Policy Gadgets Mashing Underlying Group Knowledge in Web 2.0 Media

D5.5 Exploitation Plan

Public Deliverable

Project Reference No.	248920
Deliverable No.	D5.5
Relevant work package:	WP5: Dissemination and Exploitation
Nature:	R=Report
Dissemination Level:	PU=Public
Document version:	1.0
Date:	26/4/2013
Editor(s):	Nikos Dimakopoulos, George Zisis (ATC)
Document description:	The document describes the policy formulated for the best possible exploitation of PADGETS results.

Document History			
Version	**Date**	**Reason**	**Revised by**
Draft v 0.1	24/04/2013	Contents Draft, Comments and Assignments	Nikos Dimakopoulos, George Zissis (ATC)
Draft v 0.2	30/04/2013	Initial Contents revision	All partners
Draft v0.3	24/05/2013	Initial Table of Contents Revised	Nikos Dimakopoulos, George Zissis (ATC)
Draft v 0.4	07/06/2013	Partners' Contribution on PADGETS Assets and Individual exploitation plans	All partners
Draft v 0.5	10/06/2013	First consolidated draft	Nikos Dimakopoulos, George Zissis (ATC)
Draft v 0.5	15/06/2013	Internal Review	All partners
Draft v 0.6	24/06/2013	Final draft	Nikos Dimakopoulos, George Zissis (ATC)
Final 1.0.0	26/06/2013	Final Review	Yannis Charalabidis, Euripides Loukis, Aggeliki Androutsopoulou, Vassiliki Diamantopoulou (AEGEAN)

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Executive Summary

This document constitutes the 'Exploitation Plan" of the PADGETS Project. According to the project's Description of Work, the Exploitation Plan is an official deliverable that guides project development in the most promising direction in terms of exploitation opportunities.

The Exploitation plan analyses the PADGETS business idea, the project tangible and intangible assets and presents the markets to be addressed, the potential for the specific PADGETS target markets, the market competitors, as well as the PADGETS competitive advantages, Strengths, Weakness, Opportunities and Threats (SWOT). The document also presents the commercial strategy for the project as well as a definition of the potential market within its target markets, including possible revenues and costs expected from PADGETS during the years after the project end.

The exploitation plan is a living document that will be constantly revised and updated throughout the lifespan of the project, under the responsibility of the Exploitation Manager with contributions of all project partners, in order to take into account project developments and market and technology evolutions.

It details the PADGETS offerings, an update on the market relevant to the project focusing on the competitors and the advantages of PADGETS over them, an updated commercial strategy mentioning a final ownership classification of the consortium partners, the licenses that can be adopted, a financial forecast related to profit and loss and the updated individual exploitation plans of all consortium partners.

1. Introduction

Based on the project consolidated list of the exploitable results, the deliverable defines the target groups for exploitation and draws the PADGETS exploitation path. It also describes the PADGETS provisions and presents the project Strengths, Weakness, Opportunities and Threats (SWOT) analysis to identify the pros and cons of the project results with respect to the competitive landscape.

Moreover, the present document details issues regarding the solutions, market landscape, target markets, marketing and financial forecast analysis for their commercialisation, as well as the Consortium partners' individual exploitation intentions post project end and is organised as follows:

The third Section provides an overview of the PADGETS offerings including both tangible and intangible results. Also there is a presentation of the PADGETS platform as a whole with a brief analysis of the first exploitation activities of the PADGETS assets eg. pilots with conclusions.

The forth Section summarises the market analysis, and Target markets for the PADGETS solution.

The 5th Section describes the Competitive Landscape for PADGETS, with an overview of the Main Competitors,

Section 6 presents the advantages and SWOT Analysis of the PADGETS solution.

This Section 7 briefly describes the most well-known business models that are relevant to PADGETS and are commonly utilized. Furthermore, it presents the PADGETS business approach and briefly addresses its relevant component and services.

The following Section 8 presents the PADGETS Commercial Strategy with respect to the overall promotion and selling approach to be followed, the Commercial exploitation scenarios, the Planning of product releases as well the PADGETS marketing plan.

Section 9 detail issues related to financial aspects and forecasts for the PADGETS solution, including market size, Sources of revenue, Sales forecast, Cost estimation and Profit and Loss.

Section 10 proceeds to detail the PADGETS Partners individual exploitation intentions and finally presents an analysis of PADGETS IPR issues and Licensing models.

2. The PADGETS assets

Asset/Module	PADGETS Dashboard

Asset/Module Overview

Dashboard is the Web interface of the platform, where a policy initiator can setup and manage a policy campaign. Padgets dashboard facilitates policy maker and their consultants with various features for managing policy campaigns. Figure 1 summarizes the basic features of Padgets dashboard: campaign manager, publisher, analytics, monitor, social media platform integration and 3rd party tools support.

Figure 1: PADGETS Platform Features

With this broad feature set PADGETS is the most comprehensive policy campaign management platform for politicians, policy maker, consultants and the public sector. With Padgets this target group is able to: grow politicians' audience, engage politicians' audience and derive decisions from citizens' engagement.

Managing Policy Campaigns

Policy campaigns are the heart of PADGETS. Therefore a policy maker and his consultants need a tool-set to manage the campaigns. This task is performed by the campaign manager which is represented in Figure 2.

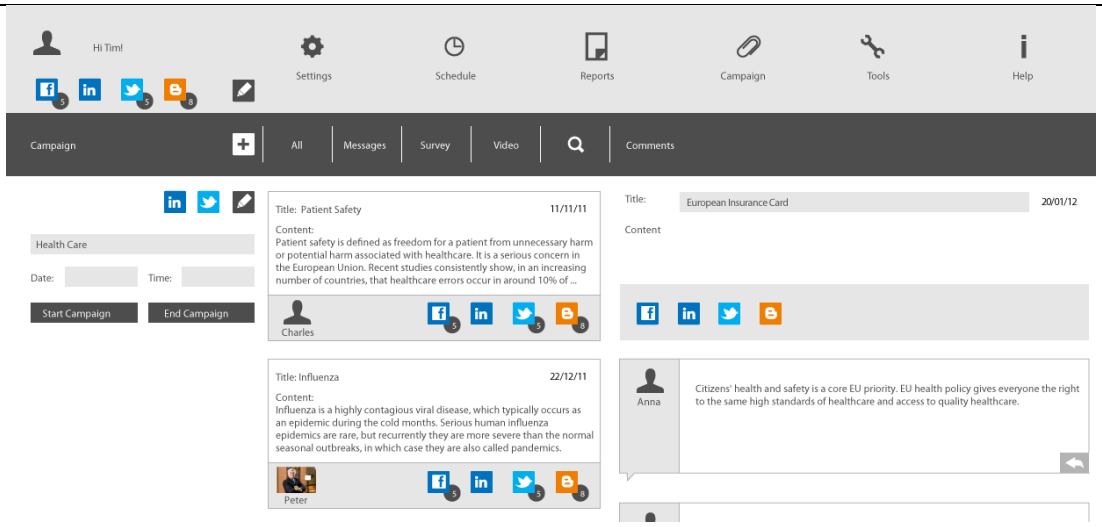


Figure 2: Campaign Manager

The campaign manager is divided into three columns: campaign information (start, end, hash tag, region, target group), policy message (text, image, video, survey and polls), feedback stream (comments, likes, policy maker's feedback). Following paragraphs will explain the features of the campaign manager.

A policy maker has the rights to create a new policy campaign. Policy maker chooses first an appropriate name for the campaign. In the next step a date for the beginning and the ending of the campaign is needed. In the beginning the campaign is not public by default. The start date turns the campaign to public and the first policy messages will be published. The policy maker chooses also the main language and a region for the circle of influence of the campaign. Another important parameter is the hashtag which has to be defined. Via hashtag the diffusion of policy campaign related topics can be tracked across Twitter.

Policy maker creates policy messages via the dashboard. There are three different kinds of messages: text, (image), video, survey and polls. After creating, the policy maker decides where the message is published in the social media networks. It is possible to publish a policy message in more than one social network in parallel.

Scheduler

It is not necessary to publish created policy messages instantly. With the scheduler, a policy maker has the ability to plan when policy messages should be published. The message creator chooses a date in the future. PADGETS stores the policy message until this date and will publish it autonomous across social media networks.

Evaluate and Taking Action on Feedback Stream

The third column of PADGETS dashboard (Figure 3) addresses feedback streams of end-users. Feedback streams are mainly comments which are related to a Blog post or any status message.

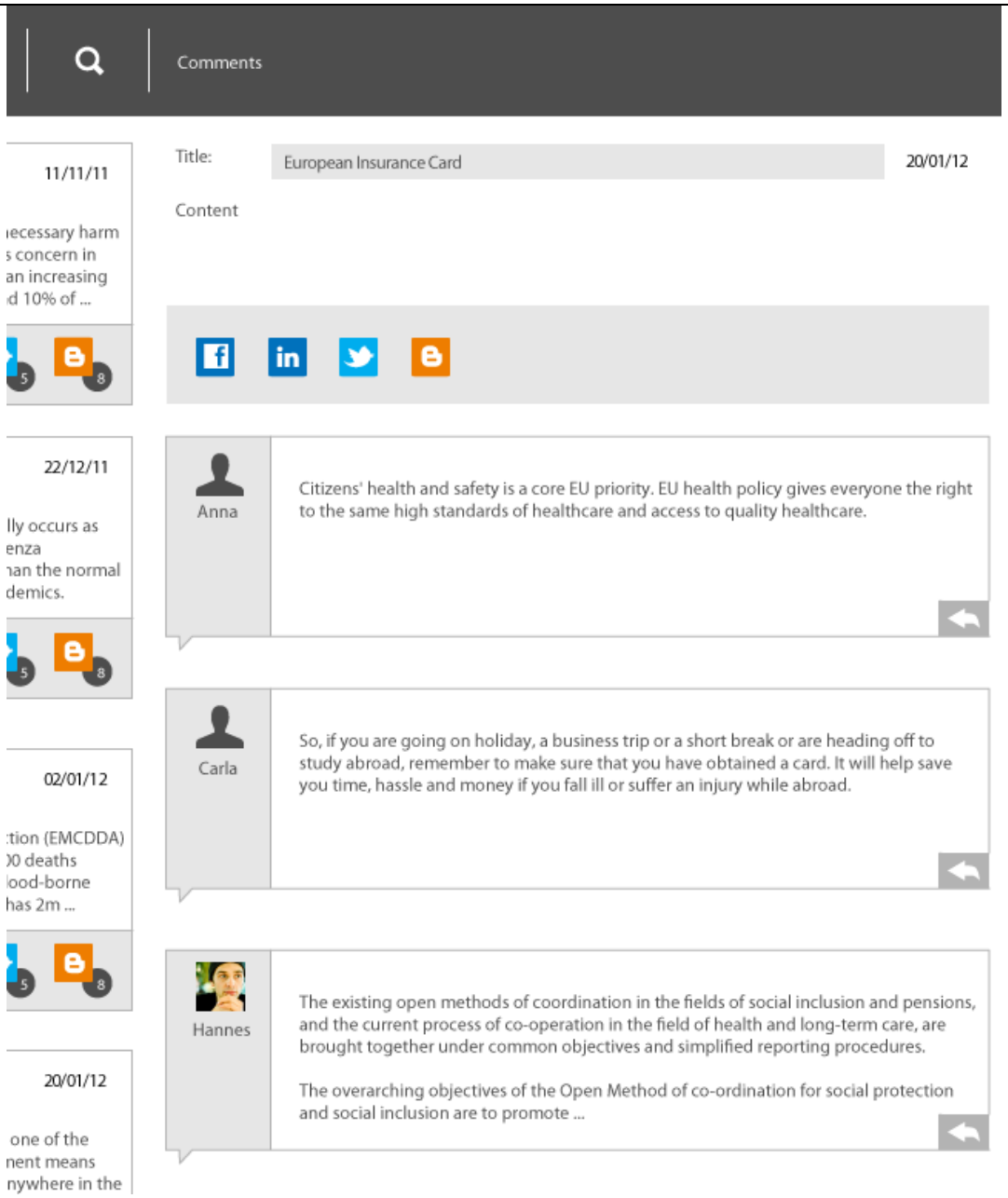


Figure 3: Feedback Stream

These feedback's are visualized sequentially as stream. Filters can be defined by social media network. Based on the XMPP server as part of the tracking engine, feedbacks will be displayed in real-time after an end-user was active on a social media network. The most important feature is the feedback button for policy makers. Each feedback offers the opportunity to take action as reply to a comment. Policy maker presses the reply button and can formulate a statement to the comment of an end-user. This feature empowers the chance that policy makers can interact directly with their target group in one

common tool without managing various social media network accounts.
Innovation
PADGETS dashboard is realized to provide a fully-fledged, 2.0 web application. In order to enhance the experience of user interaction. It supports integration with JQuery, JavaScript, DOJO and AJAX technologies. On the server side, the architecture is based on integration of Java based technologies, like the Play! Framework. The architecture supports several extensions being envisaged in order to be integrated and customized with state of the art web technologies.
Business Impact
The business impact in comparison to current social media campaigning solutions results from the policy maker centric view of the platform. Policy makers are able to track demographics, political discussions and forecasts for voting behaviour.
Interoperability
The dashboard offers solutions for various platforms like mobile and desktop as well as for citizens and policy makers. So various interaction channels are addressed with PADGETS.
Stakeholders profile
Policy makers and their assistants are able to author, track, monitor and analyse policy campaigns via web-based dashboard. Whereby each process is assisted by a wizard. Furthermore policy makers have also access to a mobile dashboard for Android devices with focus on authoring and tracking of policy campaigns. From the citizen perspective PADGETS platform front-ends support several ways of interactions with policy campaign related content. The mobile dashboard takes also citizens into account, however with features for commenting, rating and tracking of political debates which are initially published by a policy maker. Based on current developments in the field of cross-platform developments, Padgets extends the iGoogle environment by supporting iGoogle gadgets. These gadgets are targeted to citizens for pursuing latest trends in a political debate. Gadgets are basically for consuming content. In retrospect of the key challenge of the PADGETS project, PADGETS front-ends use Social Media platforms like Facebook, Blogger, Twitter and YouTube as containers for publishing content and for citizen interactions.
Competitors
Enterprise Social Media Monitoring Tools by SAP, Microsoft and Oracle. They are addressing the entire life cycle of social media campaigns including a broad range of social media platforms and news hubs. TweetDeck is a social media dashboard application for management of Twitter and Facebook accounts. Tweetdeck's interface consists of a series of customisable columns, which can be set up to display Twitter and Facebook updates, Twitter direct messages, Facebook comments or the Twitter updates of a single user. TweetDeck interfaces with Twitscoop, and StockTwits, all of which can appear in separate columns. HootSuite is a social media management system for brand management created by Ryan Holmes in 2008. The system’s user interface takes the form of a dashboard, and supports social network

integrations for Twitter, Facebook, LinkedIn, Google+, Foursquare, MySpace, WordPress and Mixi.
Partners involved
Fraunhofer FOKUS has developed the module and will keep the copyright under the Apache License, Version 2.0

Asset/Module	**PADGETS Application Server**
Asset/Module Overview	
Application server is responsible to manage the communication both with social media and with all different components. It is "heart" of the platform where data are stored and information is rooted on the proper channels. It is connected to every other component inside the system. Applications server provides RESTful interfaces for other components especially the social media metrics API for raw social media data and computed results of data mining engine and decision support engine. The PADGETS Application Server comprises four core components: Social Media Connector for integration of back-office services, Monitoring Engine for end user feedback content stream tracking and analysis, Publishing Engine for publishing policy messages within policy campaigns in underlying Social Media as well as the Aggregation and Decision Support Engine for content analytics, decision support and simulation.	
Innovation	
Padgets Application Server is built on a suite of Web components that support the integration of SOA concepts such as late binding and structured orchestration of services. The underlying architecture follows the REST style (REpresenational State Transfer) and is thus compliant with the Web's architectural style. For content publishing, aggregation and tracking already presented concepts like ActivityStreams and XMPP is enhanced and combined with the late binding approach.	
Business Impact	
Publish engaging content across multiple social media platforms and target it to reach the global audience in a personalized way.	
Interoperability	
The PADGETS Application Server builds on an extended mashup proxy that supports the seamless integration of back-office services of social media and front-end interfaces for user interaction. Furthermore, a server-side and client-side runtime environment enables Padgets to adapt dynamically to the requirements of mobile users whose devices are limited in their available bandwidth and display size.	
Stakeholders profile	
The stakeholders of the PADGETS Application Server are the policy maker as initiator of a policy	

campaign and the end user who interacts with the policy message in underlying Social Media. The policy maker interacts via dashboard with the PADGETS Application Server by publishing and tracking of policy campaigns. The end user will be achieved by means of Social Media Platforms. This means that a policy message will be published in underlying Social Media and the end user interacts with them for example on Facebook or via comments on a blog entry.
Competitors
Enterprise Social Media Monitoring Tools by SAP, Microsoft and Oracle. They are addressing the entire life cycle of social media campaigns including a broad range of social media platforms and news hubs.
Partners involved
Fraunhofer FOKUS in joint cooperation with AEGEAN, POLITO and NTUA have developed the module and will keep the copyright under the Apache License, Version 2.0

Asset/Module	**PADGETS Visualization Engine**
Asset/Module Overview	
Visualization engine is responsible to export campaign data on the web interface. Google Chart Tools have been used to give a “Google Analytics”-like feeling of mass data visualization. Visualization Engine provides social media platform driven metrics, awareness, interest and acceptance of target groups, trend topics and opinions. PADGETS supports policy initiators by tracking all analytics from growth to engagement in one convenient dashboard. Reports can be generated by the dashboard for social media metrics, indicators like awareness, interest and acceptance as well as opinion analysis for end-user feedbacks. Figure 4 illustrates the reports section with social media metrics for hot discussions, interactions by region and top referrers.	

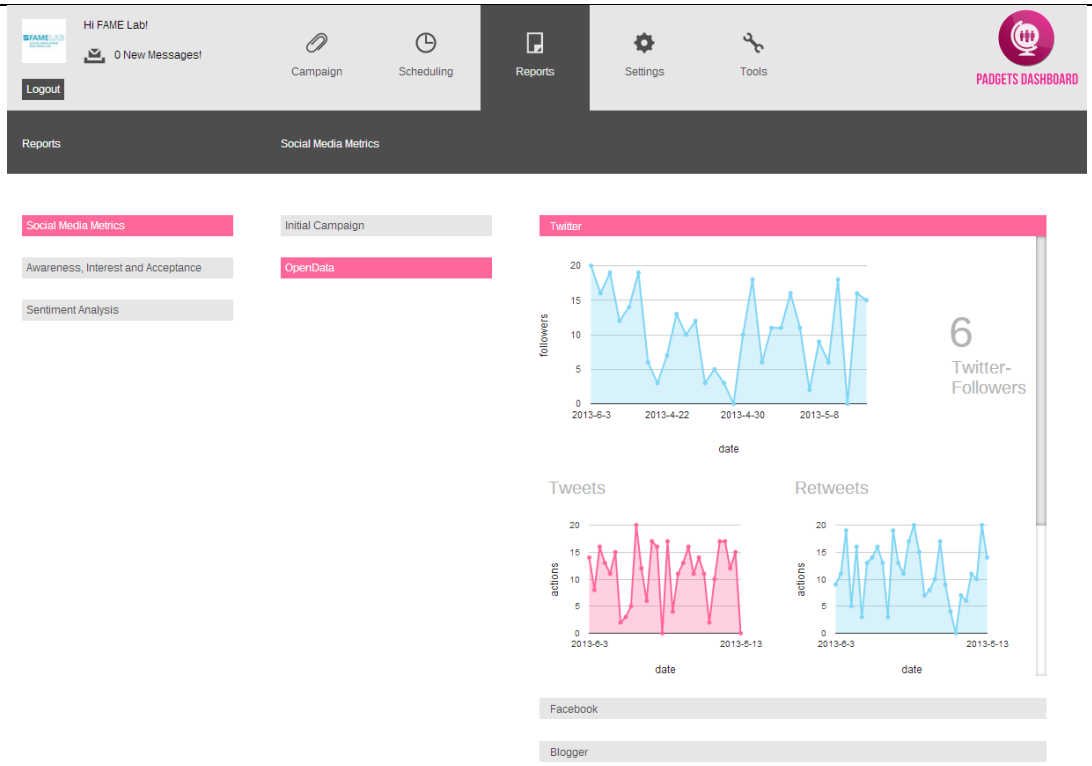


Figure 4: PADGETS Dashboard Visualizations

PADGETS delivers following features in the visualization engine of the dashboard:

- Full integration of Facebook Insights
- Presentation of metrics on campaigns which are currently running
- Presentation of fan and follower growth over time
- Support the daily performance of campaigns over time
- Provide engagement data on each policy message made to a social media network
- Request entrant demographics by surveys and polls
- Measure end-user engagement by indicators like interest, acceptance and awareness
- Track topic distribution by hashtags
- Presentation of opinions for policy message related comments

PADGETS requests and processes raw social media data from social media platform APIs like Facebook, Blogger, Twitter and YouTube. From these data sets, following social media metrics are deduced:

- Number of reaches per social media platform (SMP)

- Number of view per SMP
- Number of replies per SMP
- Number of shares per SMP
- Number of posts per SMP
- Number of likes / dislikes SMP
- Number of comments per SMP
- Number of tweets
- Results of opinion polls
- Number of followers/friends per SMP
- Number of daily posts
- Number of daily tweets

These metrics are mostly based on conversational data with the objective to have a clear statement regarding user engagement in social media platforms related to a policy campaign. It is to be noted that not every social media platform API supports the just mentioned metrics. These metrics are visualized as reports based on the before mentioned concepts of the last deliverable.

Innovation

The visualization engine displays by default the basic metrics that resulted from the interactions with the citizens during the specific campaign. The basic metrics concern the responses of people (posts, replies, shares, retweets, etc.) through the selected Social Media Platform during the campaign life cycle combined with their socio-demographic data. Additionally, the policy maker can set a specific time period to filter the results of the current view. The predefined metrics include important analytics for each of the Social Media in which the campaign is published.

Business Impact

Track all analytics, from growth to engagement, in one convenient dashboard. Monitor audience growth over time, and compare the social presence to other politicians including policy topics.

Interoperability

Visualization Engine is based on the Google Charts API. So visualizations of charts can be easily exported and adapted for 3rd party applications.

Stakeholders profile

Private sector especially media companies such as Bertelsmann, Viacom, Axel Springer, RTL Group.

However, they are already in the market with solutions and contracts!

List of Potential customers:

- 1st Axel Springer
- 2nd Viacom
- 3rd RTL Group.

Competitors

Enterprise Social Media Monitoring Tools by SAP, Microsoft and Oracle. They are addressing the entire life cycle of social media campaigns including a broad range of social media platforms and news hubs.

Sprout Social allows businesses to efficiently and effectively manage & grow their social presence across channels and turn social connections into loyal customers. The web application integrates with Twitter, Facebook Pages, LinkedIn, FourSquare, Gowalla and other networks where consumers are engaging with businesses and brands. In addition to communication tools, Sprout Social offers contact management, competitive insight, lead generation, analytics and more all in a package that's intuitive and easy to use.

Beevolve is a social media monitoring application that helps users follow more data in a convenient user interface. Users can define search keywords that can include their product or brand name, competitor's names, markets or related individuals. The user can add terms to be included or excluded and see what's being said using their keywords. Beevolve will also show the user any related Facebook fan pages. The user can select the fan page to begin monitoring it. Twitter accounts can also be linked and followed. An invitation feature lets users invite team members and colleagues to Beevolve. The user can work together with those they invite. Users with Twitter profiles can connect and respond to Tweets through Beevolve. The user dashboard provides an overview that includes volume charts, tag clouds and access to reports, conversations and comparisons.

Partners involved

Fraunhofer FOKUS has developed the module and will keep the copyright under the Apache License, Version 2.0

Asset/Module	**PADGETS Social Media Connector**

Asset/Module Overview

It is the gateway between application server and social media platforms. The Social Media Connector utilizes and abstract API to exchange data between social media platform APIs for publishing and tracking of policy messages as well as extracting raw social media data. Social media platform APIs are mapped to generic features and categories of the abstract AP. The Social Media Connector links external Social Media Platforms with PADGETS. It maps several Social Media Platform APIs to one abstract PADGETS interface description for Social Media platforms. The abstract interface description supports the following selected categories of Social Media Platforms: Social Networks, Video Broadcasting, Micro-Blogging and Blogging.

The Social Media Connector, in brief, is a framework that provides aggregation of users distributed

information to and from a user. Essentially this framework operates like a mediator between users and different sources of users' information: to collect information to the user from different sources and distributing information from the user to different sources. Augmented by advancement in Web 2.0 services like Social Network, blogs and media sharing services, popularity of community services are growing in extraordinary rate. Abundance of such community services exists today catering different types of people for almost any subject matter: some gaining popularity while some loosing behind. Facebook, YouTube, Twitter and Flickr are few of the most popular services today. The reality is people will change and use multiple services. The Social Media Connector has been designed and developed to overcome this trend. It provides integrated way in which any application or service can manage or have aggregated view of user's community or any other sources of information.

Innovation

The potential use of aggregated information is huge. It can be used simply to present this cumulated information to and from the user or more interestingly, it can be used to analyze the data to extract useful information within policy campaigns. For example, social behavior of a user or overall users in general, analysis of discussion topics or creating dynamic (ad-hoc) group of users based on certain context and so on. This result could be used for decision support and simulation.

Business Impact

Access to multiple social media platforms for unlimited engagement with your audience. Based on an abstract Social Media API, 3rd party developers are able to access these multiple platforms.

Interoperability

Figure 5 shows two main components of the PADGETS Platform architecture: the Social Media Connector to integrate 3rd Web Services like Social Media Platforms and the Content Tracking Module of the Monitoring Engine. The Social Media Connector works closely together with the Late Binding Module. This means we map certain APIs of 3rd party Web Services to one abstract PADGETS interface specification. In this context we defined categories for the abstract PADGETS interface specification: Social Network Platforms, Photo, Video, Blogging, Live and general Social Media Platforms. Afterwards if the policy maker selects his target Social Media Platforms via the front-end to initiate the policy campaign the Late Binding Module binds the relevant 3rd party Web Services like Blogger, Facebook and YouTube to the Composition Module. Based on this composition the underlying content streams of the policy campaign will be published in the selected Social Media Platforms.

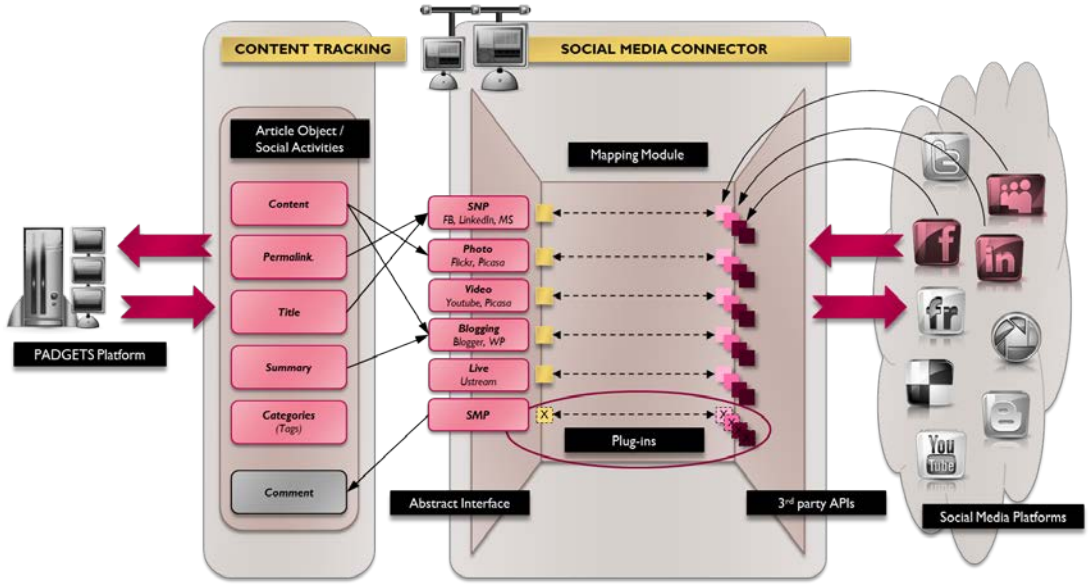


Figure 5: Social Media Connector as interoperable Data Broker

Stakeholders profile
Through features like Social Login, Registration-as-a-Service, Social Plugins and Opinion Mining, Padgets provides clients with the rich data, intelligence, and tools needed to reach citizens with the right messages, on the right platforms at the right time.
Competitors
Enterprise Social Media Monitoring Tools by SAP, Microsoft and Oracle. They are addressing the entire life cycle of social media campaigns including a broad range of social media platforms and news hubs. Gigya markets social infrastructure technology to website operators, handling login, registration, user identity storage, gamification tools, and social plug-ins and APIs that collect users' personal data on any of several social networking services online. Gigya's products are divided into three units: User Management 360, Social Plugins, and Gamification.
Partners involved
Fraunhofer FOKUS has developed the module and will keep the copyright under the Apache License, Version 2.0

Asset/Module	**PADGETS Mobile Application (HTML5 – Jquery)**
Asset/Module Overview	
For policy makers:	

During the second half of the PAGETS project, Reply Whitehall team has been involved in the development of a cross-platform, mobile web application. The application has been launched one years ago and it is still accessible at http://195.251.166.71:8080/Padgets-JQM/start.html

It realizes a fully-fledged mobile application built using web technologies as HTML5 and JQuery Mobile [http://jquerymobile.com/]. This approach allowed creating a cross platform application, exploitable from the vast majority of mobile devices through their built-in HTML5 browsers. Differently to our development approach, this architecture has been addressed exclusively to the mobile platforms. From a development perspective, this promoted the use of an inedited Model-View-ViewModel approach. The whole system strongly relies on the same API services, thus on the same Back-End-As-A-Service already exploited by the standard PADGETS web Application and by the Android one.

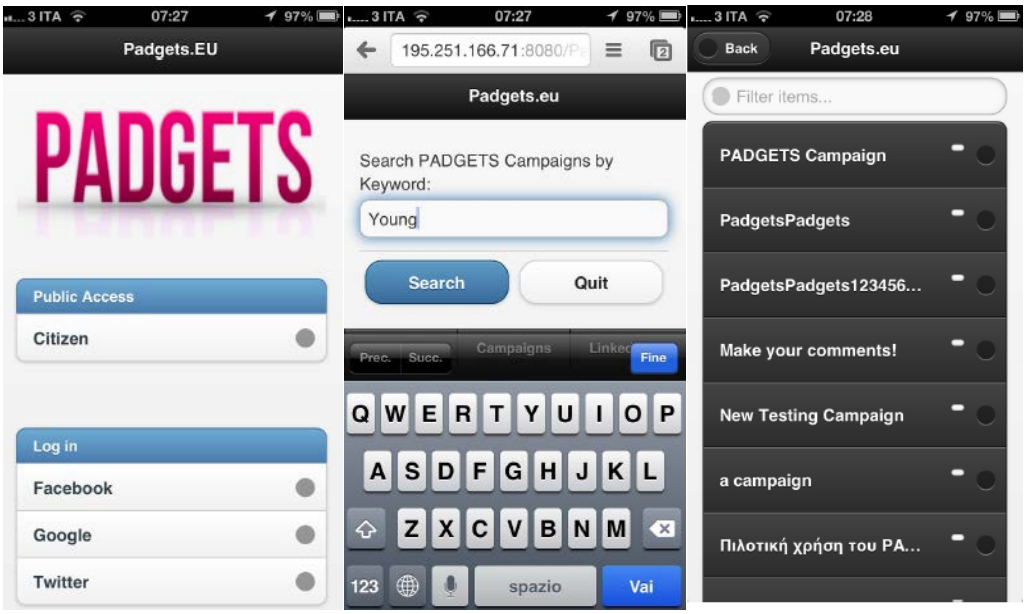


Figure 6: PADGETS Mobile Application (HTML5 – Jquery)

For Citizens:

The application has been derived directly from the HTML5 – JQuery Mobile Application, bypassing the need for a login so to make it available to the public (non-authenticated users). Also a campaign filter has been introduced, to make it possible for the citizen to filter different campaigns by name and/or subject.

Innovation

For Policy Makers:

The prototype was realized adopting a Federated Login mechanism (using OpenID providers [http://openid.net/]) and REST based services interfaces, which have been aimed at the implementation of a real Back-End-As-A-Service. A real challenging task has been managing multiple connectors towards diverse Social Media Platforms and their APIs. In this respect, the architecture was realized

implementing reliable mechanisms as OAuth authentications [http://oauth.net/] and abstracting the notion of interoperability at the API ecosystem, by the means of a late binding/dependency injection approach.

For Citizens:

The tool manages multiple connectors towards diverse Social Media Platforms and their APIs. In this respect, the architecture was realized implementing reliable mechanisms as **OAuth** authentications [http://oauth.net/] and abstracting the notion of interoperability at the API ecosystem, by the means of a late binding/dependency injection approach.

Business Impact

For Policy Makers:

The available functionalities are a subset of the functionalities provided by the standard web application and are addressed at policy makers. Actually they allow to: Login (access for already registered PM and consultants); Navigate Campaign lists; Focus Campaign Details; Recall list of sent Messages, for each connected Social Media Platform; Retrieve Message Details, along with the list of related citizen feedback.

For Citizens:

The available functionalities are a subset of the functionalities provided by the mobile application and are addressed at citizen willing to navigate campaign and discover the respective messages and feedbacks. No “write” access is provided, since the session is not authenticated.

Interoperability

The prototype adopts a Federated Login mechanism (using **OpenID** providers [http://openid.net/]) and **REST** based services interfaces.

Multiple connectors towards diverse Social Media Platforms are managed through **OAuth** authentications [http://oauth.net/], abstracting the notion of interoperability at the API ecosystem.

Stakeholders profile

For Policy Makers:

The potential customer base of the web/mobile application is constituted by a large number of medium sized (or big) municipalities, plus a number of regional government offices, plus the national level. In this hypothesis, only the potential customers that are actually addressable have been considered (based on current records and the location of regional offices of the company.

List of Main Potential customers:

- 1st Rome Municipality
- 2nd Milan Municipality
- 3rd Turin Municipality
- Chambers of Deputy
- Senate
- Prime Minister Office
- Regional Gvt of Lazio
- Regional Govt of Lombardia
- Agenzia per l'Italia Digitale
- Economic Development Ministry's office

For Citizens:

The potential customer base of the application is largely constituted by the same set of municipalities, regional government offices, national policy maker that is interested in the JQuery Mobile application. These users could be willing to expose to citizens the effect of the campaigns, maybe with a branded application.

Competitors

For Policy Makers:

There is poor to none competition as for the platform itself, while the competition on professional services is mainly focused on traditional (albeit sometimes social-oriented) marketing campaigns.

The only tools whose market resembles ours is the one covered by tool like Hootsuite and Oracle Endeca.

HootSuite is a social media management system for brand management created by Ryan Holmes in 2008. The system's user interface takes the form of a dashboard, and supports social network integrations for Twitter, Facebook, LinkedIn, Google+, Foursquare, MySpace, WordPress and Mixi.

Oracle Endeca is a wider platform, the allows the customer to leverage social media management activities to boost sales of products and services through electronic channels. In this sense, the goes far beyond the scope of our tools.

For Citizens:

There is really low competition in this kind of tools offered to expose campaigns and messages flows to

the public.

Twitter itself offers a way for non-authenticated users to explore the tweet stream.

Partners involved

Whitehall has developed the module and will therefor keep the copyright.

As for the licence under which the product can be distributed, there are several option, based on the kind of inclusion in a wider toolset and/or application, and the specific license under which that toolset/application will be made available.

Options include various OSS licences such as MIT, Apache and LGPL.

Asset/Module	**PADGETS XMPP interface for synchronization processes**

Asset/Module Overview

The XMPP protocol is a real-time protocol that reduces the number of requests for a social platform, making it more effective and scalable for managing messages. As XMPP was developed initially for chatting applications, it is a good decision for social applications. Applications like Facebook Chat, Google Talk, Twitter initially and WhatsApp, even Skype recently use it. For the purpose of the project it was used on the back to deliver messages tracked from social media and deliver the references of the tracked content to the platform users.

NTUA developed a system that allows clients to publish messages of specific topics under different campaigns (nodes), allowing subscribers to receive any message that has been buffered as soon as or while they log in. With this approach, a client who is offline will receive the message when logged in and will never miss that message, but also when is logged in can receive them more effectively. In parallel, as messages are delivered under specific topics, both social media connectors (back-end systems) even end-users can receive the messages when available. In that term, the XMPP component is both a back-end component and with modifications might be available directly to end-users through existing and popular XMPP clients (e.g. Pidgin, IM+, iMessages on Mac etc.).

In PADGETS, when a message is retrieved, it is stored to the database and on the same time it is pushed to the proper node of the campaign. The campaign is a node in a pubsub server, where the related messages of the campaign are stored as references to the database; an ActivityStreams formatted, XML-based message with a social activity and the URL of the resource in the social media platform. Thus users retrieve the message when logged in. It was easy to interrelate these messages and parsing them was easy, as the database of PADGETS was designed and implemented based on the rules defined from the Activity Streams Schema. An HTTP interface that connects with the XMPP node, built on Strophe.js, presents the message to the client.

Below there is the full, implemented architecture of different components that consist the

synchronization backend while tracking a message.

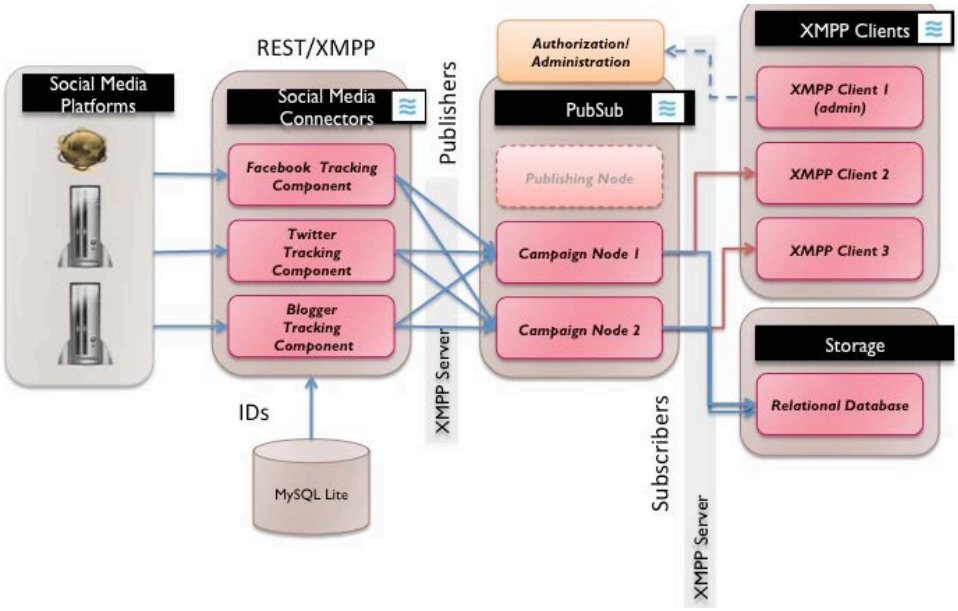


Figure 7: Managing incoming messages

This architecture delivers the most scalable and effective notification system. But, when tested in the system revealed the biggest obstacle: existing social media APIs are built over RESTful technologies, and do not deliver data over XMPP; they do not want third party developers to replicate their functionality. During the project also, the platforms grew and become stricter to the number of the calls they accept from an application, especially Twitter. Thus, the notification system is depended on the social connectors and their designed polling-time. The added value of the system that is unique nevertheless, is the scalable way to buffer and deliver messages.

The design of the platform allowed the system to publish also messages, nevertheless it was a decision of the project to make a separate RESTful and XMPP components to reduce failure points, thus the XMPP system was positioned in parallel to the Database server. There was no profound reason to make XMPP the publishing engine, as it was triggered by users of the platform and no polling was required.

Nevertheless, the system allowed and created also a proof of concept, where the connectors where actually XMPP clients.

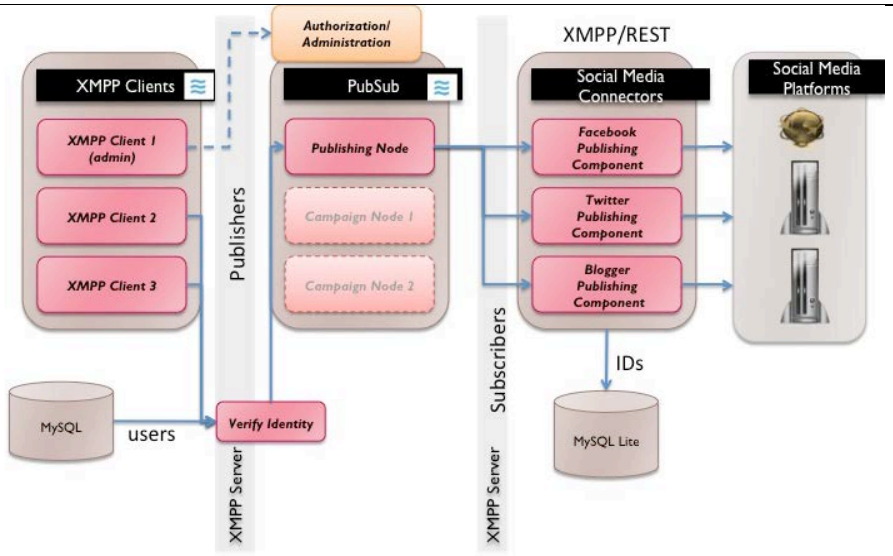


Figure 8: Managing outgoing messages was a proof of concept for the project

In other words, the XMPP system for real-time communication showed that creating a social application for real-time notification is much easier and effective, if there is no interference with existing social media platforms. Thus, this system can be used to create a separate, effective campaigning system, concept that was presented to the relative W3C conference with the positioning paper: *https://docs.google.com/viewer?url=http%3A%2F%2Fd-cent.org%2Ffsw2011%2Fwp-content%2Fuploads%2Ffsw2011-A-platform-for-managing-campaigns-over-Social-Media.pdf*

Innovation

The PADGETS XMPP component developed an extension for the XMPP protocol to drive messages from external social media platforms through an XMPP channel. As a separate platform, the component could be a stand-alone social platform, with interoperable social interfaces because of the ActivityStreams formatting.

Business Impact

The three developed components that consist the real-time system, built on one of the most innovative and emerging technologies, showed that campaigns may run not only over social media, and cannot necessarily be closed under specific messaging formats. The pubsub, notification systems and its ActivityStreams messaging extension showed that a policy campaign can run over chat clients, with mobile IM applications as interfaces for direct communication, but on the same time they can have interfaces to web sites or applications with the proper libraries (e.g. Strophe.js). Since PADGETS started building on XMPP, Facebook introduced its chat service over it, while Skype created an XMPP interface to import Facebook messages, WhatsApp application for messaging over Android, Windows Phone and iOS is also over XMPP. Google Talk has been for years running over XMPP too.

Nevertheless, the need to run business effective messages over social media narrowed down the scope

of the project to RESTful services, for faster deployment, easier development and better interfaces with Social Media APIs. For example, even Twitter with XMPP implementations did not export its API but on REST, while Facebook supports only chat messages over XMPP. Taking into consideration the constant changes of their APIs, REST was considered as a better choice and the XMPP protocol was used as a notifications interface.

The XMPP components of PADGETS can be used to build a easily handles, strongly social campaigning mechanism, especially over mobile devices, where there is high scientific and business interest to find the proper XMPP extension specification to create low-energy and data consumption XMPP interfaces for mobile devices..

Interoperability

The XMPP components built over the XEPs specified under the XMPP foundation, and extended it with models coming from the ActivityStreams schema. The basic functionalities of the components are therefore accessible and readable by any XMPP client who has the proper permissions to access the server. The extension on the message follows the rules of ActivityStreams, thus it is easily understandable and extendable from any parser which is compliant to this specification; not understanding the schema does not brake the message, it loses the meta-data.

Stakeholders profile

The pubsub and notification components and ActivityStreams parsers, have a completely scientific scope at the moment.

Nevertheless, mobile marketing companies with focus on SMS and location based services, News aggregation mechanisms with subscribed customers, and alerting systems with real-time push notifications can be based on the architecture of these components to increase the scalability, speed and efficiency of their systems.

Competitors

WhatsApp, Facebook Chat, Google Talk, Facebook Notifications, initially Twitter and many collaborative applications or syncing cloud mechanisms are based for years on XMPP.

Generally XMPP is the most common protocol for social, real-time solutions.

Partners involved

NTUA has developed the XMPP interface for synchronization processes and will keep the copyright under the **MIT license** as the provided libraries to connect a website with the XMPP protocol have been based on the **Strophe.js** library which is available.

The pubsub server where the campaigning mechanism and notification system was built, are based **on Tornado Server (BSD License), SQL Lite (Public Domain**) and are connected through the **Openfire server (Apache License**). All these tools have been used to build the system architecture. The library to handle XMPP messages is based on the **SleekXMPP library (MIT license**).

The developed code to extend functionality and run campaigns with managers and privacy rules, as well as the activity streams handling, are available on the Git repository of the PADGETS project, under the decided exploitation license of the project consortium.

Asset/Module	**PADGETS DSC (Decision Support Component)**

Asset/Module Overview

PADGETS Decision Support Component is the analytic engine processing and analyzing the results of the PADGETS campaign in order to extract useful information for the policy maker. To say it in a nutshell, it is the software component which prepares the information for supporting policy makers.

The DSC relies on information coming from the policy maker and from Social Media Platforms APIs and consists of two main modules: the PADGETS Analytics and the PADGETS Simulation Model. Whilst the Analytics module aims at grouping and synthesizing raw information and at solving possible problems of statistical nature in collected data, the Simulation Model aspires to forecast future scenarios of opinion change.

The DSC allows policy makers to:

- constantly monitor the evolution of the Padgets campaign along the consultation lifecycle;
- collect feedback and precious insights useful to improve and refine the initial policy formulation;
- elaborate and interpret data stemming from social engagement by means of policy intelligence tools.

More in details, the DSC provides an overview regarding following topics:

- Awareness of the policy initiative (i.e. passive reception of the policy message in Social Media), for which the following outputs are provided: distribution among age&gender clusters measured in the actual sample, simulated distribution of the phenomenon in the near future (for instance six months) accompanied by an estimation of a confidence interval (for instance 90%).
- Interest over the policy issue (i.e. spreading or commenting the Padget announcement in Social Media), for which the following outputs are provided: distribution among age&gender clusters measured in the actual sample, estimated interest rate (post re-sampling) in the population affected by the policy, forecasted interest rate in the near future accompanied by an estimation of a confidence interval.
- Acceptance of the policy message (i.e. positive and negative judgments collected by means of the Padget), for which the following outputs are provided: distribution among age&gender clusters measured in the actual sample, estimated acceptance rate (post re-sampling) in the population affected by the policy, forecasted acceptance rate in the near

future accompanied by an estimation of a confidence interval.

- Opinion pertaining to barriers and obstacles, hopes and fears, suggestion coming from the "crowd" or from qualified users; in this case the DSC shows results coming from answers related to additional questions presented via the Survey and Poll component.

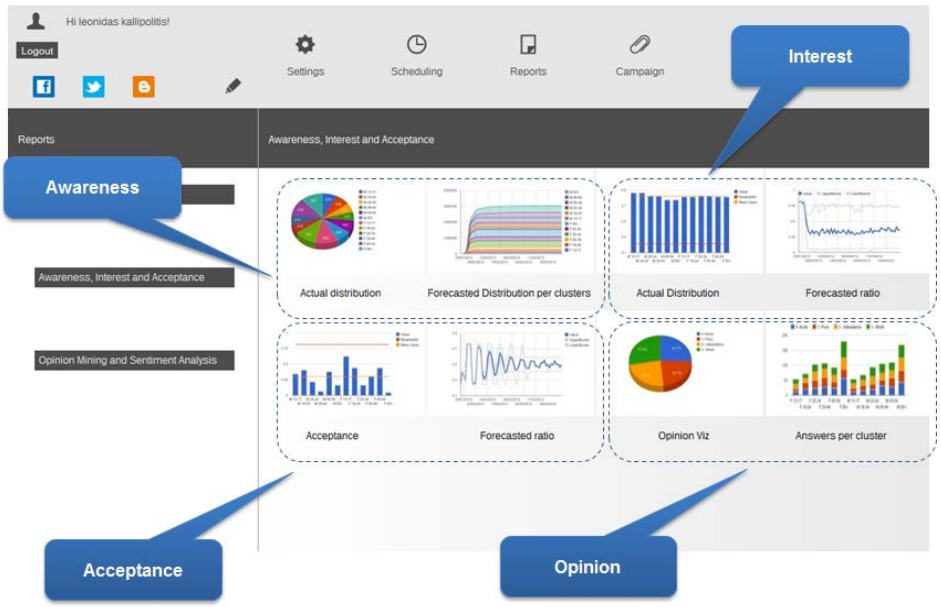


Figure 9: Decision Support Component

Validation: policy makers' involvement has not taken place yet in pilots, since the DSC was not integrated in the PADGETS suite during campaign timeframe.

Innovation

Prominent technological enhancements with respect to existing commercial solutions are as follows:

- Social Media metrics evaluation
  - Introduction of metrics which are campaign-specific in lieu of account-specific or content-specific.
  - Computation of indicators that are inherently cross-platform.
  - Static perspective enriched by indicators having a dynamic perspective (i.e., forecasted values).
- System Dynamics simulation
  - Elaboration of data inputted via API instead of via GUI.

- Dynamic adjustment of the model in real-time according to computed parameters.
- Multi-instance execution in the same application environment.

Accessibility for end-users in a “cloudy” way.

Business Impact

DSC as a whole is meant to answers five “archetypal” questions which are relevant during each phase of the public policy lifecycle (agenda setting, policy analysis, formulation, implementation, monitoring):

1. Are stakeholders aware of the public policy?
2. Are stakeholders interested in the public policy?
3. What stakeholders think about the specific public policy solution that the policy maker has proposed? To what extent they accept it?
4. Which are the barriers to policy awareness and interest, and which are the barriers to changes in public opinion about the policy?
5. Which suggestions are coming from stakeholders?

To sum up its value proposition, PADGETS DSC aspires to provide decision makers with a set of concise, fresh and relevant data in a cost effective and easily understandable way.

For further details: Boero, R., Ferro, E., Osella, M., Charalabidis, Y., and Loukis, E., “Policy Intelligence in the Era of Social Computing: Towards a Cross-Policy Decision Support System”, in: Garcia-Castro, R., et al. (Eds.), “The Semantic Web: ESWC 2011 Workshops”, LNCS 7117, pp. 217–228, Springer-Verlag, 2012 (http://goo.gl/yGa0l).

Interoperability

The DSC is entirely developed in Java in order to maximize its interoperability with other modules composing the Padgets suite. In line with such an approach, POLITO team has decided not to resort to external libraries for System Dynamics modeling.

Stakeholders profile

Categories of potential customers:

- communication experts at the helm of political campaign;
- local, regional, national or European public authorities willing to conduct institutional policy campaign taking advantage of many Social Media platforms in a systematic and centrally-managed manner;
- Social Media strategists belonging to corporate communication departments of private companies;
- Web agents and marketing consultant managing Social Media campaigns on behalf of the

customer.

Already established contacts stemming from conjoint projects (going beyond PADGETS):

- Piedmont Region
- CSI Piemonte

Competitors

PADGETS DSC

Although at present there is not a prominent vis-à-vis competitor, several product categories may have partial overlap in terms of provided functionalities.

- Social media monitoring tools (Sprout Social, Salesforce Marketing Cloud formerly Radian6, Cision, Sentiment Metrics)
- Simulation tools based on System Dynamics (Vensim, Netlogo, AnyLogic)

PADGETS platform

Besides afore-mentioned product categories:

- Social Media management dashboards (e.g., Hootsuite, Tweetdeck)
- Opinion Mining tools

Partners involved

POLITO led the developed of the module. Regarding DSC exploitation, there are basically two options:

- As a mere Java package. In this case the most suitable license is an Open Source license.
- As a component embedded in a full-fledged suite offered as a turn-key solution to customers willing to reap the benefits of "one-stop shopping" approach. In this case, DSC is no more an autonomous component and, as a result, its license depends on the license applied to the overarching solution.

Asset/Module	**PADGETS Data Mining Engine**

Asset/Module Overview

The Data Mining Engine is responsible for the text mining of raw data extracted from social media. There are three main services, the first two provided in four languages (Greek, English, Italian and Slovenian):

- Sentiment analysis: identifies the sentiment of a comment/opinion and the overall sentiment on citizens' comments submitted within a campaign.

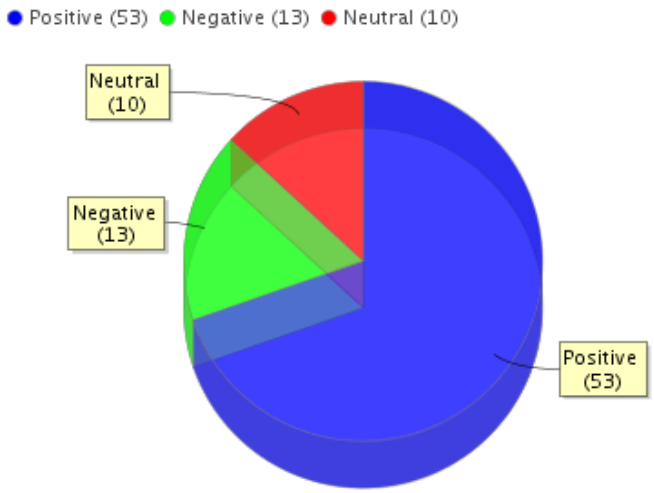


Figure 10: Data Mining example

- Issues detection: Identifies the most frequent issues mentioned in comments and which terms are mostly associated with positive or negative comments.

Figure 11: Issues detection

- Training stage: for a user's language: It provides to the user the capability of creating a prediction model by training the system on an additional language.

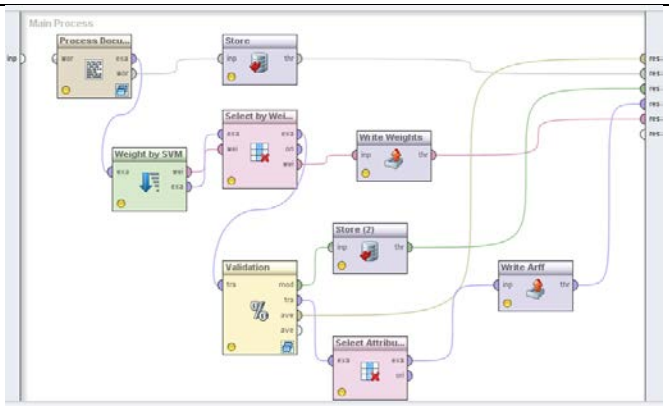


Figure 12: Training stage

The Data Mining Engine uses the RapidMiner open-source framework and is the result of a synergy between the data mining core module and a powerful ETL (Extract, Transform, Load), data analysis and predictive reporting engine. The former is trained from past user comments and uses sophisticated Machine Learning algorithms for feature selection and classification such as Support Vector Machines, Principal Component Analysis and Naive Bayes, while the latter is utilized based on RapidAnalytics, which can run upon existing, standard application servers. RapidAnalytics is able to transform the opinion mining tasks into web services, which can be accessed either through the Application Server or separately through a Web Interface in order to return information to users in a machine readable format such as XML or JSON and even produce reports using web visualization techniques such as Adobe Flash.

A first proof of concept on the Data Mining Engine was delivered through the pool of comments derived from the eID public debate, where 8 top issues were identified and 1400 comments were used for training and testing the opinion mining module. The results revealed a rate of 97% matching in the detection of positive/negative posts. Another test case was executed in conjunction with the 5th lab cycle of the Greek OpenGov initiative.

Innovation

The innovation of the component lies on the fact that the Opinion Mining module is based on limited lexical resources. It uses advanced Machine Learning techniques for feature selection in order to capture textual and non-textual information from opinionated text. The use of polarity lexicons has been kept limited.

PADGETS Data Mining Engine also address the challenges in applying typical sentiment analysis and opinion mining techniques to social media, short texts, known as micro-posts, since they do not contain much contextual information and take much implicit knowledge into account.

Business Impact

The Data Mining Engine can very briefly convey to the policy maker the overall picture of the public sentiment on a policy proposal. In addition, through the identification of top issues and as well the

sentiment against individual comments or terms it enables decision makers to intervene in specific topics of the political agenda. Since the opinion mining results can direct affect political decisions, It the validity of this module is crucial, in terms that it provides a safe prediction of how positive or negative people feel about a policy that is going to be implemented. This can also be easily observed during different time frames and after alterations in the policy proposal have been implemented. Finally the adoption of the respective algorithms and methodologies, and experimentation with languages where can have scientific impact in the Data mining field.

Interoperability

The Data Mining module is written in purely in Java and can be called either as a web service or as standard API interconnections. It can read data from various data sources and formats such as JSON, XML, MySQL,etc and can export the sentiment in all compatible formats.

Stakeholders profile

University of the Aegean has already contacted and presented PADGETS tools in various target groups of potential customers, such as WWF for publishing Environmental Campaigns, ICT companies specialized in processing Social Media data that can integrate some of the components in solutions they are developing and other universities teaching Data Mining and IT courses. In addition, the University has a strong cooperation with the Municipality of Samos and the Region of North Aegean, as well as other public administrations. During the pilot operation, which included several promotion activities, additional MEPs and Political Parties have expressed interest in utilizing the PADGETS tools for organizing political campaigns. Finally, what is currently examined is the utilization and advancement of the Opinion Mining module within other projects in the ICT for Governance and Policy Modelling area, e.g. the NOMAD project on policy Formulation and Validation through non-moderated crowdsourcing.

List of Potential customers:

- Policy makers, Policy assistants/ advisors
- Political Parties
- Local or Regional Authorities
- Not-for-profit organisations (WWF)
- Collective organisations
- Civil society
- ICT Enterprises
- Universities and Research Organisations
- Research projects
- Business Analysts
- Media agencies

Competitors

There is a plethora of commercial and research software tools for the task of sentiment analysis. In the commercial systems there is less 'transparency' (i.e. capabilities to get a deeper understanding of) the specification and explanation of the full process/algorithms followed in order to achieve sentiment analysis, while research tools are freely available with transparent code (allowing a better understanding of processes/algorithms); also support for other languages apart from English is very limited, so they can be error prone when directly adopted for other domains or other languages.

Commercial tools:

- Rapid Miner
- OpenDover
- i-Sieve
- SAS® Sentiment Analysis

Research tools

- OpinionFinder
- LinkPipe

Partners involved

University of the Aegean has developed the module and will kepp the copyright under Open-source software license.

Asset/Module	**PADGETS Android Application**

Asset/Module Overview

For Policy Makers:

This Android application is implementing the mobile dashboard component which is going to be accessible by the Policy Maker. In principle, the design follows the same specifications as the design of the web server. A policy initiator can setup, manage a policy campaign and view feedback campaign messages from Citizens in a campaign. Chart Tools have been used to give an "Analytics"-like feeling of mass data visualization. Visualization Engine provides social media platform driven metrics, awareness, interest and acceptance of target groups, trend topics and opinions.

Figure 13: My Campaigns screen

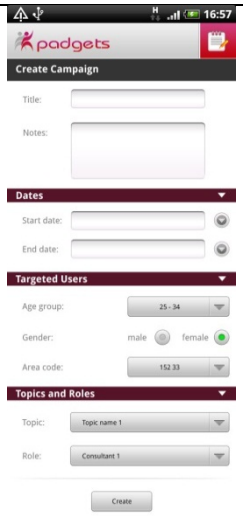


Figure 14: Create Campaign screen

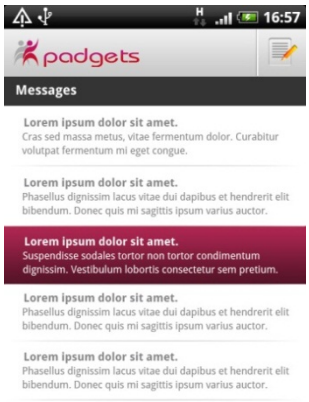


Figure 15: Messages screen

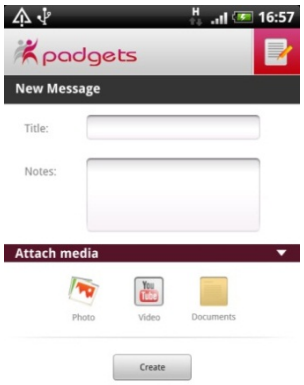


Figure 16: New Message screen

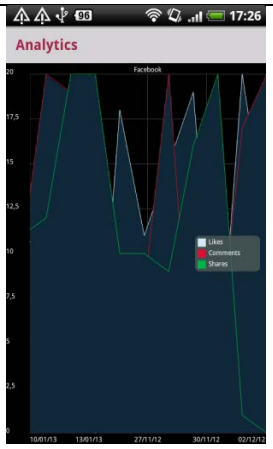


Figure 17: Campaign Analytics screen

For Citizens:

Access to the application of PADGETS for Citizens through your mobile device and you will have the latest information of the latest policy campaigns that are currently under deliberation. The app provides a list of all the campaigns that run in the PADGETS platform and therefore help the citizens become aware of the PADGETS concept, goals and results.

This app offers the following features:

- View list with all available policy campaigns per thematic area
- Follow a policy campaign
- View campaign messages and related feedback
- View sentiment analysis results based on the policy campaign discussions
- Use the Chart Tools for smart visualization.

Figure 18: My Campaigns screen

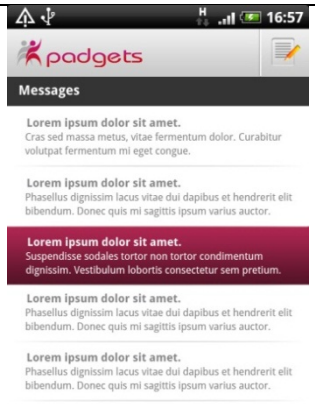


Figure 19; Messages screen

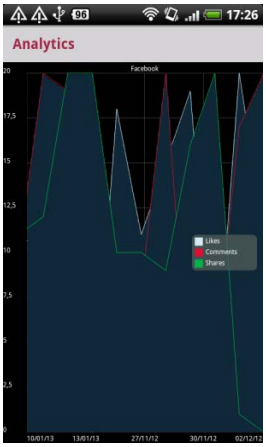


Figure 20: Campaign Analytics screen

Innovation

While the pervasive digitalization of organizational life has become the new reality, this mobile Android applications provides to the policy makers an easy way to manage by their mobile, their social campaigns in social media and see the feedback that these campaigns generate and to citizens the potentiality to become aware of the latest information of policy campaigns that are currently under deliberation. Analytics are also available in the app, allowing the users to have a quick overview of his campaigns any time and at any place.

Business Impact

The mobile application is a convenient way for policy makers to handle their campaigns and monitor

the results of their actions in the supported social media and for citizens to view information of policy campaigns that are interested. Policy makers can create and manage their policy campaigns. They can create messages using text, surveys, pictures and videos to setup your their campaigns. Also, policy makers and citizens can track all analytics from growth to engagement, in one convenient dashboard. Thus, policy makers and citizens can monitor audience growth over time, and compare the social presence to other.

Interoperability

The mobile application is built for devices running the Android OS. It is integrated with the PADGETS backend using a number of web services providing all the required data for authentication via the supported social media networks and management of the interactions with these networks. Therefore, the app could work with any other backend that provides similar functionality by switching the web services endpoint.

Stakeholders profile

The potential customers of the policy makers' app could be from both private and public sector.

From private sector, customers could be media companies, statistical research companies, public relations companies and advertising/marketing agencies.

List of Potential customers from media :

1. REAL MEDIA A.E
2. ERT SA
3. TELETIPOS SA
4. ANT1 Group

List of Potential customers from statistical research companies :

1. Metron Analysis
2. V-PRC
3. Focus Bari
4. TNS ICAP

List of Potential customers from public relations companies :

1. Civitas Ketchum
2. PUBLICIS CONSULTANTS-ATHENS
3. Palladian

List of Potential customers from advertising/marketing agencies:

1. 1st Metron Analysis
2. 2nd Ogilvy & Mather
3. 3rd Focus Bari
4. 4th TNS ICAP

From public sector, customers could be politicians, national parliament, youth parliament, regions and municipalities.

Competitors

TweetDeck for Android is a social media application for management of Twitter and Facebook accounts. Tweetdeck's interface consists of a series of customisable columns, which can be set up to display Twitter and Facebook updates, Twitter direct messages, Facebook comments or the Twitter updates of a single user. TweetDeck interfaces with Twitscoop, and StockTwits, all of which can appear in separate columns.

HootSuite for Android is a social media management system for brand management. HootSuite for Android is a FREE app that helps the user to update his social networks (Twitter, Facebook, LinkedIn, Google+, Foursquare, MySpace, WordPress and Mixi). Plus, he can easily manage campaigns, schedule updates, and even view click through stats for your social networks.

Partners involved

ATC has developed the module and will be provided as open source code under the GPL v3 licensing.

Asset/Module	**PADGETS Privacy & Security Specification**

Asset/Module Overview

As privacy and security is a cross-component function, several distributed additions to the PADGETS Platform have been made (implementations have been partly carried out by Fraunhofer).

Regarding privacy, based on collaboration with legal experts, PADGETS follows a combined approach of legal and technical protection. From a legal perspective, PADGETS – as any service provider – a privacy policy has been developed that explicates personal data processing within the project. A screenshot of the privacy policy is attached to this document.

In addition, Padgets implements secure authentication and access control mechanisms based on authentication mechanisms provided by Facebook, Google, and Twitter, protecting personal data from

unauthorized access.

With regard to personal data processing, Padgets implements secure storage on servers that are under full control of the consortium and deletion of personal data after finishing the project or a specific Padgets campaign.

Figure 21: PADGETS Privacy & Security

Business Impact

Based on PADGETS special focus on privacy and data protection, the consortium aims to increase trust in online policy making through social media. The overall goal is to convey citizens to take advantage of this new form of policy making without having to trade off impact on future policies against personal data protection.

Stakeholders profile

Privacy and security specification and implementations are cross-component functions, which do only indirectly contribute to raising the interest of potential customers as they increase the trust in the software. Thus this question is not applicable to privacy and security specification.

Privacy and security specification and implementation are in general applicable to all service providers on the WWW to increase their users' trust in privacy-protecting processing and storage of personal information. Examples may include e-commerce and social network providers

Competitors

With the increasing ubiquity of online social networks, studies show that privacy becomes increasingly

important. As an example, a recent study shows that users on Facebook are increasingly concerned about their personal data (The Social Habit – Edison Research 2012). Additionally, only 25 % of all Facebook users trust the company with handling their personal data (Deirdre O' Brien and Ann M. Torres. Social Networking and Online Privacy: Facebook Users' Perceptions. Irish Journal of Management, 31(2):63–97, 2012). Both examples demonstrate the need to adequately address privacy in the development of any social application. The European Commision has acknowledged the need for better privacy protection and recently announced a comprehensive reform of the data protection rules (http://ec.europa.eu/justice/newsroom/data-protection/news/120125_en.htm).
Partners involved
The Padgets privacy and security specification and its implementations are based on open standards as well as legal regulations. Thus, IPR protection is needed..

2.1 The overall PADGETS platform

PADGETS Platform
Platform Overview
The PADGETS platform is addressed to policy makers, who aspire to investigate public opinion on candidate policy proposals going directly where citizens are on the web. PADGETS provides a prototype service that utilizes social media technologies to boost public engagement, enables cross-platform publishing and content tracking and finally, provides decision support. This toolset allow policy makers to graphically set up and manage policy campaigns to be deployed in Web 2.0 media in order to spread policy deliberation in a systematic and innovative way. PADGETS offerings can be summarized in three main functionalities: • Publishing policy messages in multiple social media simultaneously, using a single integrated interface. Policy messages can be in the form that the respective Social Media supports, e.g. text, image, video or polls that contain relevant information to the policy under discussion with the aim to trigger citizens' reaction. • Tracking and analysing citizens' feedback on policy discussions in terms of social media interactions (comments, likes, shares, retweets, etc.) in order to extract valuable information on the possible policy formulation and implementation. • Visual representation of 3-stage results (Social Media Analytics, Opinion Mining Processing, Simulation Results) to provide decision support for policy making. The Padgets platform is an aggregation of different components responsible for different tasks of the project. In the Figure 22 below all the different parts of the platform are visible with all the connections

among them.

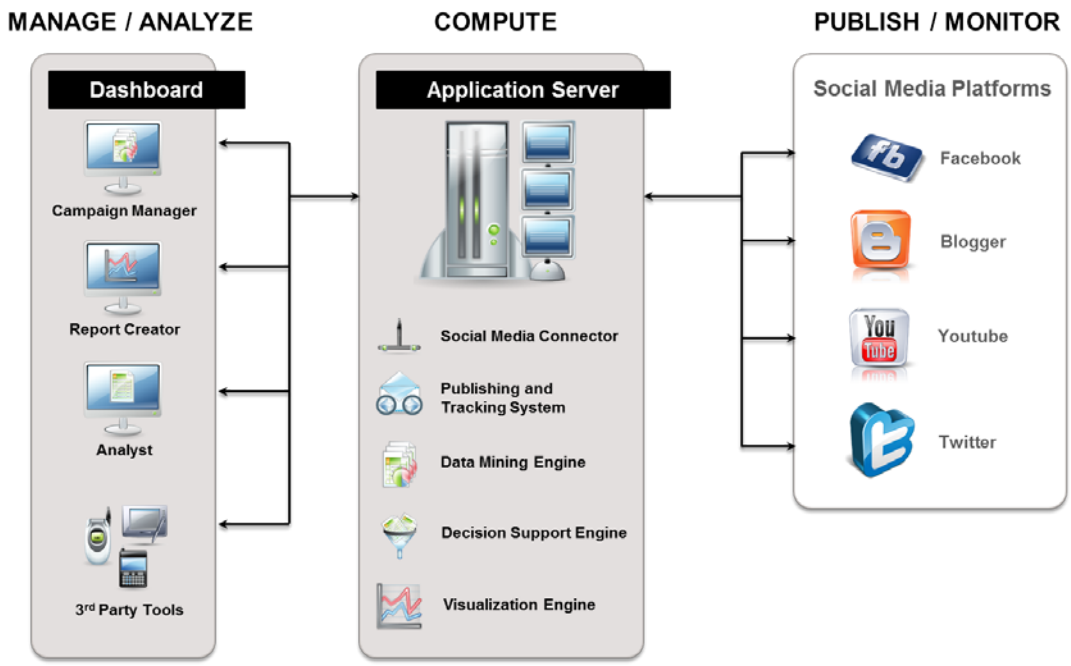


Figure 22: PADGETS Platform Components

In explain, Padgets consists of the following components:

Dashboard: Dashboard is the web interface of the platform, based on JQuery UI and NockOutJS, where a policy initiator can setup and manage a policy campaign. Evaluation of feedback streams like comments, surveys and polls are supported by monitor and report capabilities. Dashboard has a direct communication with the application server.

3rd Party Tools: (Android application): Policy initiators may also have access on a campaign through other interfaces, as long as the application server exposes RESTful interfaces. On that phase of the project, an Android application has been developed to support running a campaign via a mobile device. The broad, easy adapted in any technology (e.g. XMPP communication) and the open character of the Android platform have been the main reason for that decision.

Visualization Engine: Visualization engine is responsible to export campaign data on the web interface. Google Chart Tools have been used to give a "Google Analytics"-like feeling of mass data visualization. This component communicates through the application server with the Clients, to support the decisions made on a campaign. Visualization Engine provides social media platform driven metrics, awareness, interest and acceptance of target groups, trend topics and opinions.

Decision Support Engine: Decision Support Engine runs simulations based on data both coming from social media and the data mining engine. Via the application server it has an interface on the client to manage simulations. Results of decision support engine are clustered data sets for awareness, interest

and acceptance of citizens and their performed interactions with policy messages.

Data Mining Engine: RapidMiner has been used to extract data from raw social data (e.g comments, likes, views etc.). It has a bidirectional connection with the Application Server and delivers data also to the decision support engine for further processing.

Application Server: Application server is responsible to manage the communication both with social media and with all different components. It is "heart" of the platform where data are stored and information is rooted on the proper channels. It is connected to every other component inside the system. Applications server provides RESTful interfaces for other components especially the social media metrics API for raw social media data and computed results of data mining engine and decision support engine.

Publishing and Tracking System: XMPP server is responsible to deliver notifications on the clients for any new social activity coming from social media. It has a client-plugin on the application server and another one the dashboard in order to manage real-time communication. Based on XMPP server the application server provides features for cross-publishing of policy messages across social media platforms. Policy messages in form of a Twitter message, Facebook status update or Blog post are published to various social media channels. The application server tracks simultaneously end-user feedback for instance a comment to a Facebook status update.

Social Media Connector: Social Media Connector is the gateway between application server and social media platforms. The connector utilizes and abstract API to exchange data between social media platform APIs for publishing and tracking of policy messages as well as extracting raw social media data. Social media platform APIs are mapped to generic features and categories of the abstract API.

PADGETS platform components follow the concept of policy life cycle. Creation of policy campaign, cross-publishing of policy message, monitoring of end-user feedback, computation of raw social media data and final the presentation of reports and analyses. This set of features empowers policy initiators to run all-embracing policy campaigns across social media platforms.

Innovation

PADGETS aims at bringing together two well-established domains, the mash-up architectural approach of web 2.0 for creating social content and the methodology of system dynamics in analyzing complex system behaviour. PADGETS novelty lies in being interoperable via application programmable interfaces (API's) reaching millions of end-users, enabling the publishing of policy messages in multiple social media simultaneously, as well as, analysing the generated messages and other kind of interactions through all interconnected social media (twitter, Facebook, YouTube, blogger) as a whole.

PADGETS application is also available in three versions, the basic dashboard accessible through a web interface, an Android mobile application and a cross-platform, mobile web application.

The PADGETS Platform builds on an extended mash-up proxy that supports the seamless integration of back-office services of social media and front-end interfaces for user interaction. Furthermore, a server-side and client-side runtime environment enables PADGETS to adapt dynamically to the requirements of mobile users whose devices are limited in their available bandwidth and display size.

The PADGETS Platform comprehends various user interface components - the PADGETS Frontend. The dashboard for policy makers realizes the initiation and tracking of policy campaigns. As well as mobile dashboard solutions for monitoring, tracking and analysis of feedback content streams. Thus, the dashboard is the main interaction interface for policy makers. End users will consume various content streams of a policy campaign via common Social Media Platforms. That means a policy message will be published as statements, blog entries, polls, linked multimedia content and statistical data directly in selected Social Media Networks and Social Media Platforms. In other words Social Media Platforms function as container or carrier for a policy message of a campaign. Additionally Padgets has the ambition to offer mobile and desktop clients for end users filtering and presenting policy campaigns. However the main interaction of end users takes place in Social Media Platforms.

Business Impact

The PADGETS impact lies on the idea of the policy campaign, as a systematic manner to produce analytics on policy messages, from growth to engagement, in one convenient dashboard. Through monitoring citizens' reactions and interactions to relevant posts, and as well integrating modelling and simulation mechanisms, it enables forecasting the outcome of a policy implementation. The PADGETS module for Sentiment Analysis is used to discover public stance against various issues of the policy topic. This, results in obtaining decisions that lead to better informed and socially rooted policies. In conclusion, it proposes an innovative model for policy making by measuring the general impact of a potential political proposal.

Through the adoption of PADGETS tools in pilot applications conducted in three European countries (Italy, Slovenia, Greece), the proposed methodology was spread into thousands of citizens who participated and interacted in policy discussions on hot topics hosted by numerous policy makers. Among the policy makers that used the PADGETS application, there are members of the European Parliament and regional institutions, who organized policy campaigns with subjects of national and cross-national interest.

PADGETS Platform is realized to provide a fully-fledged, 2.0 web application. In order to enhance the experience of user interaction. It supports integration with JQuery, JavaScript, DOJO and AJAX technologies. On the server side, the architecture is based on integration of Java based technologies, like the Play! Framework. The architecture supports several extensions being envisaged in order to be integrated and customized with state of the art web technologies.

Interoperability

PADGETS Platform builds on a suite of Web components that support the integration of SOA concepts such as late binding and structured orchestration of services. The underlying architecture follows the REST style (REpresenational State Transfer) and is thus compliant with the Web's architectural style. For content publishing, aggregation and tracking already presented concepts like ActivityStreams and XMPP will enhanced and combined with the late binding approach. The objective of this approach addresses the idea of tracking user feedback content streams in real-time.

Stakeholders profile

Policy makers and their assistants are able to author, track, monitor and analyse policy campaigns via

web-based dashboard. Whereby each process is assisted by a wizard. Furthermore policy makers have also access to a mobile dashboard for Android devices with focus on authoring and tracking of policy campaigns.

From the citizen perspective PADGETS Platform front-ends support several ways of interactions with policy campaign related content. The mobile dashboard takes also citizens into account, however with features for commenting, rating and tracking of political debates which are initially published by a policy maker. Based on current developments in the field of cross-platform developments, Padgets extends the iGoogle environment by supporting iGoogle gadgets. These gadgets are targeted to citizens for pursuing latest trends in a political debate. Gadgets are basically for consuming content. In retrospect of the key challenge of the Padgets project, Padgets front-ends use Social Media platforms like Facebook, Blogger, Twitter and YouTube as containers for publishing content and for citizen interactions.

List of Potential customers:

- Policy makers, Policy assistants/ advisors
- Political Parties
- Local or Regional Authorities
- Not-for-profit organisations (WWF)
- Collective organisations
- Civil society
- ICT Enterprises
- Universities and Research Organisations
- Research projects
- Business Analysts
- Media agencies

Competitors

Enterprise Social Media Monitoring Tools by SAP, Microsoft and Oracle. They are addressing the entire life cycle of social media campaigns including a broad range of social media platforms and news hubs.

TweetDeck is a social media dashboard application for management of Twitter and Facebook accounts. Tweetdeck's interface consists of a series of customisable columns, which can be set up to display Twitter and Facebook updates, Twitter direct messages, Facebook comments or the Twitter updates of a single user. TweetDeck interfaces with Twitscoop, and StockTwits, all of which can appear in separate

columns.

HootSuite is a social media management system for brand management created by Ryan Holmes in 2008. The system's user interface takes the form of a dashboard, and supports social network integrations for Twitter, Facebook, LinkedIn, Google+, Foursquare, MySpace, WordPress and Mixi.

There are several commercial tools that analyze content in social media corpus (Radian6, Sysomos, Brandwatch, Converseon, Cymfony Maestro, evolve24 Mirror, Media Metrics, socialMeme, Meltwater Buzz NM Incite My BuzzMetrics, Synthesio, Attensity360, Trackur, Mutual Mind, Lithium, etc.), but none of them is oriented on decision support in policy making. In addition the concept of policy campaigns, underpinning the systematic and comprehensive exploitation of textual and non textual information is absent. For a more detailed presentation of the competition see Section 4.

Partners involved

Fraunhofer FOKUS in conjunction with AEGEAN, POLITO and NTUA have developed the PADGETS Platform and will keep the copyright under the Apache License, Version 2.0

University of the Aegean as the project coordinator and Fraunhofer FOKUS as the integrator of all the components are responsible for the whole PADGETS platform, which will be available for conducting PADGETS campaigns, after the completion of the project under an Open Source license.

2.2 PADGETS Exploitation Activities - The PADGETS Pilots

2.2.1 Pilot Campaign in ITALY

Pilot campaign in Piedmont (Italy) about regional development of e- Health services

The overarching goal of the pilot campaign has been to test citizens' response to the planned regional implementation of telemedicine. Relevant by-products of the campaign have been the identification of risks, obstacles and key elements for a successful regional development of e- Health services.
In particular, the Region plans to implement two different sub-campaigns aimed at investigating issues related to two complementary telemedicine services. The first service to be considered is the virtualization of periodical checkups of patients with chronic diseases (e.g., heart failure, diabetes, chronic pulmonary occlusive disease - COPD, and cancer). The second one concerns the adoption of a policy of anticipated after-operation discharges of patients, to be monitored with telemedicine tools.

Involved policy makers

1. Coordination: "Direzione Innovazione, ricerca ed universita" which is the office managing innovation public policy projects, and the partner of PADGETS.
2. "Direzione Sanita" which manages the provision of the services of the national health system to Piedmontese citizens.
3. "Comunicazione istituzionale della Giunta regionale – Settore Nuovi Media" which is the

central, institutional communication department managing campaigns and interaction with citizens on new media.
Target groups
The pilot aimed at all Piedmontese citizens (about 4.5 millions), • Some specific categories of citizens have been more prone to react and participate to the pilot. They are citizens with chronic diseases (e.g., heart failure, diabetes, chronic pulmonary occlusive disease - COPD, and cancer), their families and all the civil servants, stakeholders (e.g., associations and charities) and public health system employees working on providing public services (e.g., treatments, assistance, etc.) to patients.

2.2.2 Pilot Campaigns in SLOVENIA

6 Pilot campaigns in Slovenia about media freedom, corruption, cooperative society, tax fraud, European year of citizens and tender Puch Europe publishment.
These pilots campaigns were conducted by four Slovenian Members of the European Parliament Ms. Tanja Fajon, Dr. Romana Jordan, Ms Mojca Kleva and Ms Zofija Mazej Kukovič. Ms Tanja Fajon at the first pilot opened the discussion about **media freedom** in Slovenia and European Union in time of release of Media freedom Index in November 2012. Ms Tanja Fajon wanted to collect opinions and ideas of Slovenian and EU citizens on media freedom. Another pilot by Tanja Fajon and her team on #crim was about **corruption** on national level and level of European Union. Ms Mojca Kleva and her team prepared a pilot on **cooperative society** since the United Nations General Assembly has declared 2012 as the International Year of Cooperatives, highlighting the contribution of cooperatives to socio-economic development, particularly their impact on poverty reduction, employment generation and social integration. Ms Mocja Kleva ran another pilot about **tax fraud**. Tax fraud and tax evasion affects us all. It occurs within a country and across countries both within the EU and globally. That is why a single country cannot solve the problem on its own. The EU and Member States need to work more together and internationally to combat the problem at home and abroad. Ms Romana Jordan and her team implemented a pilot about **European year of citizens**, #citizenshipEU, because the year 2013 is the year of European citizenship. Ms Zofija Mazej Kukovič and her team implemented a pilot about publishment of **tender Puch Europe**- #runEurope. The project is about food and new working positions.
Involved policy makers
The Members of EU parliament were Ms. Tanja Fajon a Member of Group of the Progressive Alliance of Socialists and Democrats in the European Parliament, Dr. Romana Jordan a member of Group of the European People's Party, Ms Mojca Kleva Member of Group of the Progressive Alliance of Socialists and Democrats in the European Parliament and Ms Zofija Mazej Kukovič Member of European Parliament in a Group of the European People's Party.
Target groups
Communites by Tanja Fajon, MeP Communities by Mojca Kleva, MeP Communities by Romana Jordan, MeP Communities by Zofija Mazej Kukovič, MeP (Project Požen' Evropo)

Institute for electronic Participation (INePA) Students of Faculty of Social Sciences in Slovenia Nongovernmental organizations thorugh Centre for Information Service, Co-operation and Development of NGOs – CNVOS Contacts of Centre for eGovernance Development Community Media (Studio 12) and interested public

2.2.3 Pilot Campaigns in GREECE

3 Pilot campaigns in Greece about RES, Financial Crisis in the Southern European Countries, and Women Entrepreneurship
Policy campaigns were conducted by three Greek policy makers, in particular Members of the European Parliament (Mr Ioannis Tsoukalas, Ms Marilena Koppa, Ms Rodi Kratsa) who used the PADGETS platform to investigate public opinion on issues that are on top of the European Parliament's political agenda. The sensitisation of Ioannis Tsoukalas on renewable energy sources, motivated him to run a PADGETS campaign concerning policies to exploit Wind Power as an alternative and renewable energy source. The campaign deals with the **Renewable Energy Sources**, focusing on Wind energy and methods to replace electricity in Greece. Ms Marilena Koppa organised a campaign with European scope entitled as the "South In Talk". The objective of the campaign was to establish dialogue between citizens of the South, thus it was held in cooperation with policy makers and institutions from other **Southern European Countries** (Italy, Spain, Portugal). The campaign covers issues of the **financial crisis** such as austerity measures, fiscal consolidation, etc. and how the four Mediterranean countries can face them collectively as a European Periphery in order reach growth during this challenging time. The third campaign was motivated by the latest EU directive on improving the gender balance among non-executive directors of companies that is currently under debate in the European Parliament. In order to come up with a proposition on the legislation framework for this implementation in Greece, the Greek MEP Rodi Kratsa, deployed a PADGETS campaign. The topic of the campaign was "More **Women** on Boards" and the discussion with citizens, was about the measures to be taken in order to exploit the high level of education, the diverse skills and ambition of Greek female executives.
Involved policy makers
The main actors of the pilot campaigns were the Greek Members of EU parliament Mr. Ioannis Tsoukalas Member of Group of the European People's Party, Ms Marilena Koppa Group of the Progressive Alliance of Socialists and Democrats in the European Parliament and Ms Rodi Kratsa Member of Group of the European People's Party and Vice President of the European Parliament for the period 2007-2012. Apart from the core pilot team members, policy makers from Italy, Spain Portugal were also involved as liaisons to establish an international consultation (Leonardo Domenici - MEP, Miguel Angel Martínez - MEP and VP of the EU, Joao Ribeiro - International Secretary of the Socialist Party and Carlos de Sousa Santos - Youth Empowerment Unit Coordinator).
Target groups
Since the campaigns run through the social networks of the MEPs, the primary audience was the Social

Media Communities already established by the involved policy makers (approximately 20.000 followers in total). However campaigns were targeted towards all Greek citizens and partially reached European citizens as well. Specific target groups were also identified and approached, such as Environmental Organisations, Women associations, NGOs, University students, etc.

2.2.4 Pilots Conclusions

All the aforementioned pilots were conducted using all the offered functionalities of PADGETS platform. The results/outcomes of these pilots were very promising. This assumption derives from the fact that the conduction of the pilots was, from the technical point of view, smooth without disturbances or any other non-predicted troubles. This fact demonstrates the quality and the maturity of PADGETS technological assets. Also the participated in the Pilots PADGETS partners gained valuable experience in conducting Policy Campaigns involving actors of various origins.

The whole impression of the policy makers' experience with PADGETS was positive, as they liked the PADGETS concept and methodology for implementing policy campaigns. They reported the benefits of the PADGETS usage in raising people's awareness in critical issues, in bringing debates outside the ordinary places of consultation, reaching greater portion of citizenry and understanding citizens' desires and concerns. It is worth mentioning that all declared their intention to keep using the PADGETS platform by organising further campaigns and promote the PADGETS idea to their colleagues and other levels in the political institutions' organisational structure.

3. Market trends at a glance

According to eMarketer report there is a linear growth of social networks usage. In 2014 the prediction is that the Social Network users will achieve the 1,85 billion worldwide.

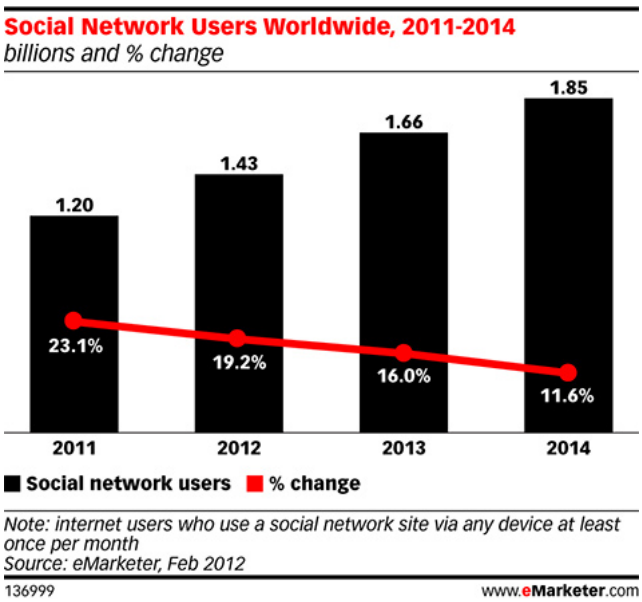


Figure 23: Social Network Users Worldwide

The table below, taken from Nielson Social Media Report 2012, illustrates the relative popularity and trends for the top social networks in the US. PADGETS connects, in some way, to three of those: Facebook, Blogger and Twitter.

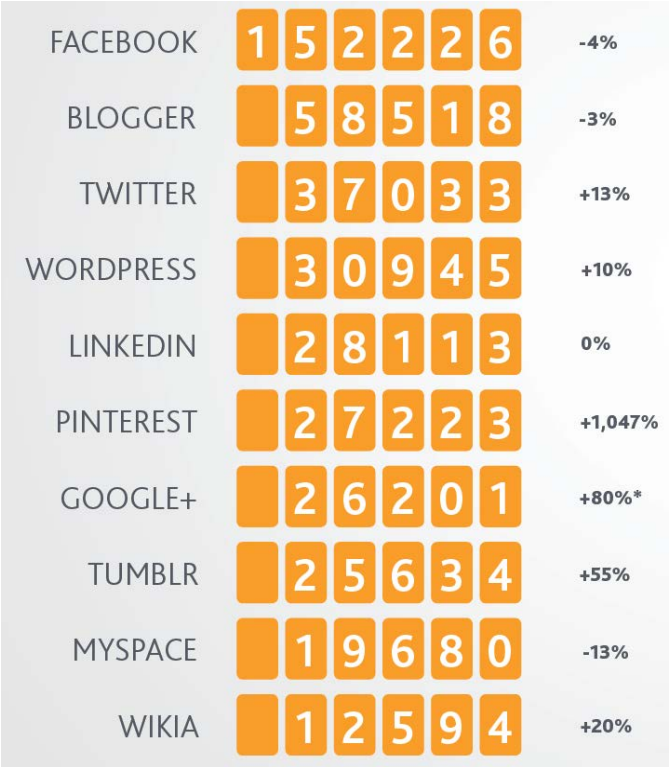


Table 1: Top Social networks in the US

3.1 Target markets for the PADGETS solution

In order to have a clear image of the related to PADGETS Market Trends we will present the related to Social Networks/Media technologies Gartner Hype Cycles. Gartner Hype Cycles provide a graphic representation of the maturity and adoption of technologies and applications, and how they are potentially relevant to solving real business problems and exploiting new opportunities. Gartner Hype Cycle methodology gives a view of how a technology or application will evolve over time, providing a sound source of insight to manage its deployment within the context of your specific business goals.

According to Gartner Report of 2012 for the emerging technologies the Hype Cycle of 2012 shows that the related to PADGETS field is on the Peak of the curve. This field is the Social Analytics.

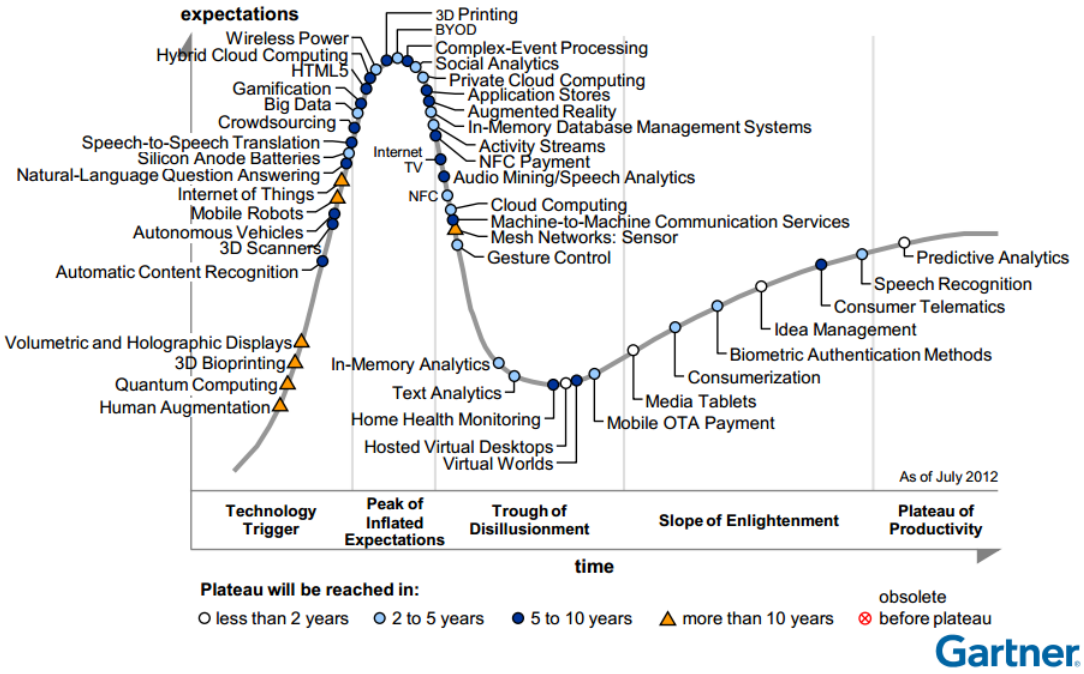


Figure 24: Emerging Technologies Hype Cycle 2012

Following the Emerging Technologies figure, the next graphic to present is the Gartner Hype Cycle for Social Software. Again the related to PADGETS fields of social software

- Crowdsourcing,
- Social Media Metrics,
- Content Analytics,
- Social Network Analysis,
- Social Analytics,
- Social Media Monitors,
- Idea Management and
- Social Media Monitors

appear on the Social Software Hype Cycle while the majority of them are on the pick of the cycle.

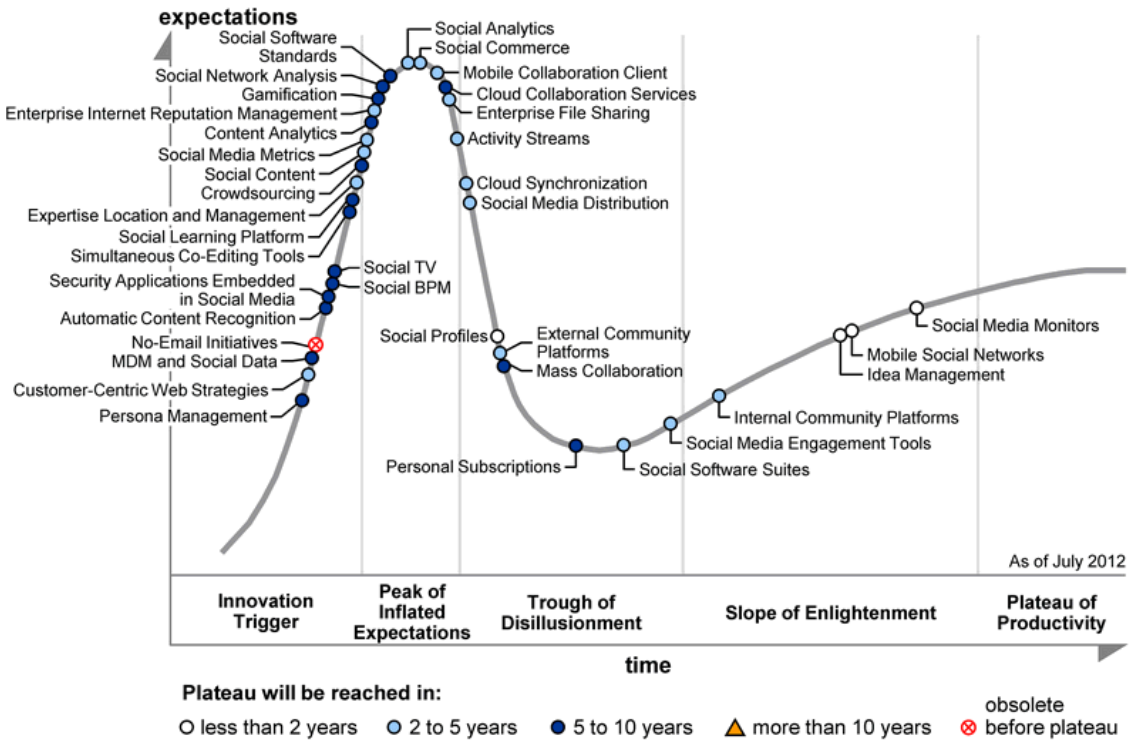


Figure 25: Gartner Hype Cycle for Social Software, 2012

4. Competitive Landscape

4.1 Main Competitors

pipes	YAHOO! Yahoo.com
Pipes is a composition tool to aggregate, manipulate, and mashup content from around the web. Pipes is a free online service that lets you remix popular feed types and create data mashups using a visual editor. You can use Pipes to run your own web projects, or publish and share your own web services without ever having to write a line of code. Like Unix pipes, simple commands can be combined together to create output that meets your needs: • combine many feeds into one, then sort, filter and translate it. • geocode your favorite feeds and browse the items on an interactive map. • power widgets/badges on your web site. • grab the output of any Pipes as RSS, JSON, KML, and other formats.	
http://pipes.yahoo.com	Documentation: http://pipes.yahoo.com/pipes/docs?doc=overview

IBM	IBM Corporation
IBM® Web Content Manager is designed to accelerate web content development and deployment through Internet, intranet and extranet sites. This software enables users to create and publish content while IT retains control. Through advanced personalization, IBM Web Content Manager delivers the right information to the right audience when needed, providing an exceptional customer experience. IBM® Web Content Manager delivers consistent multichannel experiences: • Present unified messages, offers and content across multiple online channels. • **More easily syndicate content to social channels, such as Facebook, Twitter, LinkedIn and IBM Connections, and then track the effectiveness of that content.** • Improve the mobile experience through mobile themes that match the mobile device form factor and support customer interaction and navigation patterns.	
http://www.ibm.com/us/en/	Documentation: http://www-03.ibm.com/software/products/us/en/ibmwebcontmana/

hootsuite Social Media Dashboard	**Hootsuite**
Hootsuite: is a social media dashboard that allows you to control multiple social networks. It offers a way to combine and coordinate daily tasks in the social media space. HootSuite is a social media management system for brand management created in 2008. The system's user interface takes the form of a dashboard, and supports social network integrations for Twitter, Facebook, LinkedIn, Google+, Foursquare, MySpace, WordPress and Mixi. Additional integrations are available via HootSuite's App Directory, including Instagram, MailChimp, Reddit, Storify, Tumblr, Vimeo and YouTube. As of April 2013, HootSuite has over 6 million users.	
http://hootsuite.com/	Documentation: http://blog.hootsuite.com/category/resources/

salesforce radian6 salesforce buddy media salesforce social.com	salesforce marketing cloud **Salesforce marketing cloud**
Radian6: Fully integrated environment for Social Media Monitoring and Engagement, Provides results with Demographics, location and Trending Topics in a customizable dashboard. Examples of various case studies are available. Salesforce Radian6 helps companies listen to what people are saying about them online and engage in those conversations across the social web. From blogs and comments to multimedia, boards, forums and communities like Twitter, Radian6 gathers the discussions happening online and gives businesses the ability to analyze, manage, track, and report on their social media monitoring and engagement efforts. Radian6 provides the social media monitoring platform for marketing, communications and customer support professionals. The company's flexible dashboard enables monitoring all forms of social media with results appearing in real-time, as discovered. Analysis widgets, streamlined reporting, integrated workflow capabilities and our Insights platform give users the ability to uncover influencers, track and measure engagement and determine which conversations are having an impact online. Integrated social media, CRM, and web analytics also help	

companies define their social media ROI.

Buddy Media is the social enterprise software of choice for eight of the world's top ten global advertisers, empowering them to build and maintain relationships with their consumers in a connections-based world. The Buddy Media social marketing suite helps brands build powerful connections globally with its scalable, secure architecture and data-driven customer insights from initial point of contact through point of purchase. With Buddy Media you can run integrated campaigns across Facebook, Twitter, YouTube and your websites, increase fans, followers and advocates. Publish engaging and interactive social apps. Easily create landing pages and microsites and extend social to your websites. Understand engagement trends, demographics, conversions and business metrics with powerful analytics.

Social.com is a social advertising application for creating, optimizing and automating social ad campaigns through an easy to use, self-service solution.

For the first time ever, brands and agencies will be able to connect social ads to real-time customer and social listening data, allowing them to reach customers in entirely new ways and maximize return on advertising dollars. Global leaders including Ford, GroupM and Resolution Media have managed more than 500,000 social ad campaigns and one trillion impressions with Social.com.

SAN FRANCISCO—April 23, 2013—Salesforce.com [NYSE: CRM], the enterprise cloud computing company, today delivered Salesforce Social.comTM, transforming advertising with the world's first social advertising application that connects social ads with CRM and social listening. For the first time, brands and agencies will be able to power social ad campaigns on Facebook and Twitter using real-time customer and social listening data, allowing them to reach customers in entirely new ways and maximize return on advertising dollars. Social.com is part of Salesforce Marketing Cloud, the #1 social marketing solution for transforming how customer companies market in the social and mobile era. The **Salesforce Marketing Cloud now includes the #1 social listening application, Salesforce Radian6, the #1 publishing application, Salesforce Buddy Media, and the #1 social advertising application, Social.com.**

http://www.salesforcemarketingcloud.com	Documentation: http://www.salesforcemarketingcloud.com/products/social-media-listening/

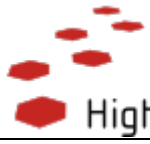
sysomos	**Sysomos Inc.**
Sysomos: A social media analytics suit that provides users with the tools to measure, monitor, understand and engage with the social media landscape.	
http://www.sysomos.com	Documentation: http://www.sysomos.com/docs/Sysomos_Products_Overview_Brochure_web.pdf

Brandwatch Social Media Monitoring	**Brandwatch**
Brandwatch: Tool for monitoring and analysing social media data, which emphasizes in cleaning and matching data against users' advanced queries.	
http://www.brandwatch.com/	Documentation: http://www.brandwatch.com/why-brandwatch/key-features/

CONVERSEON	**Converseon**
Converseon: Offers a full service, combining automated and human analysis, of social media conversation to create the deep insights required to drive business objectives.	
http://converseon.com/	Documentation: http://converseon.com/miner

cymfony™	**Cymfony Maestro**
Cymfony Maestro: An enterprise-class listening platform for monitoring and measuring Social Media performance that sorts the vast amount of information online, giving clients real-time access to the most comprehensive archive of traditional and social media	
http://www.kantarmediauk.com/cymfony/maestro.aspx	Documentation: http://www.cymfony.com/uploadDocs/Cymfony-Maestro.pdf

evolve24 A Maritz Research Company	Maritz RESEARCH **Maritz Research**
evolve24 Mirror: A market intelligence platform for supporting business decisions and strategic planning that uses predictive algorithm to forecast future behaviors and perceptions acquiring data from both traditional and social media.	
http://www.maritzresearch.com	Documentation: http://www.maritzresearch.com/mirror-2.0.aspx

	**High-Tech Grunderfonds**
Media Metrics socialMeme: A browser-based SaaS solution providing a detailed overview of opinions expressed on all media channels (Social Web, TV, radio and print) in real time.	
http://www.en.high-tech-gruenderfonds.de/	Documentation: http://www.en.high-tech-gruenderfonds.de/2012/03/mediametrics-gmbh-high-tech-grunderfonds-invests-in-intelligent-media-monitoring-solution-socialmeme/

	**NM Incite**
NM Incite My BuzzMetrics: A scalable, web-based social insights platform designed for Fortune 1000 marketers and their agencies to organize, segment and analyze clean, trusted, industry-specific global insights in real time.	
http://nmincite.com	Documentation: http://nmincite.com/solutions/my-buzzmetrics/

	 **Mutual Mind**
Mutual Mind: Aims to extract business value from social interactions and enable user to integrate social analytics to existing business applications.	
http://www.mutualmind.com	Documentation: http://mutualmind-marketing.s3.amazonaws.com/pdf/mm-product-features.pdf

	**Attensity360**
Attensity360: SaaS "listening and engagement system" monitoring customer's voices across multiple channels and providing actionable insights.	
http://www.attensity360.com	Documentation: http://www.attensity.com/wp-content/uploads/2010/08/Attensity360-04-27-2010.pdf

netvibes Dashboard Everything	**NetVibes**
NetVibes: A full customizable and personalized dashboard publishing platform integrating various types of content on the Web.	
http://www.netvibes.com	Documentation: http://documentation.netvibes.com/

UBERVU	**uberVU**
uberVU: End-to-end social intelligence dashboard that covers all 4 social media value pillars: Monitoring, Analytics & Reporting, Engagement, Workflow.	
http://www.ubervu.com/	Documentation: http://www.ubervu.com/signals/

beevolve	**Beevolve**
Beevolve: Social Media Monitoring and Measurement Platform that integrates services for Tagging, Engagement, Analysis and Collaboration.	
http://www.beevolve.com	Documentation: http://www.beevolve.com/features/

4.2 International (European) Projects

SOCIOS	**SocIoS**: Exploiting Social Networks for Building the Future Internet of Services (FP7-ICT-2009-5)
SocIoS pave the way for building qualitative, functional and usable business applications exploiting the User Created Content and the Social Graph of users in Social Networks. By providing tools for cross-platform application development and deployment; support for SLAs and QoS; tools for UCC and social graph management; and most importantly, a usable framework to build services in and through Social Networks, SocIoS will provide incentives for the development of business applications.	
http://www.sociosproject.eu/	Duration: 01/09/2010 - 28/02/2013

	**Nomad:** Policy Formulation and Validation through non moderated crowdsourcing (FP7-ICT-2011.5.6)
Nomad's vision is to provide decision-makers with fully automated solutions for content search, acquisition, categorisation and visualisation that work in a collaborative form in the policy-making arena.	
http://nomad-project.eu/	Duration: 2012-01-01 – 2014-06-30

5. SWOT Analysis

This section provides a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, listing the internal strengths and weaknesses of the PADGETS solutions as well as the opportunities and threats faced by PADGETS due to changes in the external environment. SWOT Analysis[8] is a strategic planning tool for evaluating the above factors for a project or a business venture. This process allows identifying internal and external factors that are favorable and unfavorable to achieve the project's objectives. More specifically it provides the opportunity to:

- Appreciate the strengths of the project's offerings.
- Define the weaknesses.
- Recognize the possible threats.

5.1 Strengths

The following constitute the important features, which are considered as principal strengths of the PADGETS solution:

- PADGETS is the product of not one, but 12 organisations with complementary technical expertise as well as business and market involvement in a) developing and supporting Service Oriented Architectures, b) SNS mining, analysis and visualization, c) developing APIs for SNS, d) semantic web technologies. Fundamentally, each partner contributes intellectual and physical capital to the project outcome.
- PADGETS was marketed throughout Europe, exploiting the channels offered by all 12 partners; therefore market entry alternatives and available resources for expansion into various European markets are multiplied.
- PADGETS was supported by the European Commission both financially and marketing wise.
- PADGETS deployed innovative technical solutions and was validated in the context of the project in key business domains.
- The fact that the PADGETS solutions have been tested in real life scenarios is a positive factor that increases the credibility of the proposed technologies.
- PADGETS collaborated with other EU-funded projects and, thus, the relevant technologies are based on advancing existing state-of-the-art theories and tools.
- PADGETS is fully aligned with the Future Internet concept as it allows for "application development of social and economic significance".
- PADGETS offers a complete solution combining a unique platform enabling simple and unified access to multiple Social Networking Sites and a collection of integrated services, to improve the way individuals and / or organizations consume information from Social Networking Sites while addressing all aspects of the value chain in any business environment.

- PADGETS API combines usability, context adaptability and efficiency. It is able to provide simple interactions with several different Social Networking Sites.
- PADGETS SOA infrastructure provides incentives to infrastructure providers to lease their infrastructure for hosting PADGETS services.
- PADGETS auxiliary services focuses on developing new business environments that may be tightly integrated with multiple SNS platforms, providing greater flexibility in choosing SNS platforms and means to interact with them as well as enriched service functionality via mashups with other PADGETS services.
- PADGETS has no competitor with a single product on the market that combines equivalent functionality in one offering.
- PADGETS offers state-of-the-art solutions driven from the market needs and complying with European policies and ICT research priorities and standards to advance research in solutions for the Social Networks arena.
- The validation of the PADGETS solution with the support of user partners that are key players guarantees the field orientation of the product in real world applicability.
- Last but not least, on the strengths of the PADGETS solutions, one should also consider the fact that the underlying technologies are deemed as “hot” for the coming years.

5.2 Weaknesses

The main weakness of product mix is that the PADGETS solution is the result of a Research and Development activity. As such, the lead-time involved in the delivery of industrial strength exploitable results is usually longer than that of a product resulting from standard commercial development activities.

The presence of many partners may be an obstacle in achieving products with clear exploitation rights. Even though complementary expertise exists in the consortium, collaboration sometimes was difficult. Moreover effective coordination was challenging and time consuming. Targeting initially to the proof of concept from the technical perspective, the evaluation application domains became very specific and limited.

It is expected however that the Consortium synthesis, including experienced and highly qualified academic institutions, technology providers and user partners that bring real life business experience and the possibility to use existing sales channels will facilitate and speed up the project results exploitation process after its official end.

With respect to legal analysis and especially to the T&C of the SNSs, legal and ethical barriers are important obstacles that can’t be easily avoided by those that would like to commercialize PADGETS in the future. Besides the exploitation problems that brought into the surface during projects lifetime, legal issues affect also the platform contextually. For instance, not all networks support all functions.

Finally, it was mentioned by the end users that a major challenge for integrating PADGETS in their business processes is the quality of service. The delivered service level needs to be guaranteed. Such a fact, entails the need for commercial/business agreements with SNS providers.

5.3 Opportunities

In identifying the opportunities arising for the PADGETS offerings, we should take note of the trends and evolutions in the respective target markets.
Market analysis indicates that the Social Networking Sites market is continuing its confident growth in all aspects: users, platforms, tools, and monetization for the years to come.
Of the available types of products for the derivative SNS market (distribution and consumption ones), SNS consumption tools, i.e. products that allow to consume social media produced by others, form the largest part of the SNS market.
At the same time, SNS content is being consumed and distributed in various types and ways and through various SNS platforms.
Moreover, no currently available products for the SNS market combine functionality related to a single access point of SNS APIs, toolset for exploiting SNS functionalities from a business perspective and Auxiliary Services in one offering.
PADGETS is well positioned to address these opportunities as it:

- targets the SNS market which has a high growth potential in the years to come
- focuses on the consumption aspects of interactions with SNS, which forms the largest part of the market
- is agnostic with respect to the type of content being consumed or the way it is being consumed
- enables interaction with multiple SNS.
- provides a unique offering combining functionality not currently available as a whole in the market

Finally, PADGETS consortium will start collaboration with OpenSocial foundation. More specifically, code developed in PADGETS will be contributed to the foundation. OpenSocial foundation is also are looking for help to define OpenSocial 3.0, and PADGETS object model and use cases should be of interest to them as well.

5.4 Threats

The major threat envisaged is associated with the acceptance of the solution from the market it is targeting to, since it will be putting the bar quite high in terms of end users and industry awareness levels for eventual operational deployment. In order to approach and make a positive impact, a large number of potential clients will need to be exposed to the PADGETS offer, and the demonstrations, performance and customisations need to effectively pass to them an impressive new concept. The presentation material will rely significantly on the user experience from the validation of PADGETS.
PADGETS is also acting in an area, in which a lot of solutions instantiated recently, in order to provide relevant (although not the same) functionality. As this area is becoming more and more popular, the competition for PADGETS will be greater, thus the extra functionalities should prove to be of major advantage for the end users.

The acceptance of the PADGETS platform and tools is strongly related to whether end users and industry will be convinced on the suitability of this product to offer the most appropriate results. At this point, it must be noted that strategic alliances, which can potentially be established, are seen as an important success factor, since they are consuming a big part of the market share, along with new joint ventures.
Moreover, a great threat from PADGETS comes from the legal requirements. With the rise of the popularity of SNS and considering the privacy and data protection European constraints, research has been performed in the area of SNS focusing on tackling the legal issues that emerge out of their popularization. Despite the fact that the consortium addressed the issue of the minimum legal requirements that must be taken into account, PADGETS project must continuously adhere to in order to be fully compatible with the principles of the privacy and data protection.

6. Relevant Business Models

This section reviews business models that are frequently used by platform / software providers. The reviewed models have the same objective and that is to generate income stream for the software / platform provider to create sustainability. The models can be used solely or in combination with other business models.

Apart from the main objective of generating revenue the models aim to achieve the following general objectives:

- *To offer various payment options (flexibility) to the customer*
- *To assign ownership of the software / platform*
- *To promote the software / platform and to attract traffic*

Each Business model plan is firstly described and then analysed to depict the key advantages and disadvantages for the provider and also for the user. Each analysis is followed by a short summary box which indicates who and under which requirements should use the model to enjoy its greatest benefits.

6.1 Licensing

Licensing model allows providers to supply numerous users with software via Internet where customers do not host the software on their computers but customers purchase a license for usually long term period such as one year or more but can also be for lifetime. Licenses are offered either directly by the vendor or by so called 'aggregator' (intermediary party) and users can start using the service directly after paying the license. Thus a customer purchases not the software, but services or in other words, the license to use to service. In a consequence, provider is fully responsible for maintenance of the software. The table below presents main futures of the SaaS model, the key advantages and limitations from both: user's and provider's points of view:

	Advantages	Disadvantages
SaaS for Users	• Outsourced expertise (vendor is responsible for updates, creation and maintenance of software • Low entry costs -No significant initial investment to amortize required • Can be used by organizations of all sizes • Does not require the deployment of large infrastructure • No costs of administrating • Customers do not have to install and maintain programs • Users can often taste the software before they buy services from vendors • Possibility to change application provider without losing significant costs • Allows to downsize the IT department	• Client's data hosted by provider - moving business data from existing applications to the new ones exposes to the risk of losing crucial data • Direct control of data given to provider • Limited accessibility to adjust applications to specific needs as customers have no possibility to customize them • Long-term costs are less certain than for the on-premise applications • Sometimes in the later stage it may be required to involve IT resources to integrate applications with other systems or significantly customize them
SaaS for Providers	• Changes in application for one client allows to improve changes for all users of the applications • Possibility to acknowledge customers with services by offering them a trial period before they buy a subscription	• It is easy to lose users as they can change a provider of services without any significant costs • Limited possibility to customize services • If applications are offered internationally, there is a need to adjust integrated services to various local law regulations, data security and data protection standards, financial requirements.

Table 2: Advantages and Disadvantages of the SaaS Model

When to deploy SaaS:

- Strong technical team that can support / maintain the software on behalf of the customer is required
- Limited requirements for customisation
- Software is highly compatible with other applications and it's easy to integrate
- Requires higher number of customers to make it a profitable model
- This option is the most suitable for offering n1.

6.2 Pay As You Go Model (PAYG)

While SaaS is a business model where the fees are usually flat, Pay As You Go (PAYG) model allows customers to pay for the services they use: for storage capacity and processing power or for the time they use the service. The table below presents the main advantages and disadvantages of PAYG:

	Advantages	Disadvantages
SaaS for Users	• Significant reduction of entry costs – no substantial initial purchase required • Good solution for companies with limited resources for IT services or for companies that are not sure what will be their needs • Customer pay only for services really used • Smooth process of implementation of the new solutions, without disrupting ongoing operations	• Requires integration of hardware, software and service solutions • Unpredictable costs for services
SaaS for Providers	• As the entry costs are very low, it is easy to attract new clients • Clients can choose features they really need for their operations	• Unpredictable income • It is easy to lose users as they can change a provider of services without any significant costs

Table 3: Advantages and Disadvantages of the PAYG Model

When to deploy PAYG:

- Requires a strong technical team that will maintain the software/platform
- Useful to attract new clients quickly but not guarantees their loyalty
- When you want to target organisations with limited IT departments
- When you offer different features that can function separately

6.3 Advertising Based Business Model

Advertising Based Business Model uses online advertising which is a form of promotion that uses the Internet and World Wide Web to deliver marketing messages to attract customers. Examples of online advertising include contextual ads on search engine results pages, banner ads, blogs, Rich Media Ads, Social network advertising, interstitial ads, online classified advertising, advertising networks and e-mail marketing, including e-mail spam. Many of these types of ads are delivered by an Ad server. For the purposes of PADGETS we are focusing only on the banner ads that could be placed on the platform.

	Advantages	Disadvantages
For Platform Owners	• One major benefit of online advertising is the immediate publishing of information and content that is not limited by geography or time. • Large user community on the platform can attract a large amount of ad publishers • Continuous stress on improvement and promotion of the platform - the more the web site is attractive and visited, the more advertisers are interested in it. • Low cost for provider to place ads • Online advertising is so flexible that even small businesses can afford to look into advertising online.	• Price of advertisement and ad revenues depend on the number of visitors of the web site. • Providing fee or share of ad revenue when using middlemen (ad network) in selling online ad space. • Cost of finding and convincing potential advertiser when selling online ad space without middlemen • Visitors of the website can be annoyed by ads.
For Publisher	• Easy to test the response to the advertising • Online advertising works 24 hours a day, 365 days a year • Easier to change online ads • Easy to target specific audience groups • Online advertising is so flexible that even small businesses can afford to look into advertising online.	• Just because people click on the ads doesn't mean they are interested in it • Visits will depend on the reputation, popularity of the website • Can be expensive for popular words • Unsure outcome and impact

Table 4: Advantages and Disadvantages of Advertising Based Business Model

When to deploy Advertising Based Business Model:

- Platform has a large community of users that other organisations want to target by their advertisement
- Platform providers are certain that users of the platform won't be deterred by the ads
- Platform has to maintain the same focus to ensure stable audience for the publishers

6.4 Subscription Model

The subscription business model is a business model where a customer must pay a subscription price to have access to the product/service. The model was pioneered by magazines and newspapers, but is now used by many businesses and websites. Renewal of a subscription may be periodic and activated automatically, so that the cost of a new period is automatically paid for by a pre-authorized charge to a credit card or a checking account. A common model on web sites, colloquially becoming known as the 'freemium' model, is to provide content for free, but restrict access to premium features (for example, archives) to paying subscribers. In this case, the subscriber-only content is said to be behind a paywall or - in a scholarly context - closed access, which alludes to the alternative model of open access[1]. There are various types of subscription that can define the amount of data that can be used, the specific services or the number of access times.

	Advantages	Disadvantages
Subscription model for Users	• Predictable cost of services • Usually includes updates and some technical support • Possibility to spread payment • Can be used by clients who cannot connect to the Internet for security reasons • Profitable for customers who use subscribed services on regular basis • Can save time and money	• Unfavorable for companies that overestimated their need for services while buying subscription • Clients cannot resign from services until the end of the contract • For many companies it is a speculative investment • Subscription models increase the possibility of vendor lock-in • Often require to gather substantial amounts of information from the customer and this raises issues of privacy.
Subscription model for Providers	• Assured a predictable and constant revenue stream from subscribed individuals for the duration of the subscriber's agreement • Reduce uncertainty and the riskiness for the provider • Possibility to attract new users by offering them a trial period before they sign up • Revenue grows faster than invested work • Payment received in advance	• Consistent and predictable steam of revenue, based on clients' subscription duration • Due to the low entrance costs it is difficult to predict sustainability of subscription model as subscribers may migrate to competitors

Table 5: Advantages and Disadvantages of the Subscription Model

[1] http://en.wikipedia.org/wiki/Subscription_business_model

When to deploy Subscription Model:

- Platform can be beneficial to the user for a short period only thus licencing is not necessary
- Basic use of the platform can be free but access to extra features / content can be charged for
- Platform providers are secure that customers won't migrate elsewhere
- This option is the most suitable for offering n2.

7. PADGETS Solution Commercial Strategy

7.1 Product promotion and selling framework

As with all IT products, and in order to define whether the promotion and sales approach for the PADGETS solution will be based on Benefits, Advantages or Features, we should take into account:

- Its degree of innovation
- Estimated level of Margins
- Competition recognition
- Structure and Importance of the sales network

The promotion and selling framework thus distinguishes three layers

- On the first lower layer, a "based on features" approach is adopted, in which a solution's dominant features are exploited to increase penetration to the target markets in cases that the network of sales arises as an important factor or the competition landscape is extremely challenging. In such cases, the relevant markets are approached through promoting the supported features of the solution services that can stand as the "selling points" for the target end users.
- On the intermediate layer, a "based on advantages" approach is maintained, in which a solution's advantages are identified as the "selling points" in order to ensure the most appropriate penetration of the product to the target markets. By advantages one can name the degree of innovation and the market margins for adopting a solution, while the competition recognition and the sales network maintain an important role as well.
- On the upper layer, a "based on benefits" approach is enabled, in which a solution's relevant selling strategy is driven by the breakthrough degree of innovation and the high market margins. These constitute the "selling points" of the solution and expose the dominant characteristics of the product to the target markets.

In identifying the positioning of the PADGETS results in the framework described above, we have to consider its project and not product-oriented nature. In this context, the PADGETS ecosystem as a whole is identified as having a high degree of innovation concept and it's positioning in the promotion and selling framework is depicted below Figure 26.

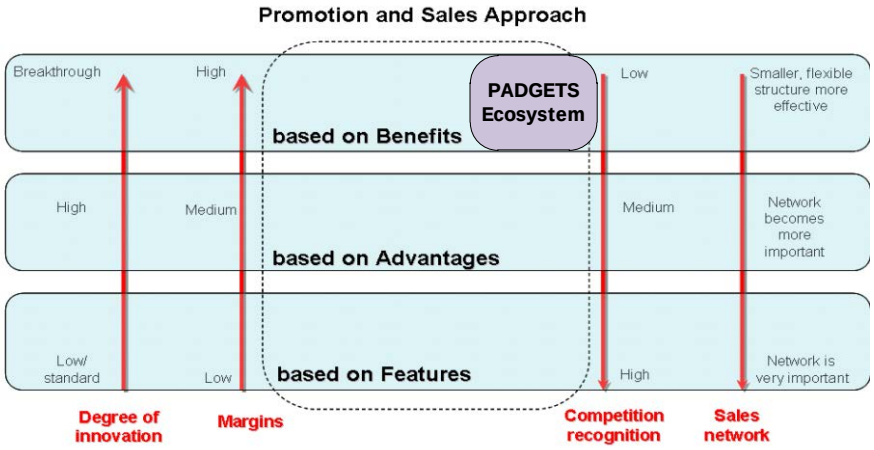


Figure 26: Positioning of PADGETS Ecosystem

Furthermore, PADGETS has helped partners streamline pre-existing background assets and create new focused services. These focused solutions follow best in the category "based on advantages" as they provide solutions that may exist. In promoting these focused solutions it will be necessary to leverage on partners' networks. These solutions will compete against others offered, "armed" by the extra functionality provided in them and the fact that can be combined under one platform, the "PADGETS Ecosystem" which offers a unique ONE STOP entry point for all social media offer for their campaigns.

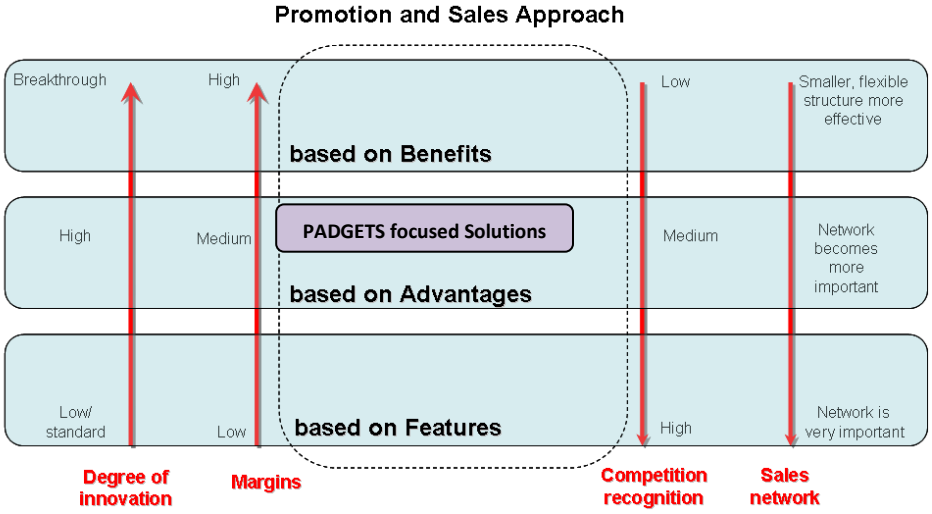


Figure 27: Positioning of PADGETS focused Solutions

7.2 Planning of releases

In the context of the PADGETS exploitation strategy, related exploitation activities will follow a stream of three distinct releases, with the aim to produce commercial strength products from the prototypes developed in the context of the project, formulate strong sales and consultant teams which will grow

gradually without excessive costs, and increase the awareness of PADGETS offering without heavy costs as depicted in the below Figure 28.

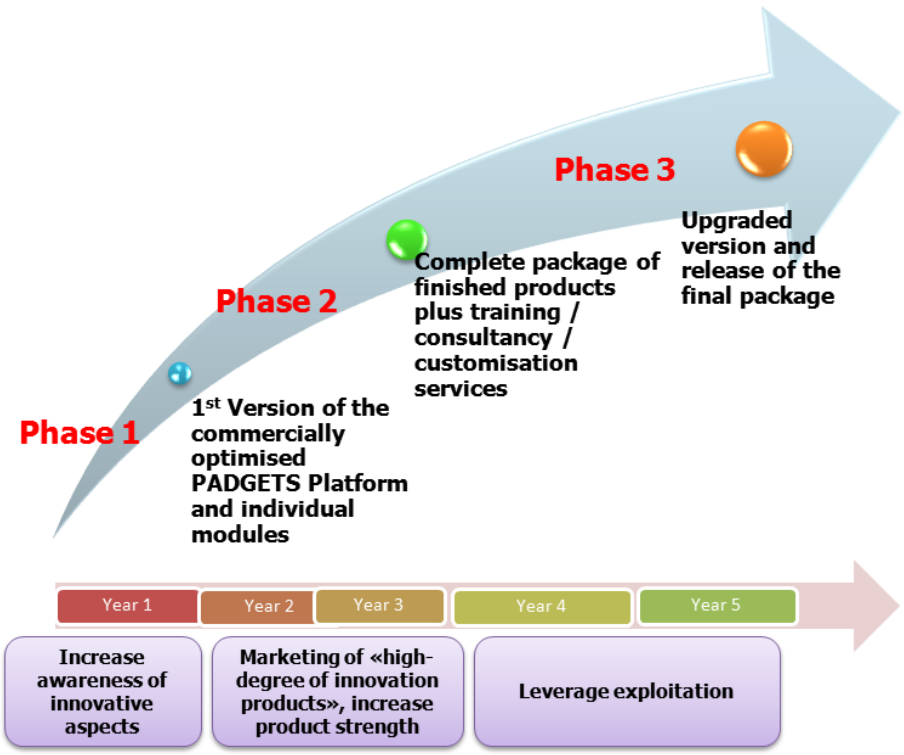


Figure 28: Progression of PADGETS solution releases

Start time for each Phase is Year I post project end.
The activities to be performed in each of the identified phases are presented in Figure 29.

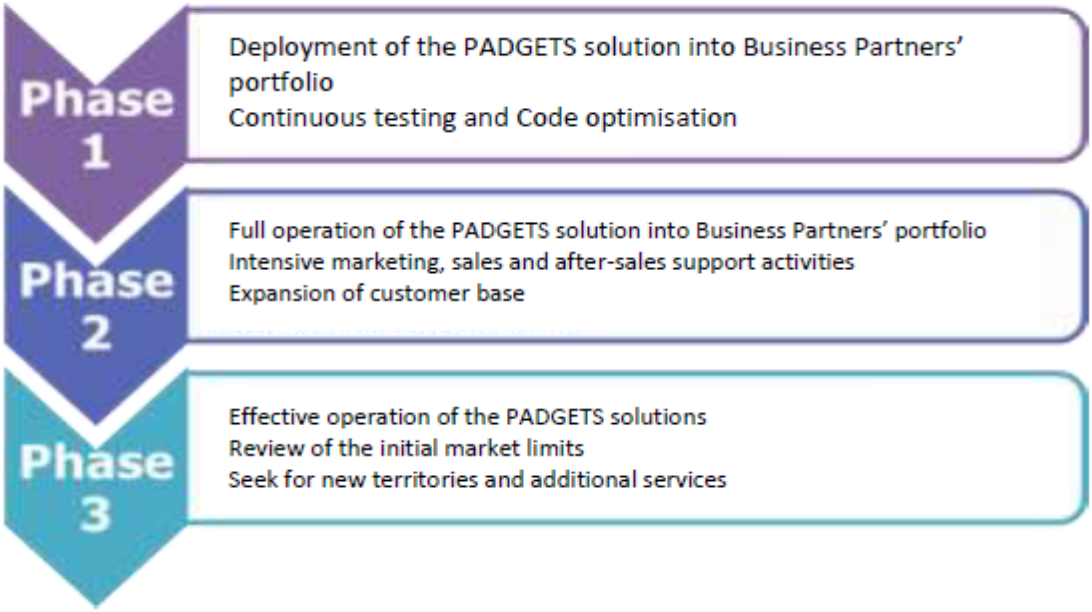


Figure 29: Three-phase approach for exploiting the releases of the PADGETS solution

These 3 different phases of releases are elaborated more in the below table in which the commercial strategy for achieving the desired exploitation level is analysed, along with the milestones for each of the planned PADGETS releases.

	What is the purpose	How will it be offered	What would be the marketing theme	What will be the additions/ upgrades to previous release?
Release 1	***Financial:*** *Increase awareness of the PADGETS solution at low cost as well as giving time to develop the commercial strength versions of the offer in trying to enhance visibility for cross media information access* ***Operational:*** *Get the sales networks of partners familiar with the offer, as well as generating interest from needed investors and larger partners*	*Internet, partners' networks, Sales Department and Existing Customer Base of the ICT and Policy Making related business partners*	*Introduction of new innovative technologies and solutions, understanding of new capabilities and market advantages*	*Provision of commercially strong tools, informed sales networks, increased awareness of target market*

Release 2	***Financial:*** Break-even of investment ***Operational:*** Strengthen solution; form larger group of competent consultants and obtain Institutional Investors and or larger commercial partnerships	Existing Sales Network of partners; focus on existing client base and new prospects mostly in the identified primary market	Improve capability of Primary Market customers to compete and take full advantage of PADGETS innovation and the content that it delivers for their business	A complete package for the delivered PADGETS platform, enriched with support services for training personnel and customising the solution to partners' needs
Release 3	***Financial:*** leverage revenues ***Operational:*** Expand selling base	Partners' sales networks, Partnerships, member of Larger networks, and Referrals from Institutional Investors Networks	Complete solutions for exploiting SNS assets, for supporting new business environments, for utilizing and evaluating the platform for advertising, marketing related companies supported by a leading edge technology backed up by professional services	Implementation of additional cutting edge features as required by competition and market demand

Table 6: Three phases of PADGETS releases

7.3 The marketing plan

The PADGETS marketing strategy will consist of the following activities:

Product identification and enhancement: This involves the revision of the PADGETS brand name, the development of the brand values, such as the availability (value for money, multi-platform, open source etc.), quality (stable, reliable, well-established) and friendliness (familiar user interface), and the product development roadmap, including:

- Strategic direction for what the PADGETS system should contain
- Investigation of adding complementary components through interworking with complementary open-source or commercial consortium partner products
- Work with the open-source community or consortium partners to develop enhancements
- Take direction of the requests for enhancements in producing highly business oriented commercial applications

- Publish the work of the various support communities

Promotion: Related activities include the establishing of the appropriate exploitation channels, including the PADGETS website, which could be transformed into an "e-shop", explaining how to acquire, install, and use the product, and where to go for support. PADGETS might also be provided through SourceForge (http://www.sourceforge.net), the world's largest Open Source software development website. This will further support the fostering of a community that will develop on top of the addressed technologies and make further contributions that can be integrated with the PADGETS system and components.

Network development: PADGETS evolution will also largely depend on the development of a network of companies providing an ecosystem of products and services that complement and extend the PADGETS system:

- Solution Partners: Solution Partners are Independent Software Vendors that offer a wide range of products that are complementary to PADGETS.
- Technology Partners: Technology Partners consist of Independent Software Vendors, and Platform Vendors, that bundle or embed PADGETS.
- Systems Integrators: System Integrators provide expertise for assisting with design, integration, and implementation of applications using the PADGETS system and tools.

PADGETS will also investigate the possibility of participating in existing networks with complementary solutions.

Public Relations and Publicity: For further promoting the PADGETS, public relation tools such as news press releases, feature stories and interviews, photos and videos will be used. All press releases should contain a message related to PADGETS features and benefits, a main point making it worthy and interesting, a link to drive people to the PADGETS website, as the main promotional material.

Direct Marketing: Direct marketing will build upon the normal sales channels of the main industrial and SME partners. As a general line of conduct, the partners involved in commercialization will insert PADGETS solutions into their product range and sales managers will exploit all consolidated customer contacts in order to propose the new offer. At the same time, new channels will be explored and investigated in order to invade into different market shares.

Advertising: The main advertising platform for the project is its official website. All other promotional activity should be aimed at maximizing the exposure of the website. However, it is important that the project maintains other materials such as web banners, product flyers and posters, product packaging and inserts which can be used where applicable.

Product Marketing Material: Supporting product literature and material must present the PADGETS image and message very clearly and professionally. These will contain graphics: logos, web banners, images, posters, white papers, etc; product flyers aimed at various audiences; release notes, screenshots, presentations about PADGETS, case studies and experiences.

8. Financial aspects and forecast

This section presents an analysis conducted by ATC experts of the NewsAsset commercial product sales department, as an indicative example, that can act as a baseline to a more specialized one performed by a "Virtual" company after the end of the project.

8.1 Sizing the market

In order to produce a sizing of the overall potential market PADGETS solutions, we need to introduce the actors of the of the following market categories:

- **Primary Market** comprises of policy makers such as political related organisations, governmental bodies, in Europe and worldwide, including organisations offering several services in these areas (e.g. PR consultants, Communication and advertisement companies etc.) as well as Marketing and Opinion Research companies.

- **Secondary Market** includes software and services developing organisations across Europe offering vertical software solutions and applications by exploiting assets and services that are offered from PADGETS. The majority of such organisations are SMEs. Moreover, the secondary market comprises organizations that may offer a SOA infrastructure and subsequently host PADGETS platform and make profit out of it.

- **Tertiary Market** includes Consultants / Intermediate users: These are IT Companies who work on behalf of end users (i.e. Political Organisations, governmental bodies etc.), e.g. outsourcing, either for software development or for providing consulting services to the IT Groups of the end users.

We also need to consider the scheduled releases for the PADGETS offerings:

- Release 1 (Semester 1 post project end) will deliver the commercially optimised PADGETS Platform and the individual modules.

- Release 2 (Semesters 2 and 3 post project end) will be validated in first revenue contracts for the target domains.

- Release 3 (Semesters 4 and 5 post project end) will be derived from extensions during Release 2 and will be validated in revenue earning projects in order to consolidate the final release baseline.

Further to the above, we should take into account the licenses foreseen and the services to be offered (Consultancy, Implementation and customisation, Training and Support).

Source of Revenue	Target Market		
	Primary Market	Secondary Market	Tertiary Market
	Policy Makers/ Governmental Bodies	Software developers/ Integrators	Consultants / Intermediate users
Sales of Licenses	☑	☑	☑
Consultancy Services	☑	☑	☑
Implementation and customisation services	☑		
Training services	☑	☑	☑
Support services	☑	☑	☑

Table 7: PADGETS source of revenue per target market

PADGETS exploitation is very much about specialised services of highly trained and experienced engineers in the area of applications and services applied to the SNSs, rather than off-the-self sales or product installation and rapid customisation (where the only thing needed is a quick training of engineers and where sales volumes depend on market penetration capability of the sale team). Thus, a specific strategy has to be employed in order to achieve deployment at minimum organisational cost and to ensure quality services. The evolution of commercial teams working on promoting the products to the relevant target markets is described in Figure 30.

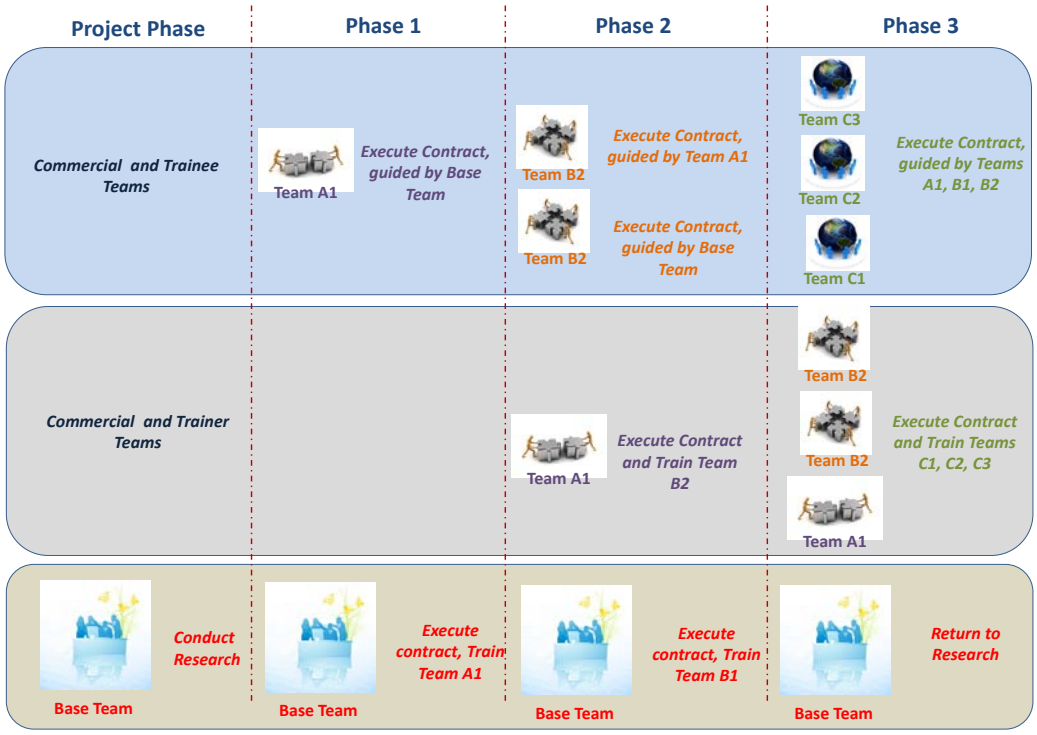


Figure 30: Evolution of commercial teams dealing with the exploitation of the PADGETS solutions

The principal concept towards phasing the exploitation of PADGETS products is based on the concept of the "generation of contracts", as it is described in the following table (Table 8), where the initial exploitation is **heavily** based on the expertise of the R&D team, part of which is dedicated to exploit Results. A total of two teams are envisaged that can be made available within the first 6 months after project end for conducting commercial work.

These teams will include both R&D engineers that participated in PADGETS, as well as new recruitments, so that in the end of the two projects of Phase 1, these teams may split into four or more teams to handle the second generation of projects (Phase 2). Capacity multiplication can be then achieved in order to increase sales at a reasonable organisational and financial stress, as also depicted on the following table.

	Phase 1	Phase 2	Phase 3
Number of Teams doing commercial work	2	4	6
Number of Contracts	2	10[2]	20-22
Cumulative Number of Contracts	2	12	31-33
Average Number of Contracts per team	1	2,5	3,5

Table 8: Generation of Contracts concept for commercialising PADGETS solutions

Based on the above, it is expected that a total of two contracts is the maximum target that can be set for initiating deployment.

This figure of two contracts can be increased at a rate of about 8 contracts per semester, taking into account that initial R&D staff should return to R&D after a year, in order to meet future challenges. An indicative phasing of **supportable** contract generation schema is given in Table 9, where emphasis is given to expand into all markets by the end of the first year of exploitation.

Releases		Number of Contracts per Target Market Segment		
		Primary market: End Users[3]	Secondary market: Software Developers / Integrators	Tertiary market: Consultants / Intermediaries
Phase 1	**Semester 1**	1	0	0
Phase 2	**Semester 2**	2	1	1
	Semester 3	3	2	1
Phase 3	**Semester 4**	4	4	2

[2] IT is expected that as teams become more experienced, they can undertake more contracts per unit of time
[3] Policy Makers, Political organisations, Governmental Bodies in Europe and worldwide, incl. organisations offering services in these areas eg. policy making campaigns etc.

	Semester 5	4	4	4

Table 9: PADGETS contracts – 30 months forecast

8.2 Sources of Revenues

The PADGETS solution is provided on a per license pricing schema. Thus, the price for selling the specific product comes from transaction fees for getting the product, as well as services for consultancy, implementation/customisation, training, and support.

PADGETS can be provided in three different editions that can be applied in any license adopted:

- **Standard Edition (STD)**: the standard edition includes the basic set of PADGETS modules, which can stand as a single tool and serve the objectives of the PADGETS project.
- **Optional Package (OPT)**: The optional package edition involves the individual components, which are not included in the standard edition.

Based on these considerations, the contract generation schema in Table 10 can be instantiated to refer to estimated contracts for the standard PADGETS edition and per market, as in the following table.

	Primary Market	**Secondary Market**	**Tertiary market**	**Total**
Semester 1	1	0	0	**1**
Semester 2	2	1	1	**4**
Semester 3	2	1	1	**4**
Semester 4	2	2	1	**5**
Semester 5	2	2	2	**6**
Total	**9**	**6**	**5**	**20**

Table 10: Number of contracts for STD edition per market – 30 months forecast

For each of PADGET solution editions and based on the target market, a certain pricing policy for holding a license can be determined. As an example we are using again the STD edition, given the fact of a flat rate price irrespectively of the geographical boundaries of the customers, as shown on the following table.

Edition	**Primary Market**	**Secondary Market**	**Tertiary Market**
STD	30.000	25.000	25.000

Table 11: Pricing Policy for selling the PADGETS product license per target market (in €)

These prices are calculated based on Gross Margin estimates of 60% for the primary market, 40% for the secondary market and 50% for the tertiary market. These rates are based on industrial partners' experience and market knowledge.

Services

The revenues from additional services for exploiting the project results will be based on consulting, training, implementation and support services.

- Consulting services. Based on industrial partners' experience, it has been estimated that the daily price for the consultancy service amounts to €1.350.A 6–day Introductory consulting session will allow users to effectively evaluate PADGETS in a workshop setting, while customised consulting will depend on the specific customer requests. A typical contract will involve two consultants for a length of 6 days and will be charged at €16.200.

- Implementation services. Implementation services will include installation, customisation and integration. These are services aimed to the end users. Daily price for implementation services is €1.100.

- Training services. Training courses will be provided through traditional seminars. Based on industrial partners' experience, it has been estimated that the daily price for the training service amounts to €1.100.

- Support services. PADGETS will provide yearly support plans for addressing common and unforeseen incidents. The standard support plan will be charged at €2.000 per year.

Taking into account the previous considerations, we proceed to estimate the contract value for the services for each target market segment as follows:

Contract Services	Contract Value per Target Market Segment		
	Primary Market	Secondary Market	Tertiary Market
Introductory Consulting		8.100	8.100
Customised Consultancy	16.200		
Implementation/Customisation	33.000	7.700	5.500
Standard Training	3.300		
Advanced Training		5.500	11.000
Support	2.000	2.000	2.000
Total	**54.500**	**23.300**	**26.600**

Table 12: Services for PADGETS contracts – values per target market (in €)

These numbers are calculated, based on the following analysis:

1. For the Primary Market

- Customised Consultancy → 12 p-days x €1.350 per day = €16.200
- Standard Training → 3 p-days x €1.100 per day = €3.300
- Support contract in implementation → 30 p-days x €1.100 per day = €33.000

2. For the Secondary Market
   - Introductory Consulting → 6 p-days x €1.350 per day = €8.100
   - Advanced Training → 5 p-days x €1.100 per day = €5.500
   - Support contract in implementation → 7 p-days x €1.100 per day = €7.700
3. For the Tertiary Market
   - Introductory Consulting → 6 p-days x €1.350 per day = €8.100
   - Advanced Training → 10 p-days x €1.100 per day = €11.000
   - Support contract in implementation = 5 p-days x €1.100 per day = €5.500

Based on the previous estimations, sales forecasts are estimated as shown in Table 13. The figures in it are calculated by considering the price per license per contract, the corresponding support services, as well as the number of contracts foreseen per semester and per target market, as they have been indicated in the previous sections.

	Primary Market	Secondary Market	Tertiary Market	Total
Sem-1	84.500 €	0 €	0 €	**84.500 €**
Sem-2	114.500 €	48.300 €	51.600 €	**214.400 €**
Sem-3	114.500 €	48.300 €	51.600 €	**214.400 €**
Sem-4	114.500 €	73.300 €	51.600 €	**239.400 €**
Sem-5	114.500 €	73.300 €	76.600 €	**264.400 €**
Total	**542.500 €**	**243.200 €**	**231.400 €**	**1.017.100 €**

Table 13: Sales Forecast: Revenues for STD edition per target market (in €)

8.2.1 Cost Estimation

In order to calculate Profit and Loss, we consider the relevant costs associated with:

- **Commercialisation / R&D activities**: Relevant expenses are calculated based on the salary costs for the developers supporting the productisation and maintenance of the PADGETS platform and are closely related to the foreseen revenues.
- **Sales activities**: Relevant expenses refer to the salary costs of the Sales person responsible for the commercialization of the PADGETS platform and are again associated with the foreseen revenues.
- **Marketing activities**: Relevant expenses refer to the respective events / campaigns to be organised, which are estimated at €5.000 per event/campaign.
- **Administrative Costs / Overheads**: these are calculated as a percentage of the sales revenues.

In all the above categories of costs, an economy scale factor formula is taken into account, based on past experience from product commercialisation in the media areas and business domains. Thus the relevant estimated total costs for the 30 months period are presented on the following table.

Releases		Commercialisation / R&D Expenses	Sales Expenses	Marketing Expenses	Administrative Costs / Overheads	Total
Phase 1	**Sem-1**	50.000 €	15.000 €	15.000 €	21.125 €	**101.125 €**
Phase 2	**Sem-2**	75.000 €	15.000 €	20.000 €	48.240 €	**158.240 €**
	Sem-3	75.000 €	30.000 €	30.000 €	45.560 €	**180.560 €**
Phase 3	**Sem-4**	90.000 €	30.000 €	35.000 €	47.880 €	**202.880 €**
	Sem-5	90.000 €	30.000 €	45.000 €	49.575 €	**214.575 €**
TOTALS		**380.000 €**	**120.000 €**	**145.000 €**	**212.380 €**	**857.380 €**

Table 14: Cost Estimations (in €)

8.2.2 Profit and Loss

Finally, the foreseen cumulative net operating profit is calculated as presented in Table 15. As it can be seen there, the Total Operating Profit per Semester is calculated, based on the Total Revenues for gross margin minus the Totals Estimated Costs. The net operating profit is cumulatively calculated if the tax break or payments is excluded from the total operating profit. The relevant tax is estimated on a flat rate of 25% for a positive balance of the annual total operating profit.

Thus, on the 30 months basis, which has been considered for the Return of Investment (ROI) commercialisation period of the PADGETS platform, it is estimated that the total net operating profit will be €115.634.

	Phase 1	Phase 2		Phase 3		Total
	Sem-1	Sem-2	Sem-3	Sem-4	Sem-5	
Total Costs	101.125 €	158.240 €	180.560 €	202.880 €	214.575 €	**857.380 €**
Total Revenues	84.500 €	214.400 €	214.400 €	239.400 €	264.400 €	**1.017.100 €**
Total Operating Profit	-16.625 €	56.160 €	33.840 €	36.520 €	49.825 €	**159.720 €**
Cumulative Profit/Loss	-16.625 €	39.535 €	73.375 €	109.895 €	159.720 €	**159.720 €**
Tax Break or payment	0 €	14.040 €	8.460 €	9.130 €	12.456 €	**44.086 €**
Net Operating Profit	**-16.625 €**	**42.120 €**	**25.380 €**	**27.390 €**	**37.369 €**	**115.634 €**
Cumulative Net Operating Profit	**-16.625 €**	**25.495 €**	**50.875 €**	**78.265 €**	**115.634 €**	**115.634 €**

Table 15: Profit and Loss analysis (in €)

9. Partners' individual exploitation plans

University of Aegean	**University of Aegean (Coordinator)**	**Greece**

Aegean University's individual exploitation plan includes the multiple activities based on the academic and research orientation that characterise the institution. At first, training activities will be carried out by itself and other academic institutions on national and pan-European level. This includes, teaching students on the relevant technologies and methods within undergraduate and postgraduate courses (e.g Data Mining, Web programming, Software Engineering, etc.) and demonstrating the PADGETS case in seminars, Summer Schools, etc. PADGETs results can be also exploited in PhD research via the knowledge gained by four PhD students engaged in the PADGETS project that will impact their academic work (Phd dissertations, papers, etc.), along with the practical experience obtained. In addition, the already numerous publication that AEGEAN has delivered on intermediate results will be followed by comprehensive scientific publication on the final project results. University of the Aegean also intends to keep conducting piloting activities with public bodies, exploiting the acquired knowhow in organizing policy campaigns. The objective of this is to establish synergies with the e-governance community and build a CRM of policy makers. Finally, PADGETS results will be expanded through the continuation of the research in the ICT for Governance and Policy Modelling area and liaison activities with relevant projects.

Reply whitehall	**Whitehall Reply srl**	**Italy**

Reply has already started to "market" the potential benefit of the adoption of a "campaign management platform" based on tools like PADGETS. This has been done with current and potential customers of the central and local public administration.

The idea is to extend the "impact area" of the proposition, including the Health Ministry Office, and also the private sector (financial services, for example). This may require a certain amount of rework to adapt the platform to a broader range of customers, but always in the path already defined.

ATC ATHENS TECHNOLOGY CENTER	**Athens Technology Center S.A.**	**Greece**

ATC is an Industrial Partner with the aim to benefit commercially from both the tangible and non-tangible assets that will be obtained in it. ATC is seeing to capitalize on the tools and services built during the project for promoting and integrating the results in its line with its commercial offering. From the perspective of intangible assets, participation in PADGETS has granted ATC the capability to offer consultancy services to the organizations that are interested in adopting such tools and services

related to the WEB 2.0 applications addressing the citizens.

Such business market is the media organizations where ATC is willing to establish a concrete business plan focusing on estimating the costs of expanding its commercial product for the media organisations, namely the NewsAsset® Media Management System, through the potential incorporation and support of breakthrough personalised campaign techniques developed in PADGETS.

Google	**Google**	**United Kingdom**

Google is in principle open to worldwide, non-exclusive, unlimited and royalty-free use, reproduction and distribution of its foreground, subject to case by case consideration. In that respect, Google does not want to claim any ownership to the FOREGROUND of the PADGETS Project.

Google has gained an insight on the outputs and their potential uses and risks developed in the frame of PADGETS. This knowledge can be proven valuable should Google decide to pursue relevant endeavours in the future.

UR Universität Regensburg	**University of Regensburg**	**Germany**

UREG has a strong research focus on privacy and security of information systems. Three PhD students were directly involved in the development of privacy and security specifications.

The results of privacy and security analyses conducted in the PADGETS project will continue to shape UREG's research on privacy in Social Media in general, with the overall plan to continue research activities within a future research project which is currently under development.

Christian Richthammer, Michael Netter, Moritz Riesner, and Günther Pernul. Taxonomy for Social Network Data Types from the Viewpoint of Privacy and User Control. In Accepted for publication in Proc. of the 8th International Conference on Availability, Reliability and Security (ARES '13). IEEE, 2013

Relevant UREG's publications

1. Moritz Riesner, Michael Netter, and Günther Pernul. Analyzing Settings for Social Identity Management on Social Networking Sites: Classification, Current State, and Proposed Developments. Information Security Technical Report, 17(4):56–69, 2013.
2. Netter, M., Riesner, M., Weber, M., Pernul, G., "Privacy Settings in Online Social Networks - Preferences, Perception, and Reality", Accepted for publ. at the 46th Hawaii International Conference on System Sciences (HICSS), 2013
3. Netter, M., Herbst, S., Pernul, G., "Interdisciplinary Impact Analysis of Privacy in Social Networks", In: Altshuler, Y., Elovici, Y., Cremers, A., Aharony, N. Pentland, A. (eds.), Security and Privacy in Social Networks, Springer, 2013

4. Riesner, M., Pernul, G., “Maintaining a Consistent Representation of Self across Multiple Social Networking Sites - A Data-centric Perspective”, In Proc of the ASE/IEEE International Conference on Social Computing and ASE/IEEE International Conference on Privacy, Security, Risk and Trust, Workshop on Security and Privacy in Social Networks (SPSN at SocialCom), IEEE, 2012
5. Netter, M., Hassan, S., Pernul, G., “An Autonomous Social Web Privacy Infrastructure with Context-Aware Access Control“, In Proc. of the 9th International Conference on Trust, Privacy & Security in Digital Business (TrustBus), Springer, 2012
6. Riesner, M., Netter, M., Pernul, G., “An Analysis of Implemented and Desirable Settings for Identity Management on Social Networking Sites“, In Proc. of the 7th International Conference on Availability, Reliability and Security (ARES), IEEE, 2012
7. Riesner, M., Pernul, G., “Provider-Independent Online Social Identity Management - Enhancing Privacy Consistently Across Multiple Social Networking Sites”, In Proc of the 45th Hawaii International Conference on System Sciences (HICSS), IEEE, 2012
8. Netter, M., “Conceptualizing Transparency on Online Social Networks”, In: Tiny Transactions on Computer Science (TinyToCS), 1, 2012
9. Netter, M., Herbst, S., Pernul, G., “Analyzing Privacy in Social Networks - An Interdisciplinary Approach “, In Proc. of the ASE/IEEE International Conference on Social Computing and ASE/IEEE International Conference on Privacy, Security, Risk and Trust, Workshop on Security and Privacy in Social Networks (SPSN at SocialCom), IEEE, 2011
10. Netter, M., Riesner, M., Pernul, G., “Assisted Social Identity Management - Enhancing Privacy in the Social Web“ In Proc. of the 10th International Conference on Wirtschaftsinformatik (WI), 2011

Politecnico di Torino — Italy

POLITO’s participation in the PADGETS project has generated manifold fruits, such as six academic publications, several invited talks, a PhD candidate who has worked in the project, and numerous knowledge assets.

In the near future, POLITO team intends to exploit the results obtained during Padgets projects with a twofold perspective.

On one hand, the team will continue academic research activities in the area of “ICT for Governance” combining under a common roof aspect such as policy modeling, policy simulation, data mining, data visualization, community management, open innovation and crowdsourcing in the public realm.

On the other hand, PADGETS platform will become a stepping stone on which to stand for innovating the policy support activities provided to local and regional policy makers: in fact, Padgets platform, coupled with the lessons learnt from the Piedmontese pilot, will be a propellant for the development

of a new breed of “Policy Making 2.0” initiatives meant to harness the potential that today is still largely untapped.

National Technical University of Athens	Greece

Software engineering on scalable, real-time, social technical solutions is of high interest, with the market to drive the research (i.e. Facebook, Twitter). Nevertheless, there is still a great gap on open, interoperable solutions that will allow an open, federated, social web; all current solutions tend to present different tech-stacks and interfaces that need middle-layers to interoperate. For NTUA the research focused on an open and scalable and extendable solution with interfaces to the social media platforms but with capabilities to operate as a separate platform.

In that direction, the results of the PADGETS project have been used centrally to build a strong research background on real-time architectures with strong social characteristics. Under this context students have run already multiple diploma theses, while three (Iosif Alvertis, Michael Petychakis, Christina Bompa) PhD candidates have gained knowledge and one publication for a W3C conference.

The knowledge gained from PADGETS will be transferred and extended in upcoming projects, to build an independent social platform with more stable and functional interfaces, which will be independent from any technology and will not operate strictly as a middle-ware. A central platform will be built centrally on the lab, to collect research data, get notified for new operations and extend it with new components that will analyse data to identify specific behavioural patterns. In that central technical identity of the lab, more diploma theses, research papers and PhD research will operate, making us an expert on social, technical solutions.

Last but not least, NTUA will consider the PADGETS platform as a dissemination and social media accounts mechanism, as all the other systems are costly, not consistent and not campaigning oriented. It will be used to manage our accounts, for communicating our scientific work and manage communication with students. It will be used also as a mechanism to store and mine knowledge from social media and run studies on discussions run on social media.

Tech4i2	United Kingdom

Tech4i2 has liaised with a number of UK local authorities during the development of PADGETS to obtain details about the requirements of the local authorities in the UK that are more active users of social media. These links are being re-established to highlight that PADGETS is now developed and available for wider adoption.

Through the development of projects in Ireland Tech4i2 is developing links with local authorities and other intermediaries that are developing initiatives that use ICT to help people into work or to start their own businesses. The availability of PADGETS will also be discussed with these groups.

Tech4i2 are regular contributors to the UK local government social media and online collaboration Knowledge Hub online community. The availability of PADGETS will be raised through this online community.

Finally, Tech4i2 is undertaking a number of projects for the European Commission about the better practices in eGovernment. These projects provide details of initiatives and provide workshops and online chat groups to discuss better practices in eGovernment. The objectives and uses of Padgets will be introduced to these groups.

REGIONE PIEMONTE	**Piedmont Region**	**Italy**

Being the pilot campaign pretty successful, PIED is willing to keep on using the Platform after the project lifetime in such a manner to investigate end users opinion in specific fields of collective interest. The aim is to create a "digital agenda" for the Regional Administration that will be used to plan future initiatives, policies that will affect people's lives in terms of quality of the provided services, durability and acceptability of them.

The envisaged exploitation is not a for profit view of the project outcomes but a mere construction of a participative decision making process that will help constructing acceptable models and services that public administration have to deliver.

PIED will keep on using Web 2.0 tools to investigate the services required and the planned actions to implement them. The technical branch of PIED will be assigned with the task of endorsing larger use of the PADGETS platform.

Centre for eGovernance Development	**Centre for eGovernance Development for South East Europe**	**Slovenia**

CeGD as a public private body has could organize international events (conferences) where possible customers mainly from the region of South East Europe and beyond could be present. CeGD has 2500 contacts of relevant information technology businesses and public sectors in the region of South East Europe. CeGD publishes its Newsletter which is delivered to 2500 contact addresses to the relevant public and private institutions in the field of information technology from all around the world, but mainly South East Europe.

Fraunhofer FOKUS	**Fraunhofer-Gesellschaft FOKUS - Research Institute for Open Communication Systems**	**Germany**

As Fraunhofer FOKUS is a research institute for applied science with strong relation to industry partners, the project's results will reinforce the institute's market position in the field of inter service and device collaboration, Social Media and in location based services to further attract new customers. Moreover, the project's results will be used to support ongoing project activities and to acquire new projects with the strong ambition to develop pre-products. The results will also be used either to create spin-offs or to find partners from the industry to commercialize those pre-products.

Based on the quit situated and competitive market, it is hard to create a business value from the commercial and technological point of view.

9.1 Intellectual Property Rights Analysis - Ownership issues

PADGETS solution consists of an ensemble of exploitable assets that all of them are intended to be released as open source.

The benefits of **commercial open source** stem from the creation of an active and engaged user community around the product while at the same time preventing the emergence of competitors from that community. In a nutshell, this community helps the company get to market faster, create a superior product, and sell more easily, all at a lower cost than possible for traditional competitors. In exchange, the company offers a professionally developed product of compelling value to the community that this community is free to use under an open source license. Of course, there are always more implicit benefits. Making the source code of a product publicly available without any constraints may help an organization build up a social profile that may boost the organization's visibility and comprise a reference dissemination point.

Open source software relies on the concept of content licensing. A license defines the rights and obligations that a licensor grants to a licensee. Open source licenses grant licensees the right to copy, modify and redistribute source code (or content). These licenses may also impose obligations (e.g., modifications to the code that are distributed must be made available in source code form, an author attribution must be placed in a program/ documentation using that open source, etc.).

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In the following table there is a list with the developed PADGETS software components and their licences according to the responsible partner intentions:

Component	Partner	License
PADGETS Dashboard	Fraunhofer	Apache License, Version 2.0
PADGETS Application Server	Fraunhofer	Apache License, Version 2.0
PADGETS Visualization Engine	Fraunhofer	Apache License, Version 2.0
PADGETS Social Media Connector	Fraunhofer	Apache License, Version 2.0
PADGETS Web Application Prototype	Whitehal	Open Source license
PADGETS Mobile Application for Policy Makers (JQUERY)	Whitehall	Open Source license
PADGETS Mobile Application for Citizens (JQUERY)	Whitehall	Open Source license
PADGETS XMPP interface for synchronization processes	NTUA	MIT license
PADGETS DSC (Decision Support Component)	POLITO	Open Source license
PADGETS Data Mining Engine	University of the Aegean	Open Source license
PADGETS Android App for Policy Makers	ATC	GPL v3
PADGETS Android App for Citizens	ATC	GPL v3

Table 16: PADGETS components and Open Source Licenses

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