

Guideline for the ONLINE S3 toolbox Tool/application Social Media Analysis

ONLINE S3 – 710659 – Guidelines for the pilot experimentation phase



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HISTORY OF CHANGES

Version	Date	Contributing partner	Summary of changes
Version 0.1	2016-10-07	RIM	Structure of the document, elaboration of required information as a template for all tools
Version 0.2	2017-08-07	AUTH	Filling of the template with information regarding the Social Media Analysis Application

DISCLAIMER

The opinion stated in this report reflects the opinion of the ONLINE S3 consortium and not the opinion of the European Commission.

ACKNOWLEDGEMENT

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BACKGROUND AND RATIONAL

The use of social media analytics in RIS3 can offer simple indicators for monitoring the RIS3 process and implement cross-regional comparative analysis by using data coming from social media sites, such as Twitter, Facebook, Instagram and LinkedIn. Using the knowledge extracted from Twitter, the RIS3 can be improved by: integrating valuable stakeholders' insights, opinions and feedback; detecting future trends; stimulating collaboration; and supporting evidence-based decision making processes by taking public opinion into account.

Figure 1 provides the rationale behind this ONLINE S3's application.

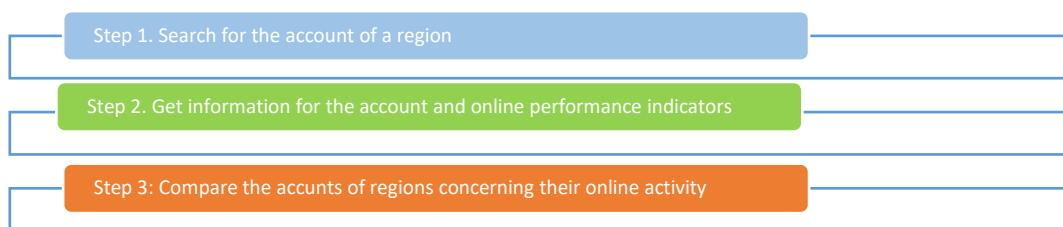


Figure 1 Rational behind this ONLINE S3 application

DESCRIPTION OF THE APPLICATION

Social media analytics can also help increase transparency and generate higher public participation rates than other conventional e-government applications. Moreover, it can play an even greater role in strengthening and widening the participation of and interaction with citizens. Finally, in the RIS3 context, social media analytics can help articulate the collaborative visioning process and better legitimate the selection of specific scenarios emerging during the strategy formulation.



Figure 2 Overview of the information flows within the Social Media Analysis Application



Figure 3 Overview of this ONLINE S3 application

BENEFITS TO KEY ACTORS AND STAKEHOLDERS

Considering the usability and impact of social media analytics in the public sector, which are shown by the multiple related projects EU has funded, the use of this method in relation to the design and implementation of Smart Specialisation Strategies can provide the governance system with the possibility to integrate valuable stakeholders' insights, opinions and feedback, detect future trends, stimulate collaboration and support evidence-based decision making processes by taking public opinion into account. This method can also help increase transparency. What is more, the World Bank (2012) reports that social media platforms generate higher public participation rates than other conventional e-government applications. These tools can play an even greater role in strengthening and widening the participation of and interaction with citizens. Moreover, in the RIS3 context, social media analytics can help articulate the collaborative visioning process and better legitimate the selection of specific scenarios emerging during the strategy formulation.

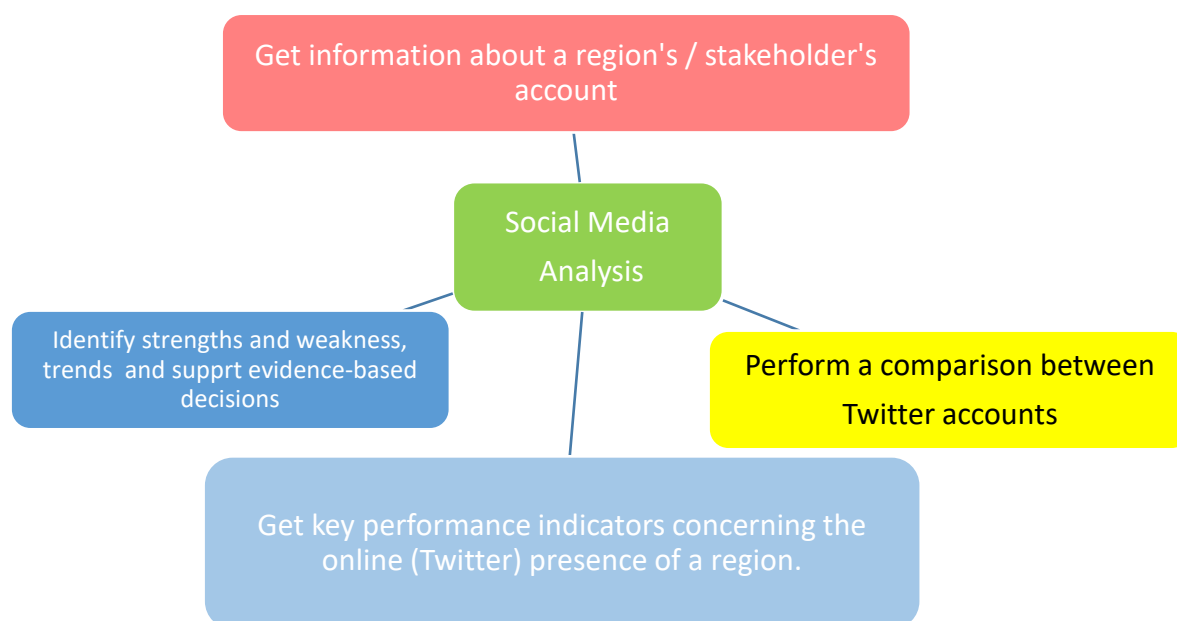


Figure 4 Benefits to stakeholders when using this ONLINE S3 application

KEY ISSUES AND REQUIREMENTS

The only Social Network that partially allows access to multiple accounts' information is Twitter. In order to use other Social Networks, the application should require the user's registration and even in this case, no comparison could be available. Twitter has a friendlier API, which is the main reason we are using it.

Still, Twitter's API has multiple restrictions. One of them is the rate-limit opposed by Twitter, which allows only a certain number of queries during a certain amount of time. After taking into consideration these limitations, we have developed a new noSQL database which gets automatically updated every time a user searches for an account.

The user can only choose an account, which already belongs to the list with the accounts for which we have permission to collect data. The application collects all the information posted in the original tweet of the account and performs some calculations on them. The collection of data begins on the day the user searches for an account for the first time and gets updated along the way. Thus, it is impossible to collect all the tweets for every account but only the ones that have been posted recently. Once we start collecting them though, we can keep track of every tweet.

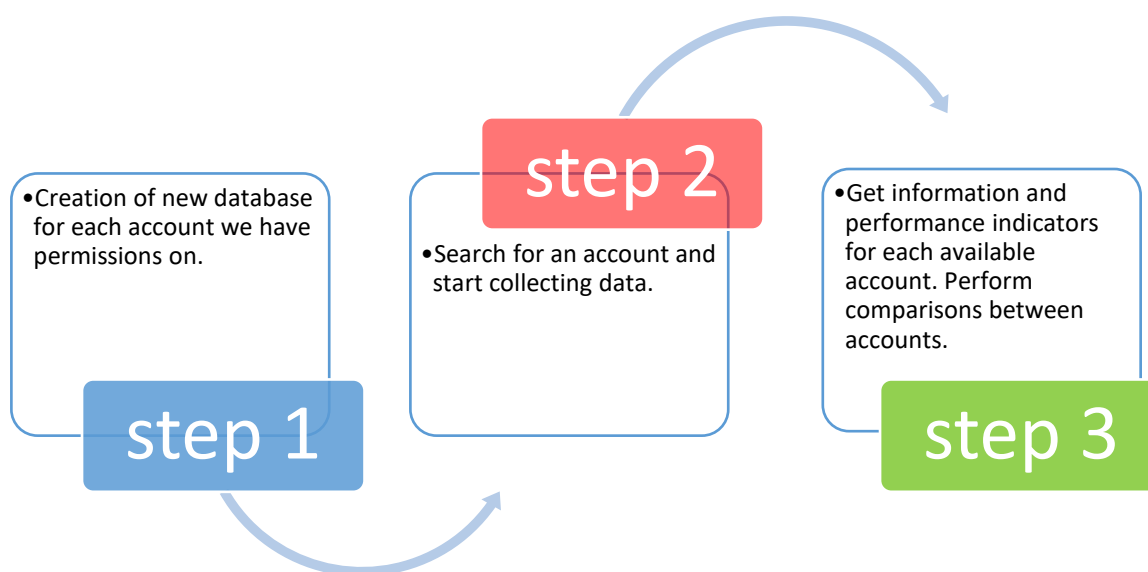


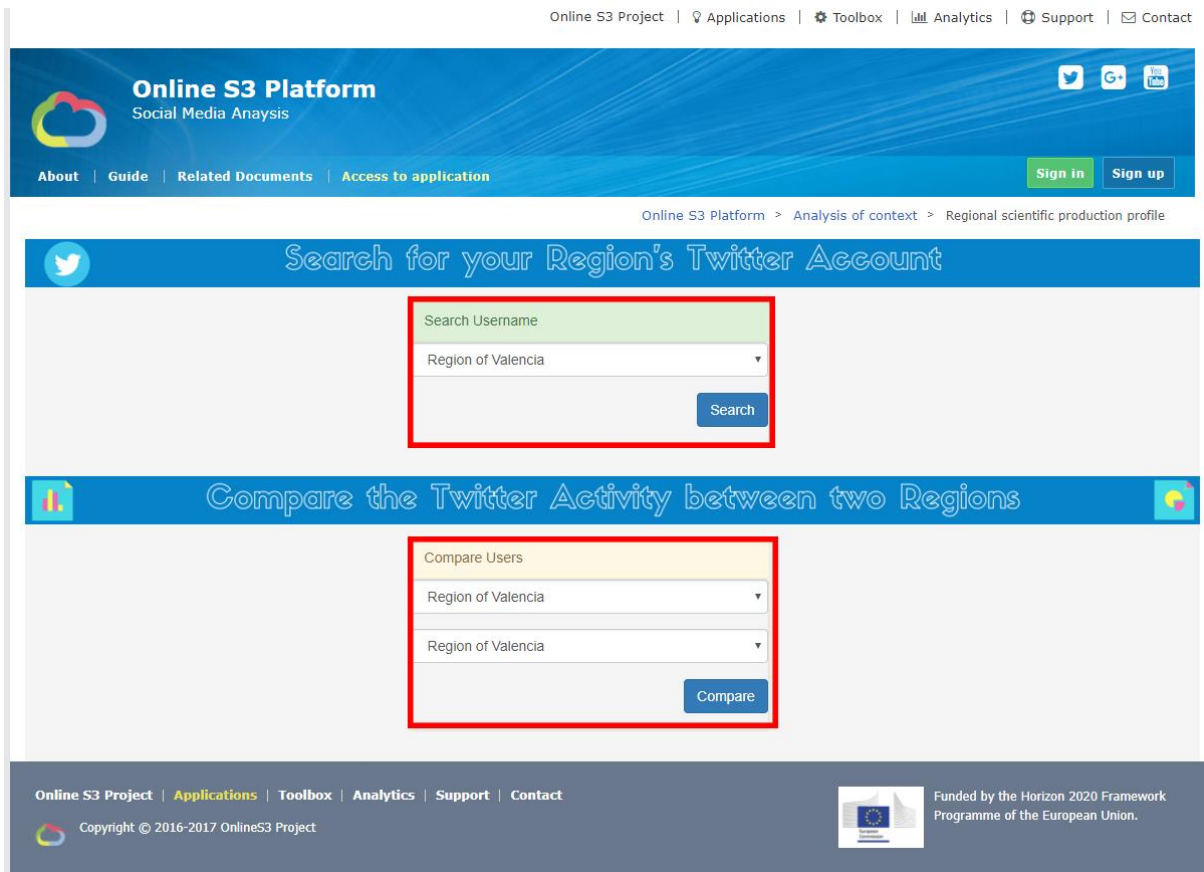
Figure 5 Key issues when using this ONLINE S3 application

A STEP-BY-STEP GUIDE

How to use this application step-by-step?

Step 1: Visit the main page of the Application

Once you visit the application page, two search boxes will be displayed. The first one **Search Username** is used to search for a specific account of a region. The second one **Compare Users** is used to compare two different regions' accounts.

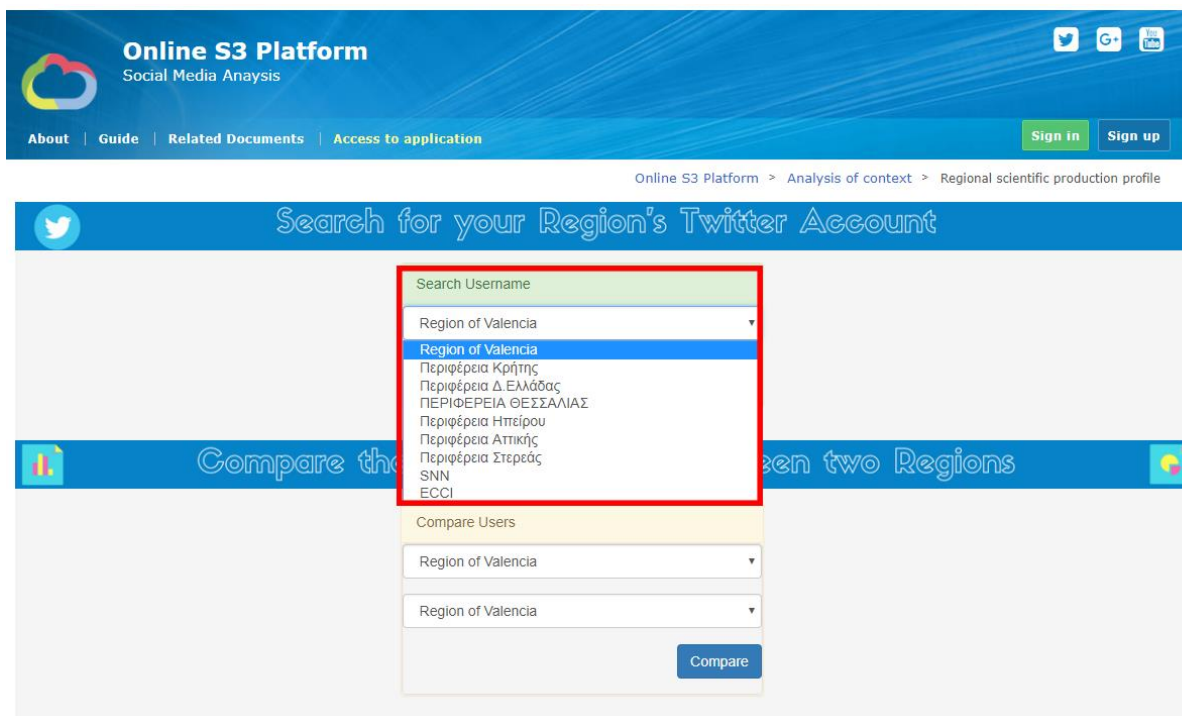


The screenshot shows the main interface of the Online S3 Platform. At the top, there is a navigation bar with links for 'About', 'Guide', 'Related Documents', and 'Access to application'. Below this, a header section displays the 'Online S3 Platform' logo and the text 'Social Media Analysis'. The main content area is divided into two sections. The first section, titled 'Search for your Region's Twitter Account', features a 'Search Username' input field, a dropdown menu currently showing 'Region of Valencia', and a 'Search' button. The second section, titled 'Compare the Twitter Activity between two Regions', contains a 'Compare Users' section with two dropdown menus, both currently showing 'Region of Valencia', and a 'Compare' button. The footer includes project information, copyright details, and a logo indicating funding by the Horizon 2020 Framework Programme of the European Union.

Figure 6 Visit the main page of the application

Step 2: Choose the region of interest, using the drop down menu

The user can select an account among the provided list. All the accounts that will be available will refer to those of regions or pilots of the Online S3 project.



The screenshot shows the 'Online S3 Platform' interface. At the top, there is a navigation bar with links for 'About', 'Guide', 'Related Documents', and 'Access to application'. Below this, a breadcrumb trail reads 'Online S3 Platform > Analysis of context > Regional scientific production profile'. The main section is titled 'Search for your Region's Twitter Account'. A dropdown menu is open, showing a list of regions: 'Region of Valencia', 'Region of Valencia', 'Περιφέρεια Κρήτης', 'Περιφέρεια Δ. Ελλάδας', 'ΠΕΡΙΦΕΡΕΙΑ ΘΕΣΣΑΛΙΑΣ', 'Περιφέρεια Ηπείρου', 'Περιφέρεια Αττικής', 'Περιφέρεια Στερεάς', 'SNN', and 'ECCI'. Below the dropdown, there is a 'Compare Users' section with two dropdown menus, both currently set to 'Region of Valencia', and a 'Compare' button.

Figure 7 Choose the region of interest

Step 3: Get information for the account the user has searched for

After choosing a specific region / account the application will automatically direct you to another page that contains information for the account of interest, along with a variety of performance indicators. In Figure 3 for example, we have searched for "ECCI".

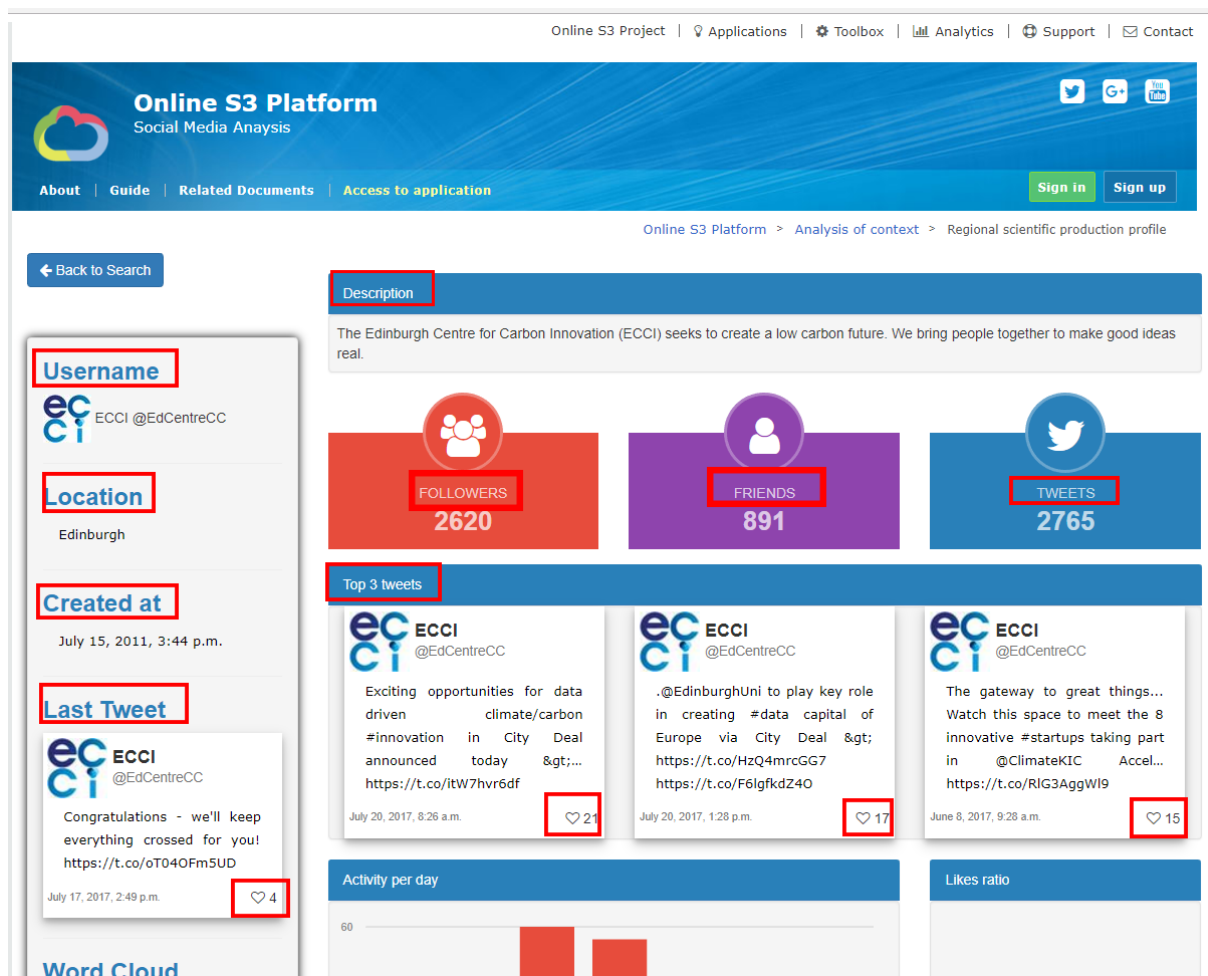


Figure 8 Information on each region

Step 4: Description of each part of displayed information

The page that is loaded after searching for a region or partner, includes a variety of information and related performance indicators. On top you can find the description of the user you have searched for (Figure 3). Right under the description the number of friends, followers and total tweets is displayed. These numbers are indicative of the influence and the online activity of the user. Usually, the more followers an account has, the better. Next, you can find the three tweets of this account that has been marked as favorite more times than any other. This is quite important, since the user can identify to which topics, hashtags, etc the audience is more responsive to. On the left side of the page, the user can find a series of plain information for the account, along with the account's latest tweet and its performance. In Figure 4 the user can find some performance indicators, which are described in details below.

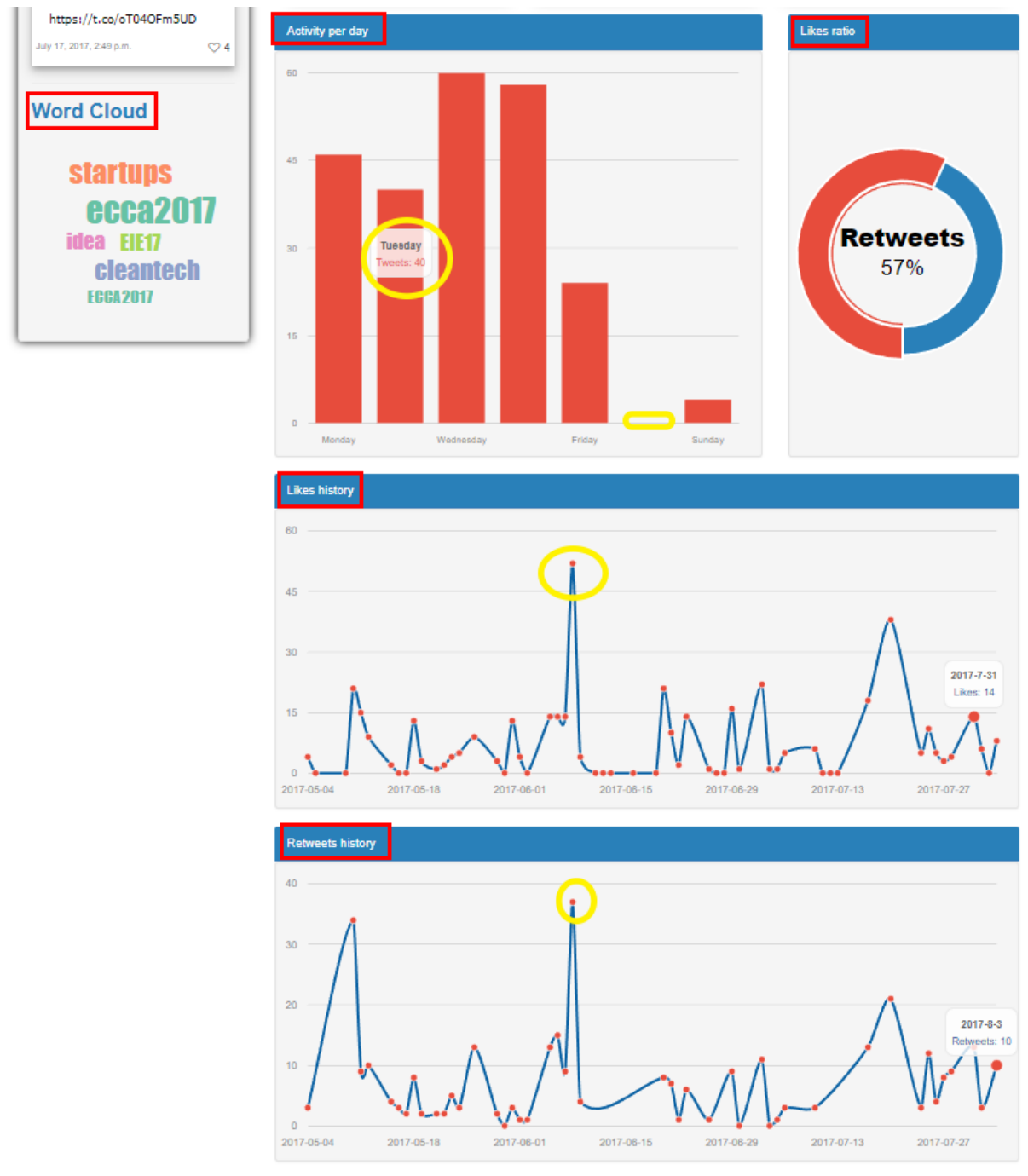


Figure 9 Performance indicators of the region's account

On the left there is a word-cloud which displays the hashtags that has been used more often. On the right side the user can find four charts.

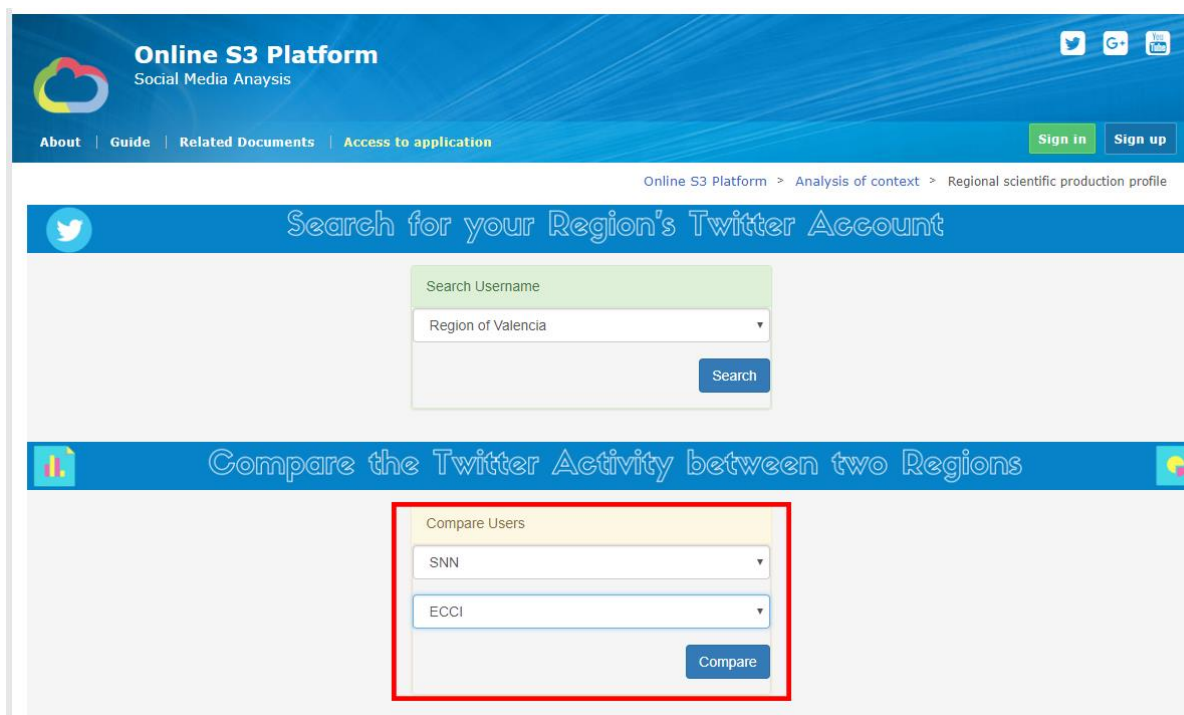
The **first** one displays the daily activity of the user. In other words, the average number of tweets the user posts per day. In *Figure 4* we can see that for example, the user "ECCI" does not usually post any tweets on Saturday.

The **second** one displays the Tweet-Retweet ratio of the account. To be more specific, it shows the percentage of tweets that are statuses of other accounts and retweeted by this account, over the ones that this account has posted and are originally his/hers.

The **third and fourth** one display the number of likes and the number of the tweets that have been retweeted by others, by day. In this example we can detect some anomalies on certain dates; thus, the potential user can identify that during these dates (in yellow circles) the ECCI account attracted a lot of other users. This may have been the result of a certain series of posts with a specific hashtag, a conference that "ECCI" has participated or a rather important announcement.

Step 5: Choose the user accounts you want to compare

Once you visit the main page of the application, choose the user accounts you want to compare by selecting their user names in the double drop-down menu available.



The screenshot displays the 'Online S3 Platform' interface. The top navigation bar includes links for 'About', 'Guide', 'Related Documents', and 'Access to application', along with 'Sign in' and 'Sign up' buttons. Below this, a breadcrumb trail reads 'Online S3 Platform > Analysis of context > Regional scientific production profile'. The main content area is divided into two sections. The first section, 'Search for your Region's Twitter Account', features a 'Search Username' input field, a dropdown menu currently showing 'Region of Valencia', and a 'Search' button. The second section, 'Compare the Twitter Activity between two Regions', contains a 'Compare Users' section highlighted with a red box. This section has two dropdown menus; the first shows 'SNN' and the second shows 'ECCI'. A 'Compare' button is located at the bottom right of this section.

Figure 10 Compare two accounts

Step 6: Get a straight comparison between the main performance indicators for two accounts

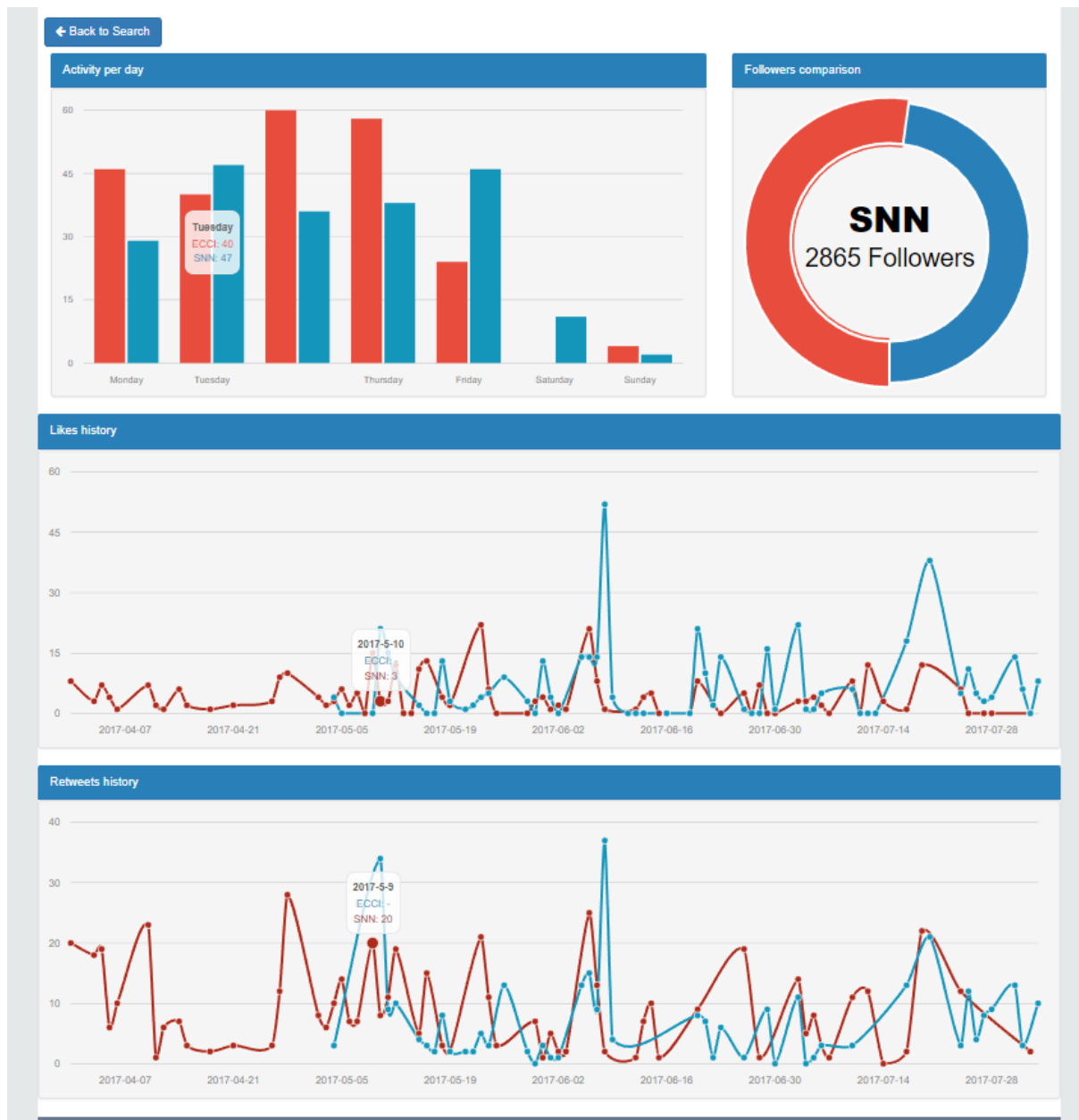


Figure 11 Get the results of the comparison

After selecting the accounts the user wants to compare, a new page with four charts will appear. The charts are the same as before, but include information for both accounts. The only thing that is different is the pie chart which displays the number of followers for each account, instead of displaying the tweets - retweets ratio. In Figure 6 a comparison between "SNN" and "ECCL" has been performed. It is obvious that these two accounts have a similar online activity. What's more, someone can observe that they reach a peak during the same period, so this may happen because of an event they both attended, or an action that both have been parts of.

FURTHER INFORMATION

Further information regarding the description of the method can be found on the site of the OnlineS3 project (www.onlines3.eu).

REFERENCES

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