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

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Purpose: Implementation of a tool suite for automating local deployment of social web (through wikis, blogs, forums, etc)

Results: Enterprise Social Aggregator (ESA), a software tool for facilitating the implementation and monitoring of social media marketing strategies, integrated with the most famous social networking online platforms.

Conclusion: This report describes the ESA client-server architecture and provides guidelines for the installation of the tool. The Wordpress client of ESA has been installed and is available on the Intersocial website.

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

We report on the architecture of ESA, an Enterprise Social Aggregator 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.

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 [1]. 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.

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.g. Facebook, Twitter, Google+).

In the following Sections we describe the architecture of the system and provide guidelines on the installation of both the ESA server and WordPress client.

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.

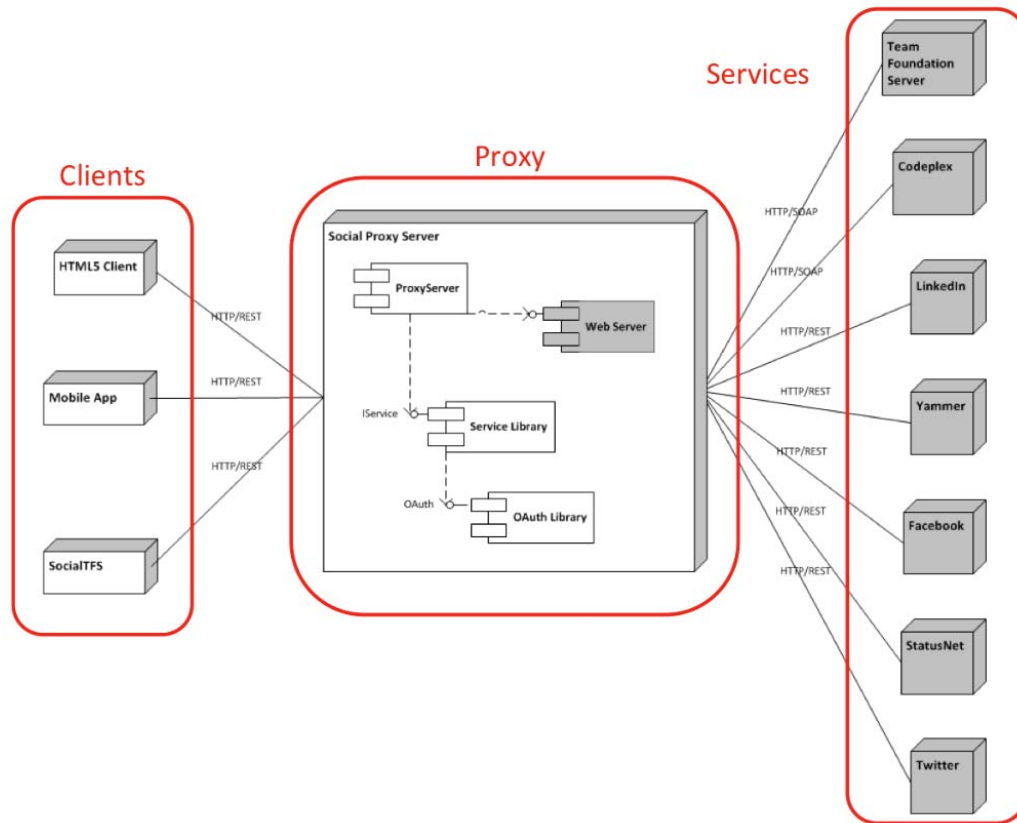


Figure 1: ESA Client-Server Architecture

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 as 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.

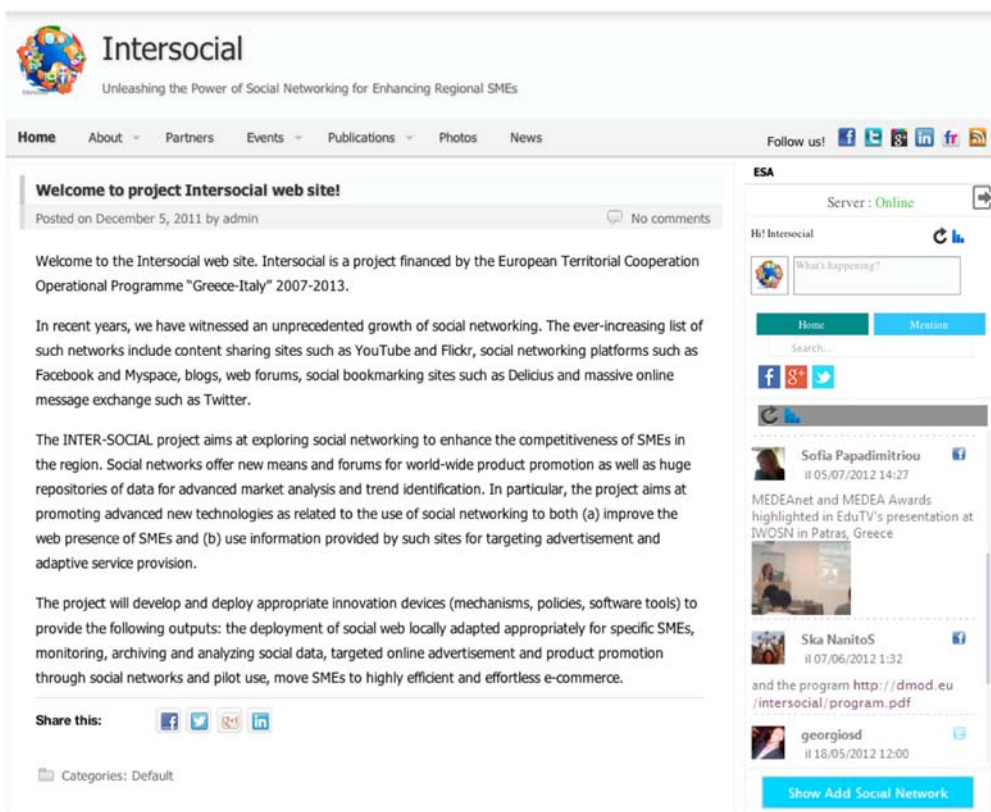


Figure 2: ESA Wordpress client available on the Intersocial website

Installation guidelines

Here we provide the guidelines for installing the ESA server and its Wordpress client implemented as a Wordpress widget. The latest release of ESA is available at the download section of the ESA project on Codeplex (<http://esa.codeplex.com/releases/view/98282>).

Installing the ESA Proxy Server

1. Download the latest release from the download section of the ESA project [<http://esa.codeplex.com/releases/view/98282>] and unzip the archive to a local folder.
2. Create the project folder C:\inetpub\wwwroot\ESA.
3. Copy the contents of EsaProjectRestTF (subfolder of the archive downloaded at step 1) in C:\inetpub\wwwroot\ESA.
4. Verify that the version 4 of the .NET framework is installed. Alternatively, the installer can be download from <http://www.microsoft.com/en-us/download/details.aspx?id=17851>
5. Install SQL Server 2008 R2
6. Launch SQL Server Management Studio
 - Create a new database named 'EsaDB'
 - Create a new query
 - Drag the ESADB.sql database into the new query, to import its contents.
 - Eseguire la query e verificare l'avvenuta creazione delle tabelle
7. Install the IIS (Internet Information Services) Manager from Windows services.
8. Launch IIS
9. In the 'Connection' menu on the left of the IIS Manager window, expand the servername to browse the directory tree. Right click on the website folder and add. Specify:
 - The name of the website (e.g. ESA)
 - Enter the path of the project folder ESA (es.: C:\inetpub\wwwroot\ESA\EsaProjectRest)
 - Enter the address of the machine and the port on which the service will

run

- Enter the host name (optional)

10 Enable directory browsing on IIS

(<http://www.hosting.com/support/iis7/enable-directory-browsing-in-iis-7>)

11. Browse the Application Pools (click on the corresponding item in the menu on the left)
12. Modify the ESA pool (right click on 'ESA' and then 'Advanced settings'). Set the following parameters:
 - .NET framework: 4
 - Managed pipeline mode = Classic
 - Identity = LocalSystem

12. Edit the Web.config file in the folder:

C:\inetpub\wwwroot\ESA new\EsaProjectRest\

a. `<addbaseAddress="INDIRIZZOIP : PORTA/ServiceRest.svc" />`

13. Modify the database connection string (IIS-> <name of your website> -> Connection string) by replacing "APAT" with the name of your host.

Modify the Windows firewall section by adding the TCP port previously specified on IIS as an exception.

Installing the ESA Wordpress Client

To install the Wordpress ESA Client, you need to have Php 5.3 and MYSQL 5.5 installed on your computer.

The system has been installed on a Windows computer, using the WAMP server.

(<http://www.wampserver.com/en/>)

1. Download and install (<http://wordpress.org/>) (online guide available at: http://codex.wordpress.org/Installing_WordPress).
2. Verify the Wordpress successful installation by accessing 'localhost/CARTELLAWORDPRESS' on your browser.
3. Download the client release from (<http://esa.codeplex.com/releases>)
4. Unzip the two folders "esa" e "esaclient_widget" from the folder of the client
5. Copy the "esa" folder into the main folder of Wordpress, as shown in Figure 3.
6. Copy the folder "esaclient_widget" in 'wp-content/plugin'

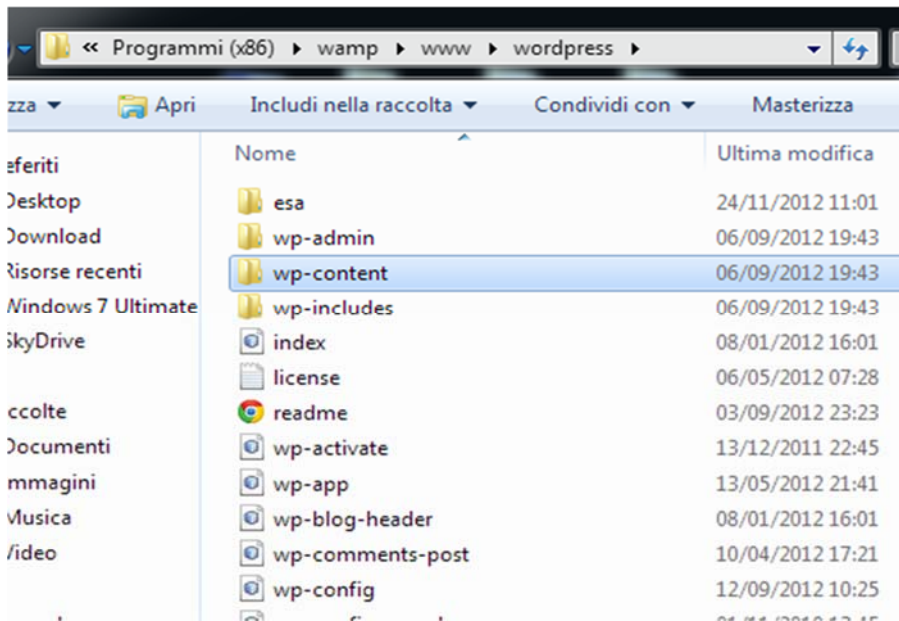


Figure 3: Installing the ESA widget for WordPress

7. Log-in as blog administrator by accessing the following:
localhost/CARTELLAWORDPRESS/wp-admin/admin.php (use the login and password you defined during the Wordpress installation procedure)
8. Add the Enterprise Social Aggregator widget in the ‘Plugin’ section of the menu on the left (click on ‘Activate’ as shown in Figure 4)

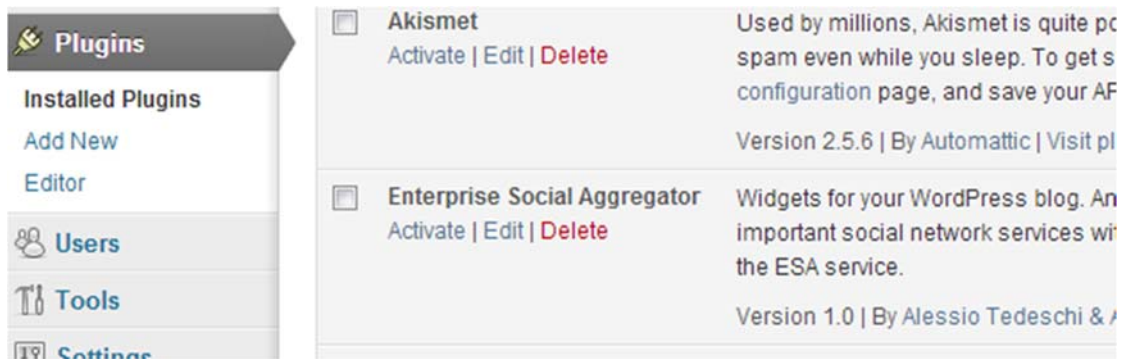


Figure 4: Activating the ESA Wordpress Widget

9. Change the settings of the widget in order make it visible into the homepage of the website. Access the ‘Appearance’ menu, drag the widget into the desired area of the webpage (e.g. in ‘Main Sidebar’ in figure 5).

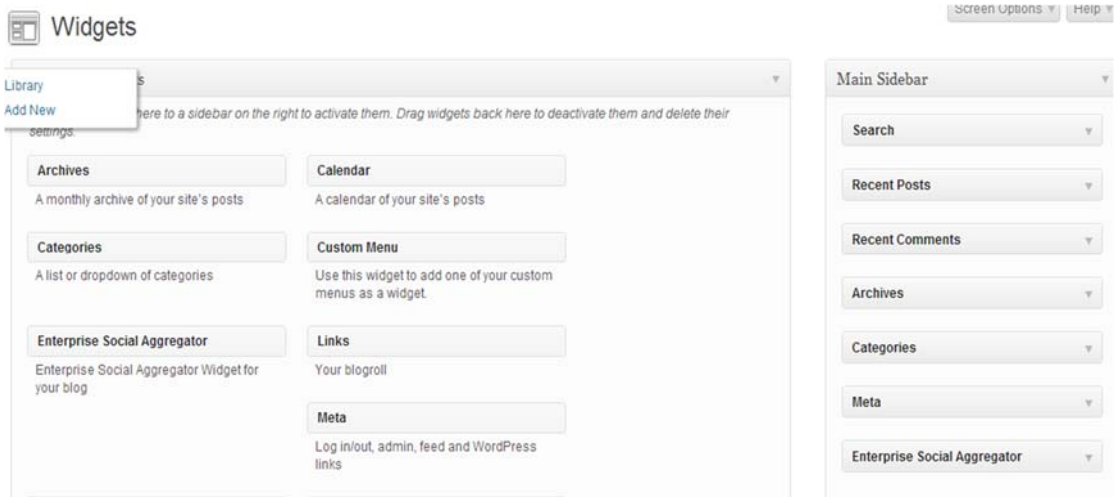


Figure 5. How to make the widget visible.

10. Modify the settings for the widget by clicking on the drop down menu 'Setting -> ESA Option' in the WordPress admin page (Figure 6).

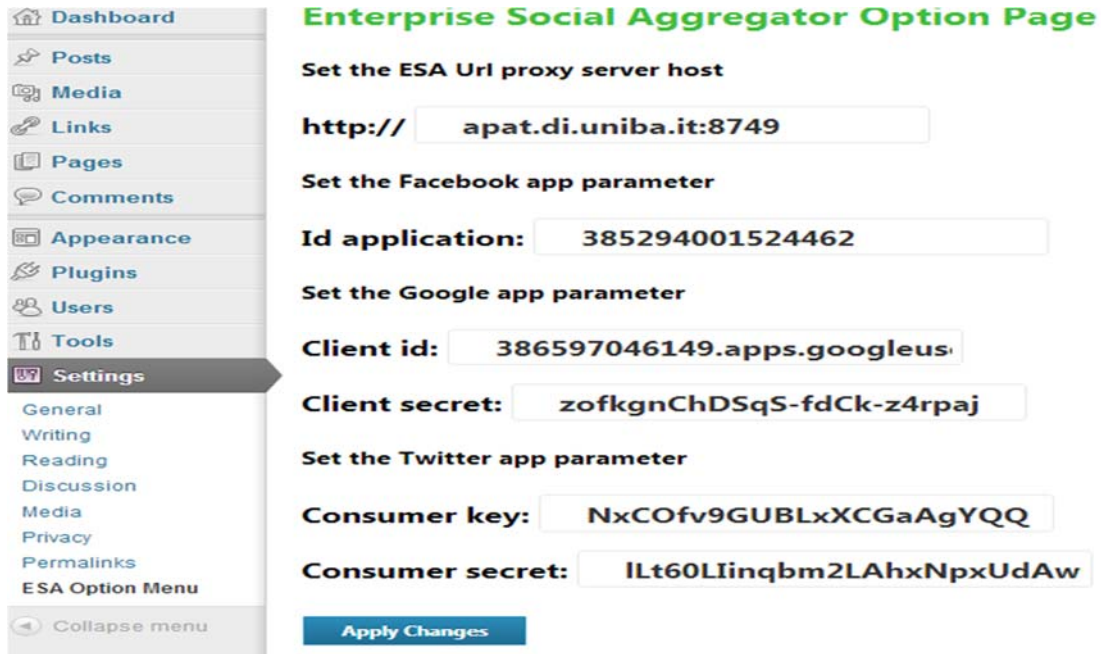


Figure 6. Setting the ESA Wordpress.

How to Create an ESA Application on Facebook

1. Access <https://developers.facebook.com/apps>
2. Login to Facebook
3. Create a new application
4. Enter the application name (please note that the names are unique)
5. Enter the namespace of the application and click on 'continue'
6. Edit the app domain field by specifying your host domain

How to Create an ESA Application on Twitter

1. Access <https://dev.twitter.com/>
2. Sign in using your Twitter account
3. Pass the mouse over your profile picture (top-right) to open the menu and select 'my application'
4. Create a new application
5. Enter the name and the description of the application
6. Enter the URL (address of the host on which you installed ESA Server) and append the following string (in bold):
`http://dummy.org/esa/Service/Twitter/twitter.php`
7. Enter the call back URL (address of the host on which you installed ESA Server) and append the following string (in bold):
`http://dummy.org/esa/Service/Twitter/twitter.php` and save
8. Access the settings for OAuth Tool, copy the 'Consumer key' and 'Consumer Secret' and paste them in the configuration page of ESA client as specified in the installation guide of the client for Wordpress.

How to Create an ESA Application on Google+

1. Access <https://developers.google.com/>
2. Access the 'API console' by clicking on the link in the 'Developer Tools' section, at the bottom of the page.
3. Create a new project
4. Click on 'API access' from the top-left menu in the Google apis webpage and click on "Create an oauth 2 client id"
5. Enter the name of the application and the URL of the homepage of your website.

Click on 'Next' to continue.

6. Choose 'web application' as application type
7. In "Your site or hostname", enter address of the host on which you installed ESA Server and append the following string (in bold):
<http://dummy.org/esa/Service/Google/google.php/oauth2callback>. Copy the client ID and the Client Secret and paste them in the settings of the ESA client, as described in the Wordpress installation guide.

Conclusion

In this report we have described the architecture of the Enterprise Social Aggregator (ESA) and provided guidelines for its installation. 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+).

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/> last accessed on 14/05/2012