

Monitoring Public Attention on Environment Issues with Twitter Vigilance

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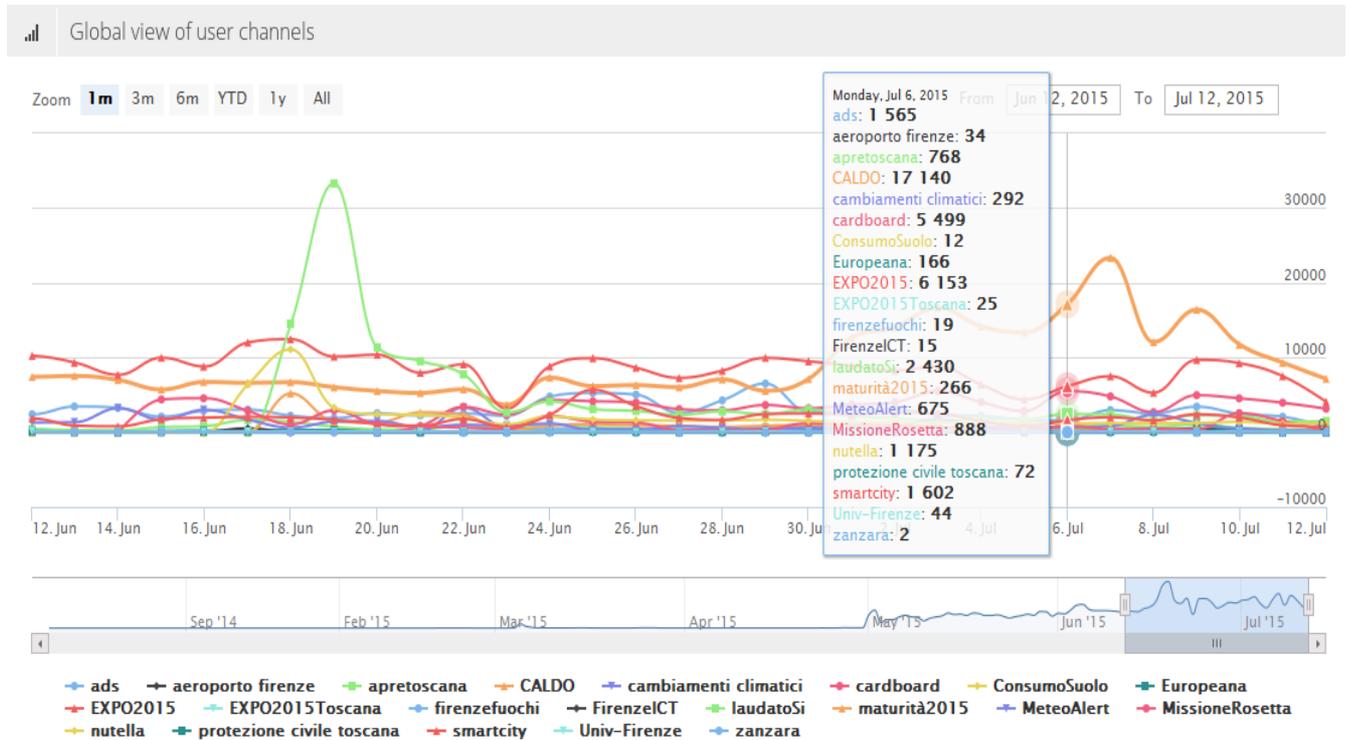
Extended abstract of the presentation

Nowadays Social Media (SM) Monitoring is a powerful mining tool to analyze the moods of people also gaining a deep view on the spread of information within society. The SM can be regarded as public channels where is possible to collect, quantify and shape public attention. As regard the smart city context the SM can be used for collecting information regarding the quality and the appreciation of services, the distribution and movements of citizens in the city context, the language evolution in the city, etc. In addition to the classical social and governmental issues, a large area of application can be the usage of social media for assessing local awareness on environmental topics or social impacts of certain unusual climatic events.

In this short summary, the collaboration among UNIFI DISIT lab, LAMMA and CNR IBINET was born to investigate and build specific metrics and reliable dashboard to monitor weather related Twitters. The study contributed to develop the DISIT Twitter Vigilance service giving sharable solution also adopted in other smart city projects (as [Sii-Mobility](http://www.sii-mobility.org) SCN www.sii-mobility.org, [RESOLUTE](http://www.resolute-eu.org) EC H2020 project <http://www.resolute-eu.org>, ...). The solution can be used for monitoring city services, critical events and conditions, user behavior, city response to events, etc. Different Channels opportunely named and corresponding to specific multi-keys queries of Twitter Firehouse are already active and operatively running on DISIT Platform. Most significant are: "Aeroporto di Firenze", "EXPO2015", "ConsumoSuolo", "Apretoscana" in regard to social events/topic or interest and other expressively built to detect attention and information on weather and climatic issues, like: "allerta meteo toscana", "Caldo", "protezione civile toscana", "Utenti meteo" "Cambiamenti climatici", etc. Some of the channels under monitoring are accessible for public perusal (according to the decision of the channel curator) in full respect Twitter SM data policies via <http://www.disit.org/tv/>, the reference page for help and news is <http://www.disit.org/6693>

As regarding the climate/weather and other environmental aspects, the channels created through DISIT Platform have been used to detect whether Twitter streams could work as a good social proxy of certain weather events, like during severe weather warning or heat wave. Information collected by mean of the weather related channels of the Twitter Vigilance Platform shows a strong temporal

association with meteorological and climatic processes (i.e., Daily volume of Twitter post), like it was well shown by the channel “Caldo” during July 2015. Twitter monitoring through specific channels offers also the opportunity to gain a certain understanding of people perception of environmental topics and the attention baseline on the different issues. It also presents useful insights to public officers about reliable information sources shared on via Twitter and tips on how to improve public communication on this topics.



DISIT Twitter Vigilance is an intelligent multi user tool for creating personal dashboards and study events and trends on Twitter that becomes a mining tool to "Twitter channels" contents. Each channel can be tuned to monitor one or more Search Queries on Twitter with a sophisticated and expressive syntax. Registered users of DISIT Twitter Vigilance tool and service are able to:

- Create one or more channels (“canale”), as reported in the figure each channel can be tuned to monitor one or more Search Queries on Twitter with a sophisticated and expressive syntax. The simplest query can be the single keyword, tag or user.
- Create and activate multiple channels, that may use new or the same Search Queries;
- Provide public access to their channels analysis (as in the channels accessible without registration);
- Download data sets (through API service) for refined analysis;
- Full access at the channel history of User's content per channel, per search, per users, etc.;
- Perform visual view throughput graphs and to export them in different graphic format;
- Perform analyses at level of channel, search, users, tweets, retweets, etc.:
 - o trends of the Search Queries as reported in the above figure;
 - o distributions on population and activities of users;
 - o distributions about other tags/keywords;
 - o geographic distribution of twitters of single or multiple channels;
 - o distributions regarding tweet and re-tweets.

A number of research activities on these data area under development.