European Territorial Cooperation Programme
Greece - Italy
2007-2013
INVESTING IN OUR FUTURE

Co-funded by the European Union (ERDF)
and by National Funds of Greece & Italy

INTERSOCIAL-I1-1.2, Subsidy Contract No. <I1-12-03>, MIS Nr 902010

European Territorial Cooperation Programme

Greece-Italy 2007-2013

INTERSOCIAL: Unleashing the Power of Social Networks for Regional SMEs

Deliverables D3.4.3: Tools for enhancing SMES social presence

Action 3.4: Social-Oriented Product Promotion Mechanisms

WP3: Development of Innovation Devices

Priority Axis 1: Strengthening competitiveness and innovation
Specific Objective 1.2: Promoting cross-border advanced new technologies

Financed by the European Territorial Cooperation Operational Programme "Greece-Italy" 2007-2013, Co-funded by the European Union (European Regional Development Fund) and by National Funds of Greece and Italy

Tools for enhancing SMEs social presence

Deliverable D3.4.3 Action 3.4

Workpackage WP3: Development of Innovation Devices

Responsible Partner:	UNIBA (P2)		
Participating Partner(s):			
SAT:	APCE (P4)		
WP / Task No.:	WP3	Number of pages:	15
Issue date:	2013/8/31	Dissemination level:	Public

Purpose: Deployment of tools for social web local enhancement. Literature review on theoretical background on trust and trust building in online stores and description of the features implemented in the ESA tool, an Enterprise Social Aggregator for SMEs.
Results: We describe the architecture, the implementation of the proxy server, and the features of the web and mobile clients developed in the scope of the ESA project.
Conclusion: ESA is a social aggregator that helps small-medium enterprises to implement and monitor their online social media marketing strategy. We have implemented two clients for the ESA tool: a WordPress widget and an Android mobile client. In the present document we describe its main features and use available for SMEs that aim at implementing and evaluating social media marketing strategies. ESA is an open source project and its release are available for download on Codeplex.

Approved by the project coordinator: 9/10/2013
Date of delivery to the JTS/MA: 20/10/2013

Document history

When	Who	Comments
2013/7/12	Nicole Novielli	Initial version
2013/10/9	Ioannis Fudos	Minor administrative corrections

Table of Contents

Software tools for automating the local deployment of social web functionality inside SMEs

Introduction

Social software is now playing a fundamental role also at work. It can be used both as an instrument for knowledge sharing in a company intranet and as a powerful marketing channel for establishing a direct communication with the customers. As a consequence, several companies are now investing in social media for building their social digital brand and establishing trust-based relationship with their customers.

Assessing the adoption of social media into an enterprise requires that commercial goals are well defined. On the one hand, it becomes crucial to provide tools that make it possible to easily manage company profiles on the various existing social media platforms. On the other hand, it is fundamental to constantly monitor the activity on the company profile in terms of return of the investment. This holds not only for large enterprises but also for small-medium enterprises (SME) that can benefit a lot by the buzz of social networks as a modern version of traditional word of mouth.

We propose the usage of an Enterprise Social Aggregator (ESA) that aims to put together all the information about a SME, including both information that a SME is directly posting and what customers say about the SME on social networks. Here, we briefly introduce the architecture and present some usage scenarios for SME.

The ESA tool is implemented to address the need of monitoring the social media marketing campaign by providing to SMEs with the possibility of accessing to analytics on the user activity on their social media profiles. Moreover, the ESA tool facilitate the managing the information on the social profiles by allowing to simultaneously update the information on different social network platforms (i.e. Facebook, Twitter, Google+).

In the following Sections we describe the architecture of the system and the main features of the ESA server and of the WordPress and Android clients.

Section 1: Architecture

The Social Aggregator follows a client-server architecture (see Figure 1). The server component, called Social Proxy Server, is an aggregator service that accesses the API of social networking services (SNS), using the HTTP/REST protocol. Being a proxy, its main duty is retrieving information from SNSs about registered users. ESA currently supports Facebook, Twitter and Google+ but the system is implemented to enable the possibility to easily integrate others among the most SNS such as Linkedin, FourSquare or Pinterest. For each service, a user is able to customize what information the proxy is

allowed to retrieve from the account (e.g., posts shared and profile picture, but not friends or followers).

The client component communicates with the Social Proxy Server through the HTTP/REST protocol. Clients may be implemented for a number of platforms, in a device---independent fashion, wherever an HTML5 browser is available.

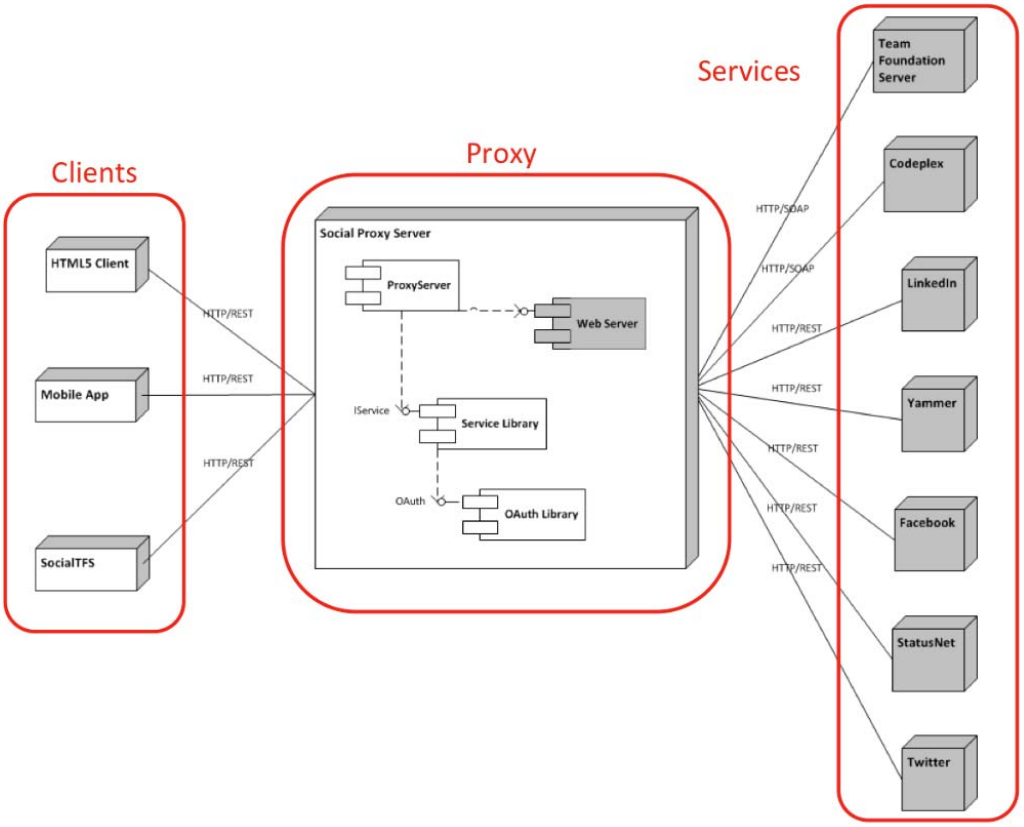


Figure 1: *ESA Client-Server Architecture*

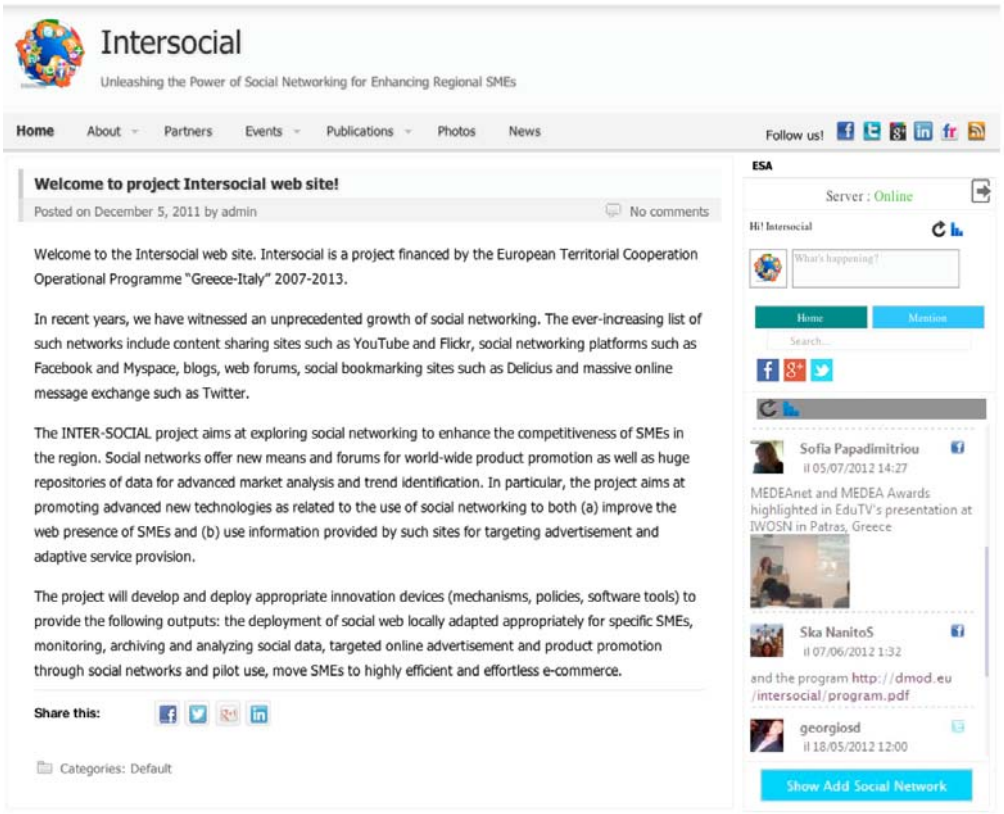
In addition, to exploit the large diffusion of smartphones and tablets, platform---specific apps, the architecture has been developed in order to support the development of clients for Android, iOS, and Windows Phone. Clients may be also developed as extensions of other applications, including content management systems (CMS), such and Drupal, and desktop application, such as Visual Studio. In the latter case, we already have implemented a prototype of an extension of Visual Studio, called SocialTFS [2]. We currently support WordPress, for which a plug-in has been developed and installed on the Intersocial website, as a demo (www.inter-social.eu), as shown in Figure 2.

Usage scenarios

In the following, some possible scenarios are presented related to the Foo company, an imaginary Italian SME in the food category.

Twitter as a source. The company wants to monitor the trend of tweets that mention Foo. In order to do so, a filter is set to monitor the tweets that use the #Foo hashtag or directly mention the official twitter account @FooSME. The Social Aggregator service generates a widget that can be integrated within a Wordpress extension, the content management systems adopted by Foo. The widget displays a rotating list of the latest filtered tweets, draws a graph to visually monitor the "mention" tendency over Twitter, and ranks the most "addicted" commenters.

Facebook as a source. The Foo SME uses the Social Aggregator to generate polls for the Foo's Facebook page. A poll lists those meals that have been most cited by fans in their posts. Most voted meals will end up in composing the special weekend menu. Voters of the winning menu combination might get a special discount.



Social Network Analysis. As a combination of the two previous scenarios, Foo uses the Social Aggregator to monitor customer activities on social media. In particular, Foo may access to statistics on the most popular posts, topics and contents as a support for understanding the trend of the user behavior with respect to the Foo SME business.

Figure 2: *ESA Wordpress client available on the Intersocial website*

ESA clients

We have implemented two clients for the ESA tool: a WordPress widget and an Android mobile client. Here we provide the description of the main features implemented in the two clients. The latest release of the ESA tool is available at the download section of the following project on Codeplex:

- ESA server and WordPress client: http://esa.codeplex.com/releases/view/98282;
- ESA mobile for Android: https://mobileesa.codeplex.com/

For installation guidelines please refer to Deliverable D3.2.3

ESA clients: login, profile management and timelines

We implemented the ESA web client as both a Wordpress widget and an Android mobile client, so as to provide full support to SMEs that want to aim at implementing and monitoring their social media marketing strategy by either incorporating the ESA widget in their website or accessing the ESA tool through mobile. Mobile ESA is an extension of the Enterprise Social Aggregator (ESA) project, which exploits mobile technologies to put together all the information about a SME, including both information that a SME is directly posting and what customers say about the SME on social networks.

The ESA clients communicate with the web server using a REST connection and relies on interface applications developed for the online social networking platforms supported (namely, Facebook, Twitter and Google+). For the installation guidelines, please refer to Deliverable 3.4.2.

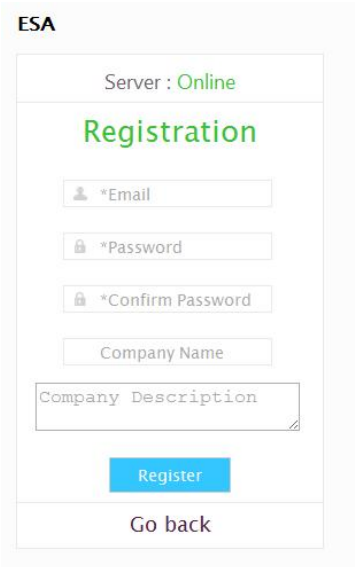


Figure 3 – *Registration form on ESA using the WordPress widget*

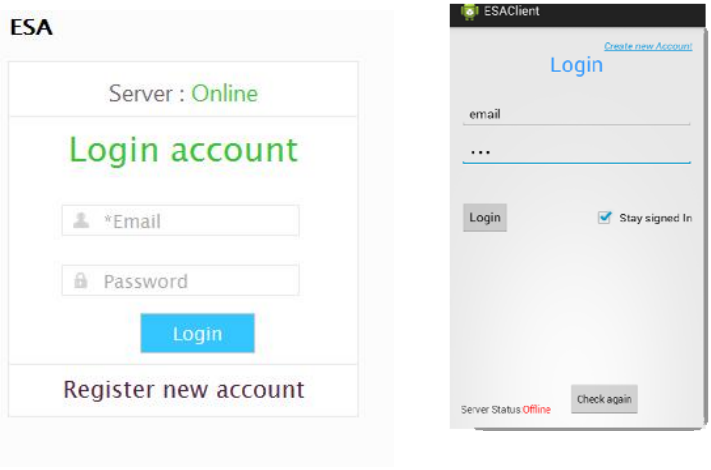


Figure 4 - *ESA Login using respectively the WordPress wodget (left) and the Android mobile client (right)*

Using the ESA client interface it is possible to sign up as a new company (fig. 3). Once logged in (figure 4) it is possible to associate/unassociated to the ESA account the company account on Facebook, Twitter and Google+ (fig. 5). Future developments of the project will involve implementation of support for Linedin, Pinterest and Foursquare. The profile picture in the ESA profile is retrieved from the profile onf the company on the first social networking platform associated and can be subsequently modified by the user, also choosing among the profile pictures used in the various social media profiles. The login interface always reports the server status in order to monitor the functioning of the ESA tool. When the company associated at least one of its social media profiles, the Home Timeline will be presented, once the login is executed.

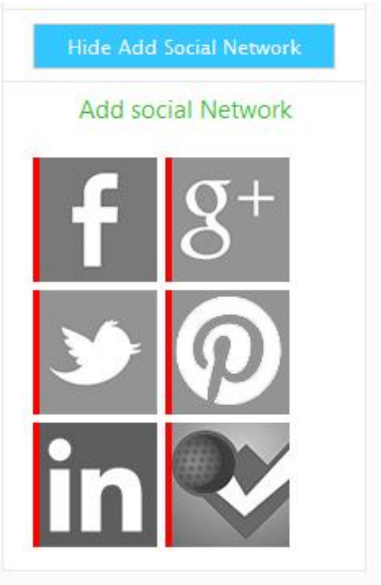


Figure 5 - *Associate/Unassociate the social media profiles of your SME to your company ESA account*

The Home Timeline is built by using all the aggregated posts and status updated shared on the company on social media. The posts are displayed in chronological order (fig. 6). All the information associated to each post is fetched from the source social network platform and displayed in the timeline (e.g. number of likes, sharings and/or retweets, author of the post, comments). ESA also allows users to update the Home Timline by cross-posting on the different platforms, as shown in fig. 7 (due to limitations of Google+ API, this function is currently available only for Facebook and Twitter).

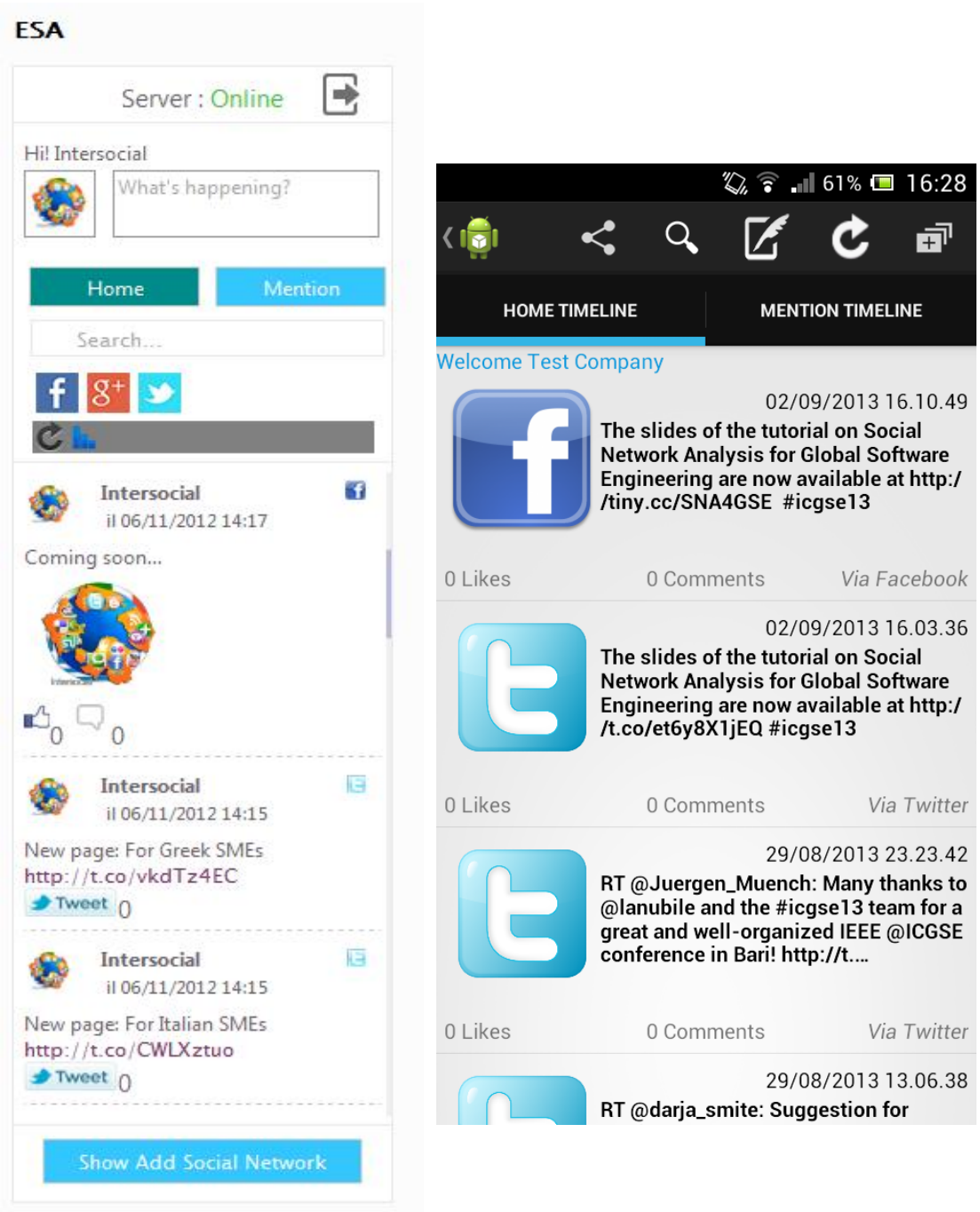


Figure 6 - *Home Timeline: the aggregated list of posts shared by the SME on social media using respectively the WordPress widget (left) and the Android client (right)*

By clicking on the 'Mention' button on the ESA interfaces, users can access the Mention Timeline (fig. 8), that is the aggregated collections of user generated contents shared on social media on which the company is mentioned (i.e. tagged). For each post, information about author, number of likes, sharings and/or retweets, author of the post, comments is also reported, date of publication and source social network.

In both timelines older posts are displayed by scrolling down. Moreover, a search function is available to search posts by keyword or hashtags (fig. 9).

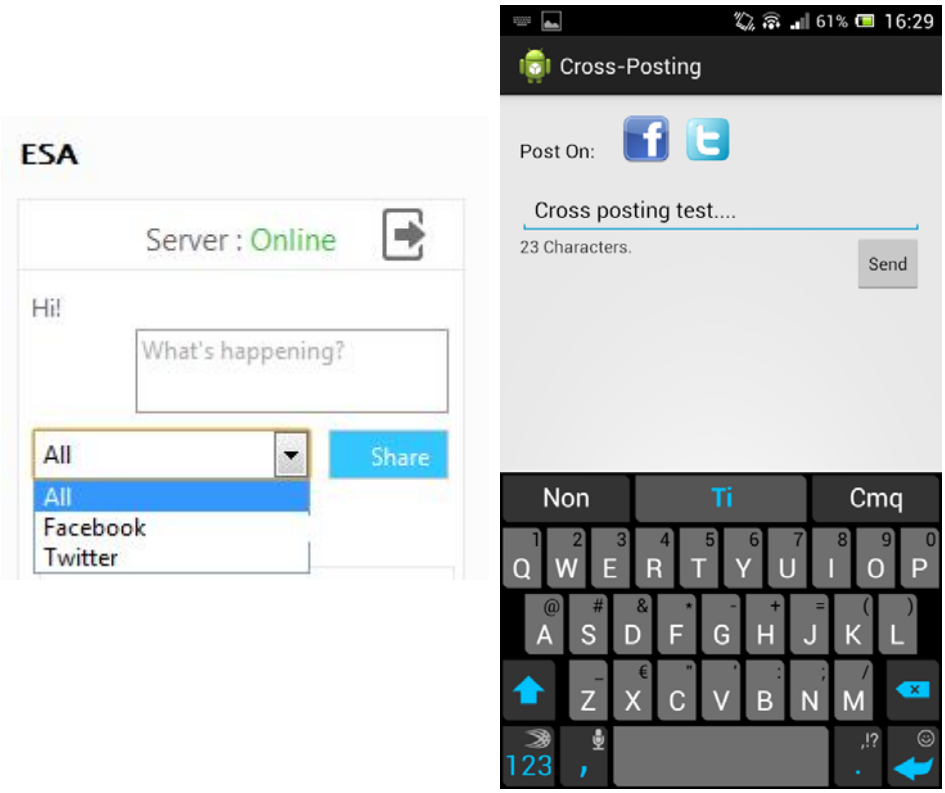


Figure 7 - *Cross Posting – sharing posts simoultaneously on multiple social networkign platforms on the two clients*

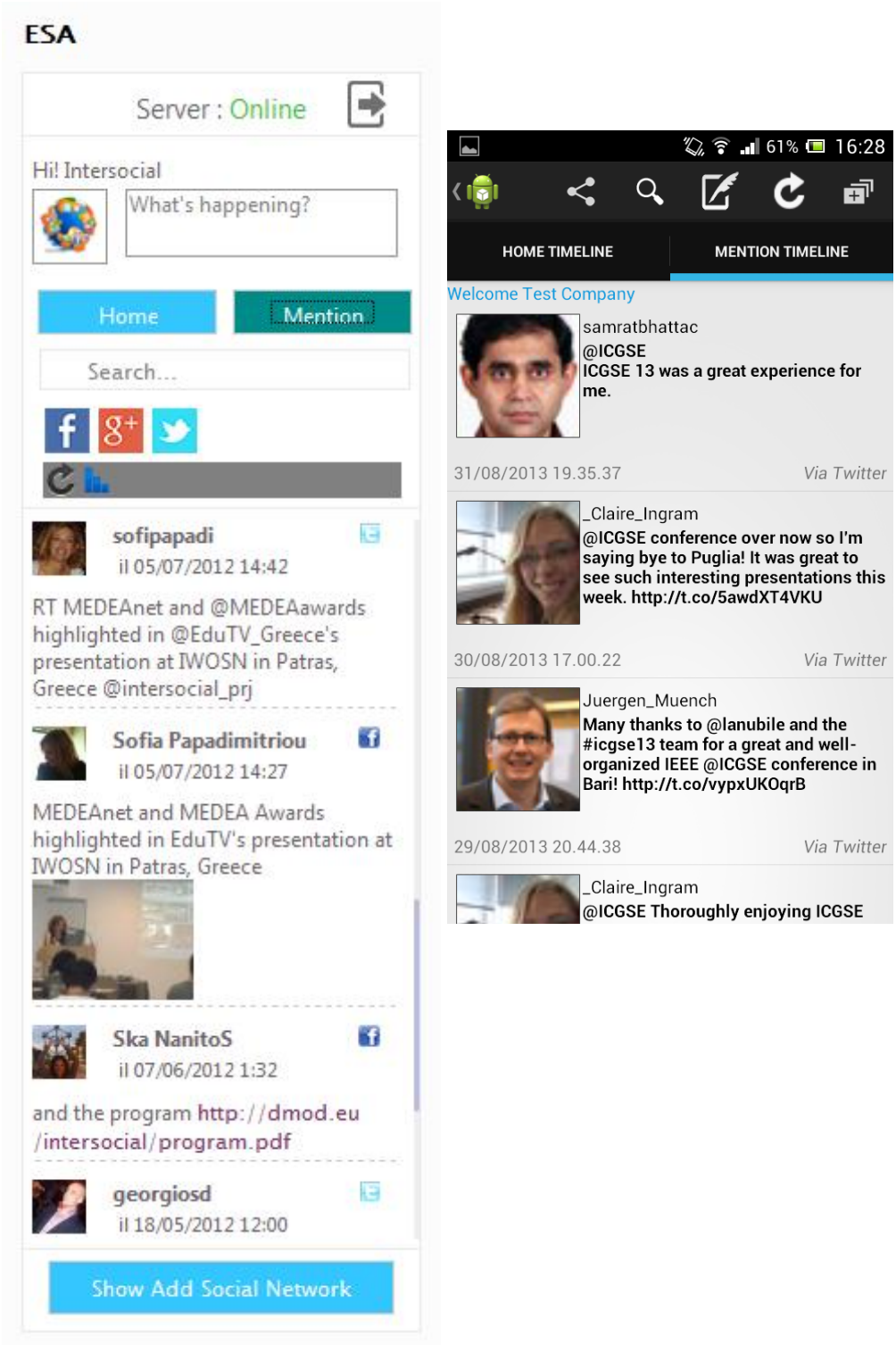


Figure 8 - *Mention Timeline: aggregated collection of others' posts in which the SME is tagged using respectively the WordPress widget (left) and the Android client (right)*

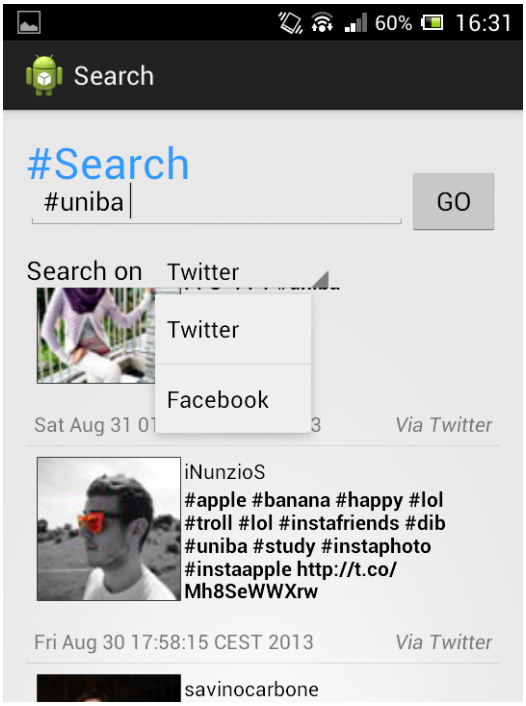


Figure 9 – *Searching user generated content using keywords and/or hashtags*

ESA insights: calculating statistics on the aggregated data from social media.

ESA offer the possibility of calculating statistics on aggregated data from social media, by exploiting the Facebook and Twitter API. In the following we presents the metrics implemented by ESA and their semantics. The measurement schema is described according to the Goal-Question-Metrics paradigm (GQM) for the formalization of measurement models [3]. The GQM model involves a conceptual level (GOAL), which is defined according to models of quality relevant for a specific problem or application domain. In the case of ESA, the goal ***G1*** is to support the evaluation of web marketing strategies involving the use of social media. According to the GQM, each goal is translated into questions, which define the operational level of the measurement approach consistently with the assessment or the achievement of the specific goal. At a quantitative level, metrics are finally defined and associated with every question to answer it in a measurable way.

In the case of ESA, we defined the following set of questions to address G1 (question are denoted as ***Q*** while associated metrics are denoted as ***M***):

- Q1: What is the performance and level of popularity of my social media profiles (i.e., the SME's Facebook page and Twitter profile)?
    - M1.1: Total Reach (Fig. 10) is the number of people who have seen your post. This metric considers any of the possible activities of the people in the community, including posts, new fans (i.e. like on the Facebook page or new followers on Twitter, mentions, check-ins. It is calculated by

considering the users' activity during the last month;

- M1.2: Page Engaged Users (Fig. 11), is the number of users who interact with the SME's profile in the last month, either by clicking on, liking or commenting on a SME's post;
- M1.3: Number of Mentions, it is analogous to M1.2 but calculated on Twitter mentions (Fig. 12).

- Q2: What is the level of engagement of my customers' community with respect to the SME's posts on the social media profiles? What are the posts with the higher level of popularity and users' enagement?
  - M2.1: List of individual posts of the SMEs on the Facebook page (Fig. 13). For each post ESA provides the Total Reach, calculated as for M1.2, that is by considering all the users' visualizations, cliks, likes, comments and shares on each single post, and the Engagement, for which all interactions are counted (clicks, likes, comments and sheares). The posts displayed in chronological order and Reach and Engagement are both provided;
  - M2.2: List of individual posts of the SMEs on the Facebook page (Fig. 14), with the corresponding Total Reach and Engagement, calculated as for M2.1. The posts displayed in chronological order and Reach and Engagement are both provided.

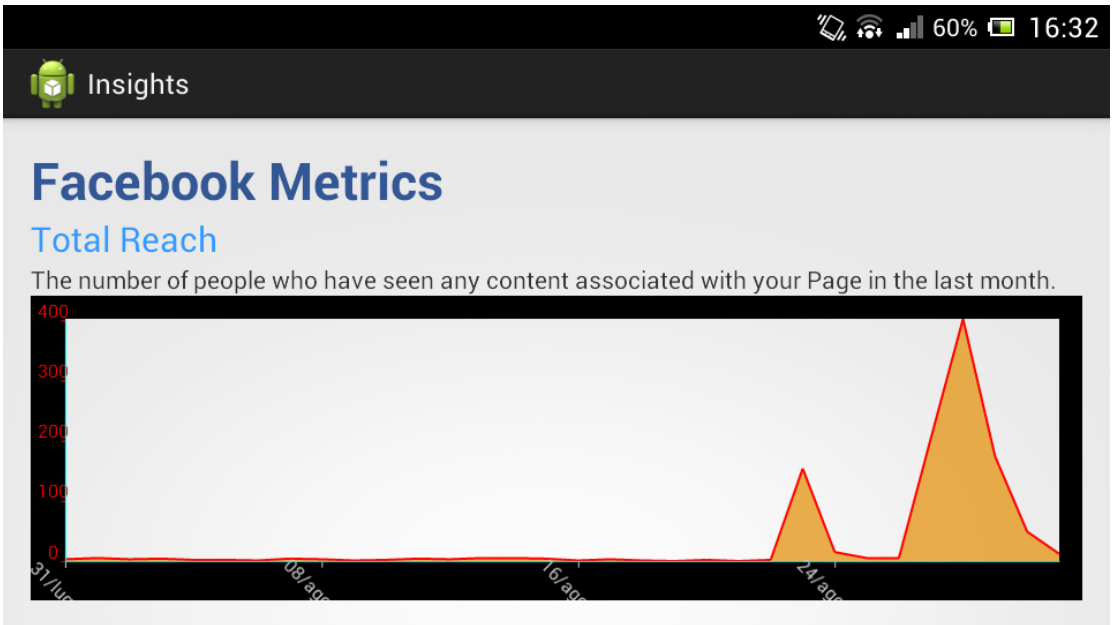


Figure 10 – *Total Reach of a SME's Facebook fanpage*

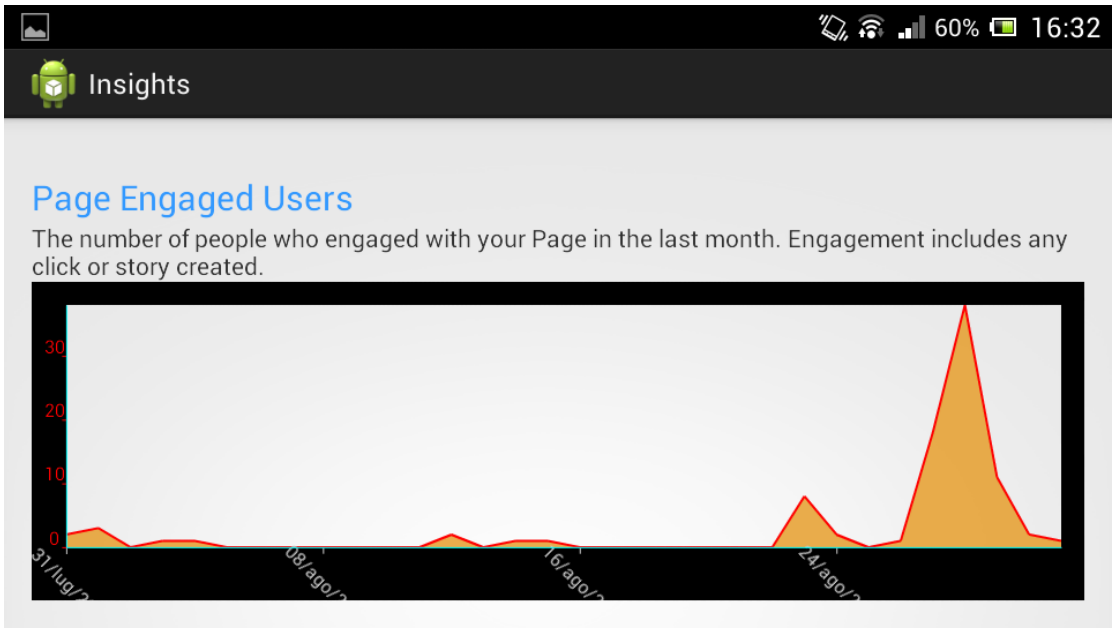


Figure 11 – *Page engaged users on a SME's Facebook fanpage*

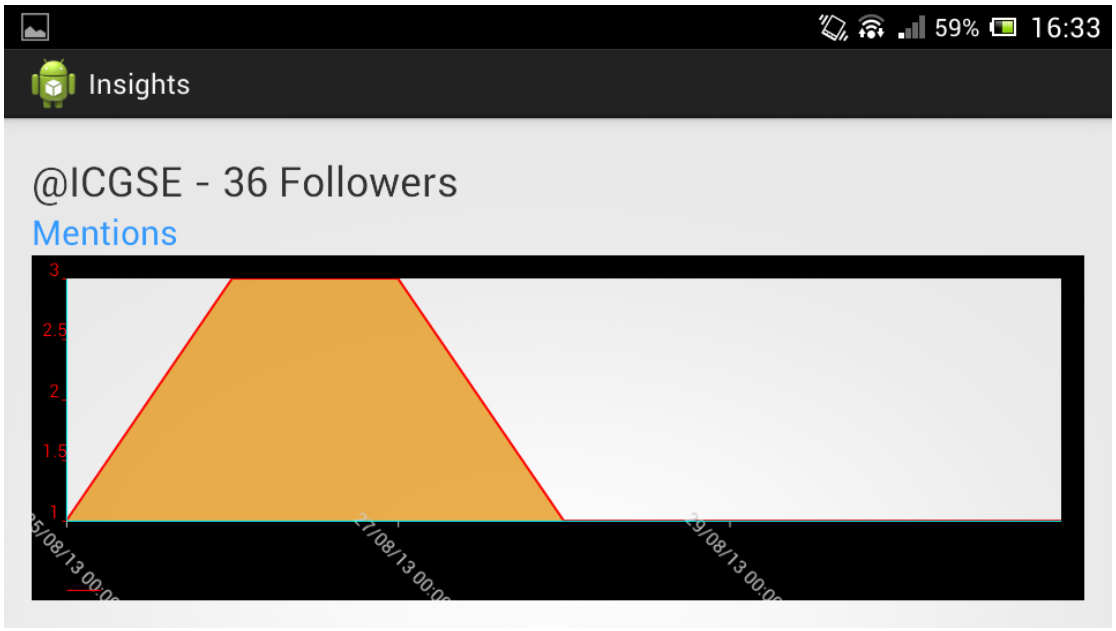


Figure 12 – *User's mentions on a SME's Twitter profile*

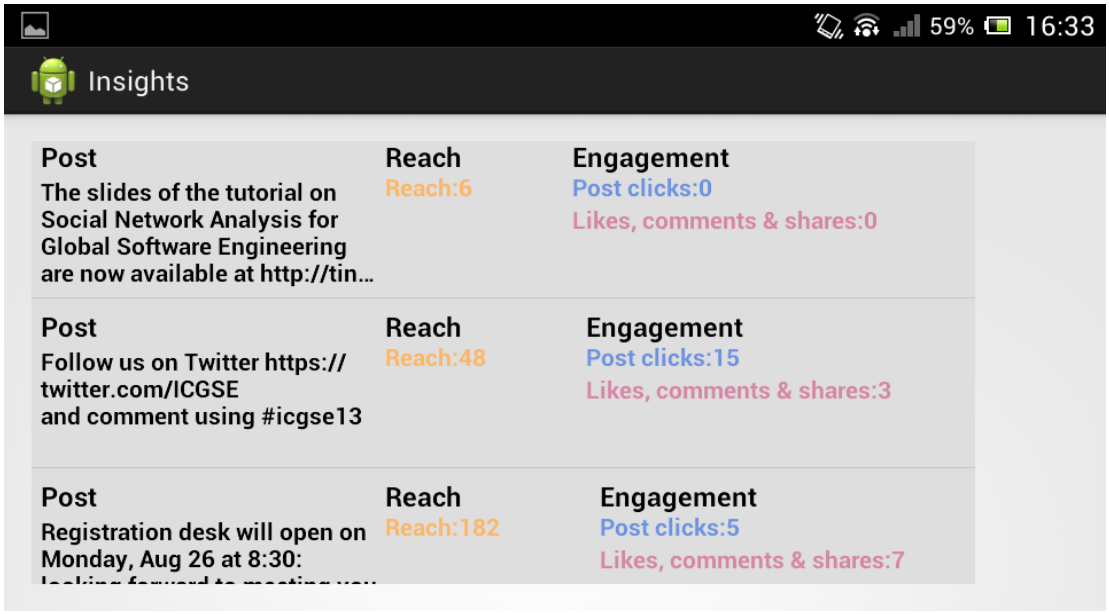


Figure 13 – *Reach of individual posts and User Engagement on a SME's Facebook fanpage*

Conclusion

In this report we have described the architecture and the features of the Enterprise Social Aggregator (ESA). The tool aim at satisfying the needs of SMEs that want to simultaneously manage and monitor the activity on their social profiles by aggregating the information available on the most famous existing social network platforms (namely Facebook, Twitter, and Google+). We implemented the ESA web clients as both a Wordpress widget and an Android mobile client, so as to provide full support to SMEs that want to aim at implementing and monitoring their social media marketing strategy by either incorporating the ESA widget in their website or accessing the ESA tool through mobile. ESA is an open source project and is available for download on Codeplex.

References

[1] Olivier Blanchard, Social Media ROI – Managing and Measuring Social Media Efforts in Your Organization. Que Publishing, 2011

[2] SocialTFS,http://socialtfs.codeplex.com/lastaccessedon14/05/201

[3] Basili, Victor; Gianluigi Caldiera, H. Dieter Rombach (1994). "The Goal Question Metric Approach" (PDF). Retrieved 2008-11-12.