. Likely, these are the airing time of the TV-shows. Therefore, people use to tweet while watching the TV-show. To deepen the investigation, we analyze whether the messages produced by the @prisonbreak account have some specific characteristics. We observed that almost every written message (i.e. 99.8%)

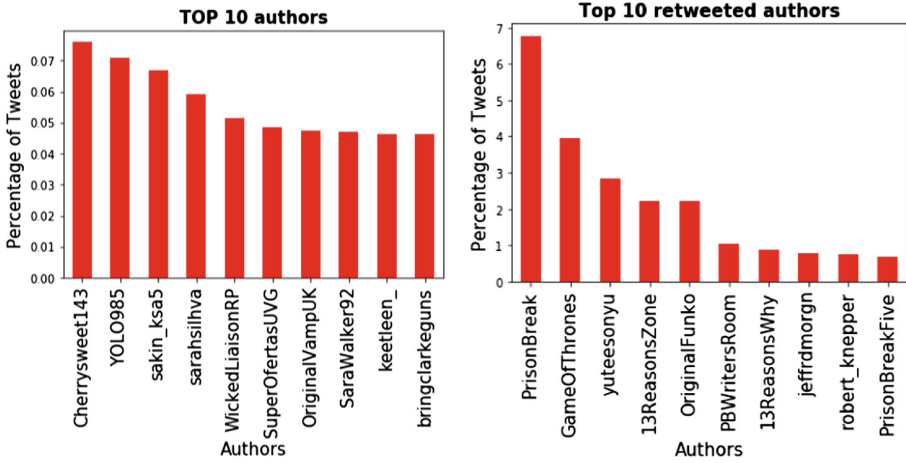


Fig. 5. Top ten authors who talk about TV-shows in the collected dataset (left) and top ten retweeted authors (right).

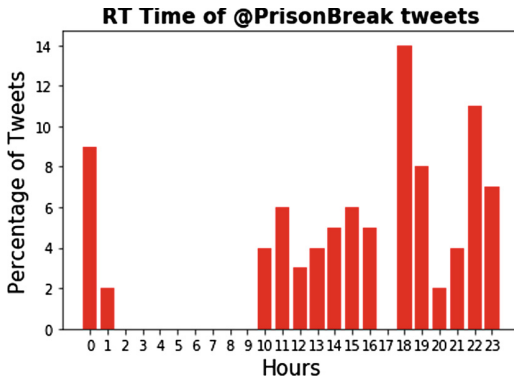


Fig. 6. Retweet time of tweets produced by the most retweeted Twitter account.

contains the official hashtag, most of them raise a question (e.g., “Missing Lincoln and Michael already?”, “Love the #PrisonBreak journey?”, etc.), almost all of them include a picture (e.g., simple image, an animated GIF or a screenshot that links to video), but what surprised us is that 58.2% of the messages asked people to retweet the message (e.g., “RETWEET if your heart broke in this moment”, “RETWEET if you love the #PrisonBreak family!”, etc.).

4 Guidelines

The analysis of the conversations observed in the dataset, allowed us to define few guidelines to help broadcaster towards the promotion of TV-shows and engagement of viewers.

- **Official Hashtag.** Create an official hashtag and an official Twitter account. Display the hashtag on the TV-show Web Page and on the description of the Twitter account. Promote the hashtag when promoting the TV-show (e.g., on flyers, newspapers/magazines ads, TV-promos, etc.).
- **Tweet.** Always use the official hashtag when writing a message on social media platforms.
- **Friendly.** Write a message as if you were talking to a person. Pose questions and express feelings.
- **Multimedia.** Enrich the message with multimedia contents. While images are ok, remember that people love animated GIF and video.
- **Ask.** Sometimes it is worth asking people to retweet a message. The @prisonbreak analysis shows that this technique is effective when associated with the sharing of an experience or a feeling. For example, “retweet if you feel happy”, “retweet if you’re watching ...”, “retweet if you’re playing football”, etc.

5 Conclusions

In this paper, we investigated how broadcasters use hashtags to promote their TV-shows or to engage viewers. We analyzed the Web and social scenario. Results showed that broadcasters do not exploit the potential of the social scenario. Although it is clear that they understood the potential of this scenario (all the analyzed TV-shows had an official hashtag), it is also clear that ideas are very confusing. The official hashtag is almost never advertised on the Web page and it is seldom used within the description of the Twitter account. The analysis of the Twitter conversations highlighted an interesting case, whose analysis allowed us to outline some possible guidelines that broadcasters may use when using hashtags to promote their TV-shows.

References

1. De Michele, R., Furini, M.: TV commercials: improving viewers engagement through gamification and second screen. In: 2017 IEEE Symposium on Computers and Communication (ISCC), July 2017
2. Nielsen: Total audience report (2016)
3. Stenger, M.: TV goes social: the rise of the second screen (2012). <http://socialnewsdaily.com/4193/tv-social-networks-use-infographic>
4. Google: The New Multiscreen World: Understanding Cross-Platform Consumer Behavior (2012). https://ssl.gstatic.com/think/docs/the-new-multi-screen-world-study_research-studies.pdf
5. Holmes, M.E., Josephson, S., Carney, R.E.: Visual attention to television programs with a second-screen application. In: Proceedings of the Symposium on Eye Tracking Research and Applications, pp. 397–400 (2012)
6. Montangero, M., Furini, M.: TRank: ranking Twitter users according to specific topics. In: 2015 12th Annual IEEE Consumer Communications and Networking Conference (CCNC), pp. 767–772, January 2015

7. Furini, M., Montangero, M.: TSentiment: on gamifying Twitter sentiment analysis. In: Proceedings of IEEE Symposium on Computers and Communication, pp. 91–96, June 2016
8. Furini, M., Tamanini, V.: Location privacy and public metadata in social media platforms: attitudes, behaviors and opinions. *Multimed. Tools Appl.* **74**(21), 9795–9825 (2015)
9. Furini, M.: Users behavior in location-aware services: digital natives vs digital immigrants. *Adv. Hum.-Comput. Interact.* **2014** (2014)
10. Courtois, C., D’heer, E.: Second screen applications and tablet users: constellation, awareness, experience, and interest. In: Proceedings of the 10th European Conference on Interactive TV and Video, EuroITV 2012, pp. 153–156. ACM, New York (2012)
11. Mukherjee, P., Wong, J.S., Jansen, B.: Patterns of social media conversations using second screens. In: Proceedings of the International Big-Data/SocialCom/CyberSecurity Conference (2014)
12. Bujari, A., Furini, M., Mandreoli, F., Martoglia, R., Montangero, M., Ronzani, D.: Standards, security and business models: key challenges for the IoT scenario. *Mob. Netw. Appl.* 1–8 (2017)
13. Egidi, L., Furini, M.: Bringing multimedia contents into MP3 files. *IEEE Commun. Mag.* **43**(5), 90–97 (2005)
14. Furini, M.: Mobile music distribution: a multichannel approach. *Adv. Multimed.* **2011** (2011)
15. Furini, M.: An architecture to easily produce adventure and movie games for the mobile scenario. *ACM Comput. Entertain.* **6**(2), 1–16 (2008)
16. Bujari, A., Furini, M., Laina, N.: On using cashtags to predict companies stock trends. In: 2017 14th IEEE Annual Consumer Communications Networking Conference (CCNC), pp. 25–28, January 2017
17. Furini, M., Mandreoli, F., Martoglia, R., Montangero, M.: IoT: science fiction or real revolution? In: Gaggi, O., Manzoni, P., Palazzi, C., Bujari, A., Marquez-Barja, J.M. (eds.) GOODTECHS 2016. LNICST, vol. 195, pp. 96–105. Springer, Cham (2017). https://doi.org/10.1007/978-3-319-61949-1_11
18. Mukherjee, P., Jansen, B.J.: Second screen interaction analysis for IRL events: phase-category investigation of the super bowl 2015 social soundtrack. In: 2016 7th International Conference on Information and Communication Systems (ICICS), pp. 13–19, April 2016
19. Meloni, L.F.P., Costa, G.C., Kobayashi, G., Kurashima, C.S.: Implementation of chat application for Ginga middleware technology using second screen. In: 2016 IEEE International Symposium on Consumer Electronics (ISCE), pp. 43–44, September 2016
20. Pagno, B., Costa, D., Guedes, L., Freitas, C.D.S., Nedel, L.: Guidelines for designing dynamic applications with second screen. In: 2015 XVII Symposium on Virtual and Augmented Reality, pp. 42–51, May 2015
21. Lee, S., Yoo, J., Han, G.: A second screen web service framework based on multimedia package distribution. In: 2015 IEEE International Conference on Consumer Electronics (ICCE), pp. 42–45, January 2015
22. Mu, M., Knowles, W., Sani, Y., Mauthe, A., Race, N.: Improving interactive TV experience using second screen mobile applications. In: 2015 IEEE International Symposium on Multimedia (ISM), pp. 373–376, December 2015