D9.2.2

Communication and Dissemination Activities Report Y2

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WP9 Innovation Management, Dissemination and Exploitation

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Context

WP9	Innovation Management, Dissemination and Exploitation
Task 9.2	Communication and Dissemination of Project Results
Dependencies	This document is a follow-up to the first deliverable of its series, D9.2.1, which outlined the Year 1 dissemination planning and activity.

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0.1	08/08/2012	Oleksandr Lobunets	Initial document structure created.
0.2	15/08/2012	Eleni Kamateri	Consolidation of events and papers
0.3	20/08/2012	James Ahtes	Stakeholder section
0.4	21/08/2012	Eleni Kamateri	Dissemination definition for scientific assets
0.5	10/09/2012	James Ahtes	Year 3 activity planning based on agreements with event organizers
0.6	12/09/2012	James Ahtes Oleksandr Lobunets	Online presence Added showcase dissemination
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1.0	15/10/2012	James Ahtes Oleksandr Lobunets	Reviewer comments addressed, deliverable finalized

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Abbreviations

CAMP	Cloud Application Management for Platforms (proposed standard by OASIS)
CloudCom	Cloud Conference in Athens, 2011, host to Cloud4SOA's workshop
IaaS	Infrastructure as a Service
OASIS	Organization for the Advancement of Structured Information Standards
OCCI	Open Cloud Computing Interface (standard by OGF)
OGF	Open Grid Forum (standards group)
OSS	Open Source Software
PaaS	Platform as a service
SaaS	Software as a Service
SME	Small medium enterprise

Executive Summary

Cloud4SOA begins its third and final year with a robust dissemination campaign centered on its early release Beta program.

It's an important milestone of the project, and the dissemination work in Year 1 and Year 2 has generated the analysis, stakeholder interaction and campaign planning to guide Cloud4SOA in this important transition from project interest and discussion-based dissemination to a marketing-oriented campaign.

This Year 3 campaign aims to:

- generate a critical mass of stakeholder interest towards the output, value proposition and impact of Cloud4SOA's assets
- initiate the Cloud4SOA Beta program by involving its stakeholders and facilitating the their feedback towards the final development cycle of the project
- catalyze community crowdsourcing involvement to support Cloud4SOA's OSS adoption and sustainability

To carry this out in tandem with the Beta program, Cloud4SOA will continue and increase its stakeholder interaction through a coordinated campaign of face-to-face venues, online presence, published papers and supporting communication material.

1. Introduction

This report covers the dissemination campaign that supports Cloud4SOA. It provides a timely snapshot between Year 2 and 3 of the project during an important approaching milestone: the deployment of the Cloud4SOA Beta program and OSS release on GitHub. In terms of dissemination, Cloud4SOA is at its most tangible point of clarity in the workplan.

As continuation of the D9.2.X series, this deliverable does not try and replicate an activity report (available in the Period Activity Report), but instead covers the dissemination campaign strategy across the workplan, in its entirety. This report is therefore organized in the following manner:

Section 2 presents this phase in the overall Cloud4SOA workplan, as well as the important shift in dissemination objectives and strategy to support the transition and peak of activity.

Section 3 then briefly recaps the project's stakeholders, confirming the audience we're targeting, the messaging and the context of their invested interest.

Section 4 summarizes what assets from the project are being leveraged in dissemination. While the basic overview, technical aspects and value proposition make up much of our dissemination outreach, these assets provide unique and more tangible output to our stakeholders.

Finally, Section 5 covers that campaign itself, where hosted workshops, participated stakeholder events, online presence, published papers and dissemination material is both summarized (Year 2) and previewed (Year 3).

2. Dissemination Campaign Strategy and Objectives

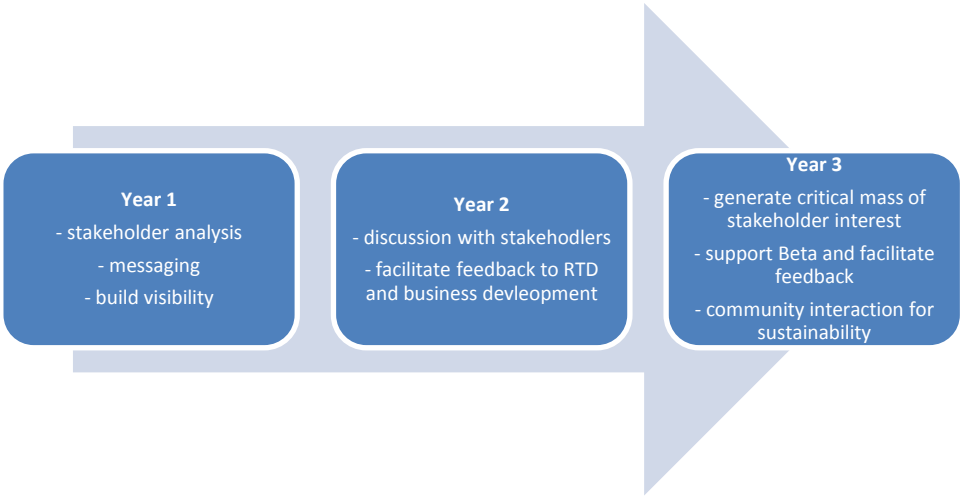

Figure 1: The Cloud4SOA dissemination campaign is adapted to the project's needed interaction with its stakeholders at each phase (year) of the project

Cloud4SOA's dissemination campaign is carefully timed to the overall project workplan.

In Year 1, the campaign preparation reflected the project scoping. In close conjunction with the business development task, the PaaS provider/developer segment was analyzed in terms of communication channels interests and messaging, an analysis was done of the foreseen assets to disseminate, and finally an initial dissemination plan was created to catalyze outreach and maintain visibility as Cloud4SOA matured.

Year 2 focused on the discussion. With the stakeholders identified and the clearer scoping of the areas of Cloud interoperability and portability that Cloud4SOA tackles on the platform layer, the project was now reaching out to discuss these topics as large. Cloud4SOA generated this dialog as a validation tool in its first cycles of development, opening the communication channels to track the evolving priorities of Cloud application developers, PaaS providers and the multitude of Cloud-related interoperability research in parallel.

At the start of Year 3, the project is now a critical and opportune stage of transition with the release of its Beta program.

The web-accessed Beta is a fully integrated implementation of the Cloud4SOA System, demonstrating in a tangible manner the capabilities and value proposition to its stakeholders, as well as expanding its evaluation ahead of the final development cycle.

In parallel, the business development side of the project proposed an OSS-based crowdsourcing strategy to capture the value potential and sustainability of Cloud4SOA, including the availability of its components on a public forge.

That combination has marked a transition between general discussion and visibility to a marketing-oriented campaign that has distinct objectives for the project's final year:

- generate a critical mass of stakeholder interest towards the output, value proposition and impact of Cloud4SOA's assets
- initiate the Cloud4SOA Beta program by involving its stakeholders and facilitating the their feedback towards the final development cycle of the project
- catalyze community crowdsourcing involvement to support Cloud4SOA's OSS adoption and sustainability
    - facilitating its OSS community involvement to keep the Cloud4SOA components and functionality relevant in an evolving market;
    - educating developers and providers on Platform Adapter creation & maintenance to expand Cloud4SOA's ecosystem of PaaS offerings;
    - supporting the contribution and collection of platform semantic information to strengthen the value of Cloud4SOA's application-to-platform matchmaking

3. Stakeholder Recap

In D9.2.1, the predecessor to this report in the first year, Cloud4SOA identified the primary stakeholders of the project, together with the value proposition covered in the parallel series D9.3.X (Market Analysis, IPR Model and Exploitation Plans).

The following is a recap to set the context for the rest of the report, where each stakeholder is detailed in terms of the context of their invested interest, and the resulting messaging that's needed.

3.1. Cloud-based Application Developers

Cloud4SOA's primary stakeholder is the Cloud-based application developer. Whether it is a large ISV providing a SaaS offering on top of a PaaS, or an enterprise using a local PaaS for internal development, our messaging to developers remains consistent across use cases in order to relay the versatility of Cloud4SOA in different development settings (as developers themselves change settings, as well).

This messaging focuses on Cloud4SOA's 4 primary capabilities that provide value to the developer:

- **Matchmaking** between a Cloud application and a ranking of platforms to best fit its needs.
- **Management** of applications deployed in several PaaS providers, as well as independent SLA interaction.
- **Monitoring** of applications deployed on multiple platforms, using universal metrics.
- **Migration** of an already-deployed application from a PaaS offering to a competing one (alleviating vendor lock-in).

Just as seen through the project's exploitation development, the shifting of focus from Cloud4SOA being a provider-oriented to developer-oriented offering has taken place in dissemination.

The project's Year 2 incorporated this messaging in its participation at developer-oriented events. However, it's with the arrival of the Beta program (Section 4.1) that will make the larger impact on developers, providing something tangible for feedback and a first step towards adoption.

Year 3's dissemination to developers revolves around this Beta program, as well as the OSS direction taken by the project. By providing Cloud4SOA on a public forge, much of the messaging will not only be towards the use of Cloud4SOA, but also contribution towards improving it. Whether it be creating a new Cloud4SOA Platform Adapter or adding a new monitoring metric to the Cloud4SOA System's components, Cloud4SOA is now a community crowdsourced tool to build upon. Immediate dissemination actions to run in parallel to the Beta program will be a large online presence in developer forums, as well as OSS and industry-focused events already planned, both of which are covered in Section 5.

3.2. PaaS Providers

PaaS providers were originally envisioned as the primary stakeholder of Cloud4SOA; particularly the rising of SME platform vendors that could benefit from a more open Cloud provision market.

Although the primary value of Cloud4SOA has shifted in the first half of the workplan towards developers (from the market analysis and business development of WP9), PaaS providers still have an important role to play and benefit from participation within the Cloud4SOA ecosystem.

Cloud4SOA has successfully limited its dependencies on PaaS providers for the developer-oriented value and capabilities. However, there are two ways in particular a PaaS provider can enroll voluntarily into the Cloud4SOA System portal and improve the overall experience:

a) entering the portal and providing semantic information; therefore strengthening the reliability of matchmaking

b) creating/maintaining their own adapter based on updates to their open API

Again, neither is a requirement for Cloud4SOA to function correctly; a developer could provide basic known semantic information of the provider, as well as develop and maintain an adapter just as the project consortium created several without any formal interaction with the currently supported PaaS offerings. But a "certificated" matchmaking could provide more reliable results in a search query of additional metrics, and no party is more capable of maintaining an official Platform Adapter better than the provider itself.

Cloud4SOA's dissemination campaign shows how this collaboration can ultimately benefit their PaaS business:

- **Additional Sales Channel**: allow developers to reach your PaaS offering with greater ease, without effecting your business model in any way
- **Added-Value Capabilities**: use Cloud4SOA's valued matchmaking, management, monitoring and migration capabilities as part of your own competitive advantage
- **Interoperability/Portability**: lower the adoption barrier of your platform and create potential collaboration opportunities with fellow PaaS offerings

Joining the Cloud4SOA ecosystem and adopting the Cloud4SOA solution comes with minimum effort on their side and does not require changes in their platforms nor business model.

While Year 2 brought the provider viewpoint of interoperability into its core dissemination activities (e.g. Cloud4SOA workshop at CloudCom2011), Year 3 will now leverage its new Beta program to provide a tangible focus point for dissemination activities in F2F venues and online publications. This has been incorporated into the immediate dissemination actions (Section 5), including the large vendor/developer tradeshow CloudExpo Europe (London, January 2013) where Cloud4SOA has a dedicated exhibition booth for hand-on with the Beta program.

3.3. Standards Bodies

The main message that Cloud4SOA conveys to standards bodies is that the project has a clear focus on open standards, where key assets can be contributed to various working groups of the Cloud standards development community. The parallel D9.3.3 deliverable highlights this roadmap, where the outreach has now focused on two targets in particular: the CAMP (OASIS) and OCCI (OGF) groups. One venue in particular, Cloudscape V (Brussels, February 2013), will bring all the major Cloud standards bodies together, and Cloud4SOA has confirmed a sponsor and active role in the Program Committee in order to position itself with this community.

3.4. Research Community

Cloud4SOA is indeed a research project, and maintains close contact with its FP7 colleagues to learn from project findings, extend further research conducted in the project and combine it with different efforts and research streams in order to deliver mature solutions that will address real-world problems.

The consortium has actively participated in several research-oriented conferences, carried out P2P discussion and collaboration with parallel projects (parallel report D9.4.3 Collaboration Plans and Updates), presented several scientific papers and published supporting dissemination to summarize its progress. The details of these activities can be found in Section 5.

One highlight of the project's Year 2 in particular was Cloud4SOA's hosted workshop at CloudCom2011, where it brought several Cloud-related FP7 projects and IaaS/PaaS providers under one roof for a realistic discussion on interoperability topics, as well as networking between the commercial and research counterparts.

For Year 3, in addition to an increase dissemination activity similar to the above, Cloud4SOA will also invite their FP7 colleagues to its early-release Beta and OSS forge availability. These researchers have a strong connection to developers in the commercial domain, and their use, feedback and support will strengthen Cloud4SOA.

4. Project Assets for Dissemination

To address the above stakeholders, Cloud4SOA is involved in a wide array of dissemination activity towards its stakeholders, covered in detail in Section 5.

However, Cloud4SOA strengthens this campaign by making available several assets and outcomes of its R&D work, summarized below not in terms of a results analysis, but of the marketing "package" that will deliver these outcomes to stakeholders.

4.1. Cloud4SOA Beta

In the autumn of 2012, Cloud4SOA releases a Beta of its integrated system. This hosted pre-release is an important milestone to the project that allows its stakeholders to have a hands-on experience with Cloud4SOA's value-added capabilities to the PaaS experience.

An early public release was not a milestone in the original workplan, but the increasing need to have a tangible anchor for exploitation and dissemination goals led to its formal addition as a centralized tool around which Cloud4SOA could market its value and facilitate feedback from its stakeholders, as well as pursue its chosen OSS crowdsourcing path for adoption. Its target includes developers, PaaS providers and researchers, and will create a group of external interaction that was originally envisioned for the Special Interest Group, of which this more valuable activity has replaced.

The Beta uses the web interface of WP3 to highlight its four primary capabilities (matchmaking, management, monitoring and migration) and will be the staple for Year 3's dissemination campaign, as well acting as a feedback mechanism for the project's final cycle of development.

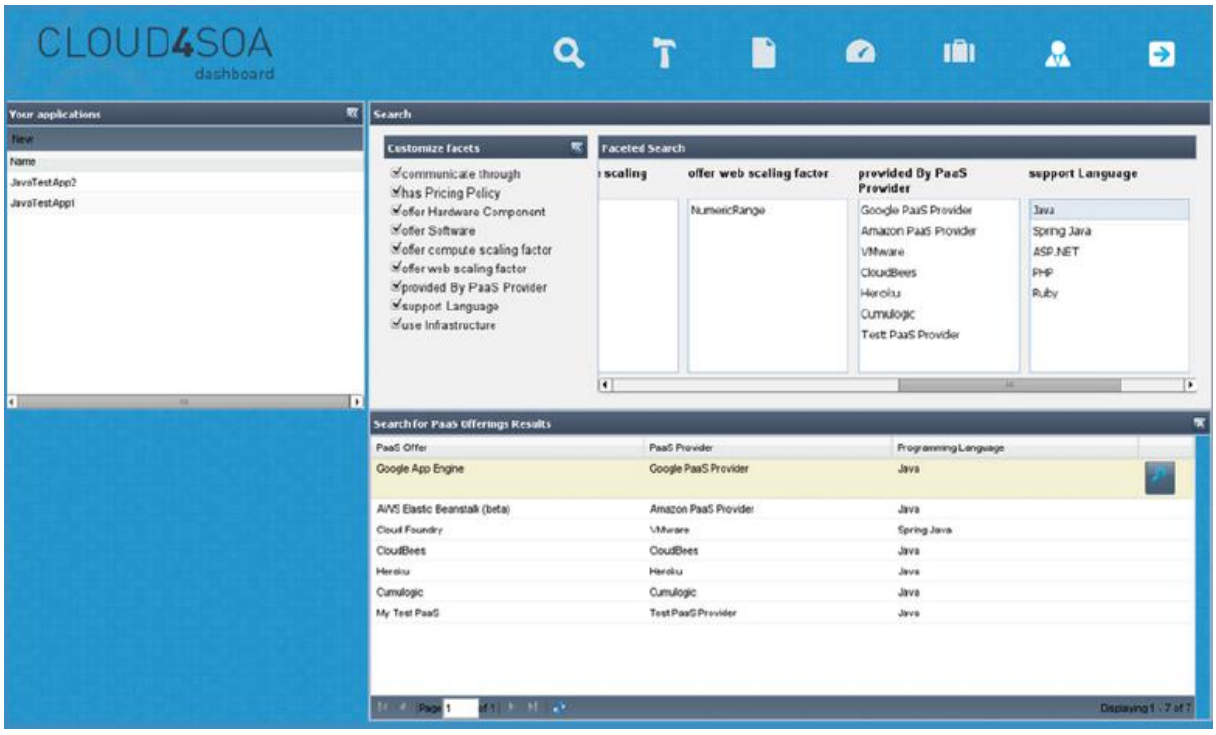

Figure 2: Cloud4SOA Beta program, accessible via a web interface

4.2. Cloud4SOA Open-Source on GitHub Forge

In parallel to the Cloud4SOA Beta, which represents an early release implemented for public trial, the consortium will follow its OSS strategy by migrating the project to an OSS forge (see D9.3.3 for additional details).

In terms of dissemination, the duality of the Cloud4SOA Beta and OSS access at this stage of the campaign will reinforce the message that Cloud4SOA is an open, transparent and customizable solution. This furthers the notion of "flexibility" and "sustainability" for the developer, as it can be adapted and updated to their particular needs, such as new monitoring metrics, changes in UI or added management functionality to increase support for the rapidly evolving PaaS market segment.

4.3. Platform Adaptor and Creation Kit

The Platform Adapter is the bridge that enables Cloud4SOA's capabilities towards developers by successfully interacting with the PaaS offering. While Cloud4SOA will host its existing adapters via its OSS strategy, a key success factor for adoption and crowdsourcing is to relay the ability for its stakeholders to create new adapters, as well as to successfully maintain adapters when a PaaS offering's API is modified.

A generic Platform Adapter skeleton and guide will be created in January 2012 that has all the information needed in order to create a new adapter for a PaaS with a compatible API.

By using the Platform Adapter Creation Kit developers, PaaS providers and researchers can increase the value and platform ecosystem of Cloud4SOA.

While the availability will be web-hosted, the dissemination will be done through marketing material, F2F dialog and online developer forums, and will be released for Cloud4SOA's busy January-March 2012 stakeholder event calendar.

Figure 3: Platform Adapters created by Cloud4SOA

4.4. Showcases

Cloud4SOA benefits from having three industry showcases integrated directly within the project. With the showcases clearly defined and evaluation well under way, each one will be used as a testimonial of validation for the Cloud4SOA System, presenting a convincing argument and marketing tool for adoption and support. This will be published in the business-related dissemination material in preparation for the Cloud Expo Europe (January 2013), and follow-up communication revolving around the Beta.

- multimedia service delivery with Portugal Telecom
- network monitoring with RomTelecom,
- business collaboration with Fraunhofer FIT's BSCW platform.

4.5. Research Assets

While the above assets are directly part of the Cloud4SOA System dissemination and sustainability, the following are more oriented towards generic scientific results and provide a second line of assets towards academic and market-oriented researchers alike.

4.5.1. Reference Architecture

The Cloud4SOA Reference Architecture is a generic model and guidelines for the development of a semantically interoperable Cloud platform. The target groups and impact for dissemination of this public deliverable are varied:

- **Cloud-based application developers** will be able to use PaaS offerings that have adopted Cloud4SOA Reference Architecture, thus preventing the lock-in to specific PaaS by enabling the migration of applications between PaaS providers.
- **PaaS providers** can adopt the Cloud4SOA Reference Architecture to enable interoperability with other PaaS providers thus extending their potential users/customers.
- **Standards development community** can benefit from the Cloud4SOA Reference Architecture since it capitalizes on open standards and models. Specifically, it can be used as input for discussions on standardized reference architectures for Cloud computing.
- **Research community** can reuse and extend Cloud4SOA Reference Architecture focusing on resolving semantic interoperability and portability issues in Cloud computing.

4.5.2. Semantic Model

The Cloud4SOA project provides the mechanisms to resolve semantic interoperability issues among different Cloud platforms, achieved by means of the Cloud4SOA Semantic Model.

By disseminating the Semantic Model through a dedicated paper, it will increase awareness and promote it to the variety of stakeholders.

- **Cloud-based application developers** (end-users) can use the Cloud4SOA semantic model for describing their application's needs thus enabling the identification of the most appropriate PaaS offerings (even if expressed with different terms) where their applications can be deployed/migrated through the Cloud4SOA system.
- **PaaS providers** will become aware of the potential of using Cloud4SOA Semantic Model as a common language for describing their PaaS platforms, thus taking advantage of Cloud4SOA's added benefits i.e. the extension of their potential users/customers.
- **Standards development community** will become aware of Cloud4SOA Semantic Model that is able to describe PaaS offerings and Cloud applications. The model can be used as an input or feedback to discussions on standardization activities related to Cloud's PaaS level.
- **Research community** (Semantic Web, Cloud computing, etc.) can reuse and extend Cloud4SOA semantic model to fulfill the needs of other research efforts in the field. Moreover, The Cloud4SOA semantic model can be further extended to cover other Cloud layers as well and can be validated in the context of other research initiatives.

5. Dissemination Activities

To reach its dissemination objectives Cloud4SOA's stakeholders, the project uses a wide array of communication activities, including F2F venues, online presence and publishable content.

As introduced in the previous Section 2 "Dissemination Campaign Strategy and Objectives", the following covers both the activity that was done in Year 2, as well as establishes the dissemination campaign actions for Year 3.

5.1. Events and Community Discussion

Face-to-face interaction has provided Cloud4SOA a direct line of interest and feedback from its stakeholders. In Year 2, this effort was focused on the discussion of such interoperability and portability challenges from both a research and industry point-of-view, acting as feedback towards the project's cyclical RTD workplan and business development.

With this in mind, Cloud4SOA hosted a workshop at CloudCom2011 (Athens, November 2011), as well as participated in a wide range of stakeholder conferences and workshops.

In Year 3, to coincide with the release of its Beta program and OSS forge availability, the face-to-face goals are now much more marketing-oriented, shifting from a discussion of the challenges faced, to the solution that Cloud4SOA now provides.

5.1.1. Cloud4SOA workshop at CloudCom2011

Organized by the Cloud4SOA project, the "**Market Implementation of Cloud Interoperability and Portability Research in IaaS and PaaS**" workshop at the IEEE CloudCom 2011 conference highlighted these topics in a comparative discussion between researchers and commercial providers.

The workshop examined several of today's interoperability and portability research efforts in the infrastructure and platform layers of the Cloud stack, and analyzed the feasibility of their implementation into market offerings. This balance between research and practicality brought together market perspectives from the IaaS and PaaS arena with commercial providers interacting with several European FP7 projects such as Mosaic, Optimis, Contrail, gSLM, e-Fiscal and Cloud4SOA.

A Call for Papers was organized in order to bring in the leading scientific component into the discussion, as well as to integrate the workshop into the full conference proceedings. Likewise, key industry contacts were invited on behalf of the project to represent the IaaS and PaaS perspectives, along with client-side experience to discuss user requests and priorities (e.g. application developers, enterprise use of outsourced infrastructure, etc.).

A summary that was published for post-workshop dissemination can be found below, and includes the invited list of industry and research panelists, as well as the day's highlighted discussion points.

This workshop discussion and themes provided a dialog that would continue in the Cloud4SOA participation of events and conferences throughout its 2nd year, and helped connect the project's evolution to that of its stakeholders; resulting in a healthy real-time input and validation to the Cloud4SOA's development priorities and exploitation direction.

MARKET IMPLEMENTATION OF CLOUD INTEROPERABILITY AND PORTABILITY RESEARCH IN IAAS AND PAAS

CLOUDCOM2011 CONFERENCE WORKSHOP - WEDNESDAY, NOVEMBER 30TH, 2011

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The workshop examined several of today's interoperability and portability research efforts in the infrastructure and platform layers of the Cloud stack, and analyzed the feasibility of their implementation into market offerings. This balance between research and practicality brought together market perspectives from the IaaS and PaaS arena with commercial providers interacting with several European FP7 projects such as Mosaic, Optimis, Contrail, gSLM, e-Fiscal and Cloud4SOA.

Interoperability and portability are increasingly relevant needs in Cloud computing as it continues its rapid adoption through infrastructure and platform offerings. For the user, these capabilities are key to counteract the risk of vendor lock-in, a primary barrier for user uptake. On the provider side, complex scenarios in the IaaS layer such as Cloud brokerage, Cloud bursting, hybrid Clouds and multi-Cloud federation require provider-to-provider collaboration largely based on the interoperability of various infrastructures. In addition, in the "year of the PaaS" (Gartner, March 2011), portability is of great importance, as applications developed in one platform's ecosystem quickly become over-dependent on that particular platform's future.

A workshop panel brought out several observations across interoperability-related priorities and outlook. Flip the page for a look!

Click on the project to learn more!

Portability for the customer:
For the majority of the customer profiles of Cloud computing, portability is a growing priority: the ability to port applications and data from Cloud to Cloud. This is particularly important in today's quickly evolving age of Cloud computing offerings, where potential customers are concerned of investing in a particular infrastructure or platform and hampering their flexibility in a developing IT market segment: "vendor lock-in".

Portability for the provider:
Conventional wisdom reminds us that portability is not seen as the best business interest of many Cloud providers, particularly the current leaders. It's a two-way door, where providers would gain and lose customers through migration of their applications, services and data. However, Cloud solution portfolios in general are entering a phase where they're not just responding to the original well-known market drivers (CapEx to OpEx, pay-per-use models, self-service, effects of economy, etc.), but are becoming mature and numerous enough where the current barriers being targeted by providers to be solved as potential competitive advantages. The lack of portability is one such barrier that customers want resolved before investing significantly in a platform, and as such, PaaS offerings are beginning to emerge with "avoid lock-in" marketing strategies with various techniques.

Panelists

Jorge Ejarque
Barcelona Supercomputing

Matti Heikkurinen
Emergence-Tech

Jordan Janeczko
Atos

Nikos Loutas
CERTH

Guillaume Pierre
Vrije Universiteit Amsterdam

Massimilano Rak
Seconda Univ degli Studi di Napoli

Philipp Strube
cloudControl

Interoperability timeline in the market:
Interoperability is not so far away on the IaaS layer, helping to set up complex scenarios such as Cloud bursting, brokerage, federation, etc. In comparison, such advances the PaaS layer are still very far off, with current uncertainty on standards, technology choices on the platform and their implications on what's delivered on top. "Component-ization" and re-use of Cloud architectures can help prepare more efficiently for many interoperability-required use cases.

Developer flexibility:
PaaS's relationship with portability can be seen in parallel markets. For example, through the well-publicized mobile phone market: portability layers and programming abstractions make it easier for application developers to diversify their deployment and success between competing platforms while minimizing the resources needed in parallel development.

5.1.2. External F2F Venues in Project's Year 2

Table 1: Overview of face-to-face venues during Cloud4SOA's Year 2

Event	Date	Location	Stakeholders & Venue Context	Cloud4SOA Role
PHP Unconference	Sep 10-Sep 11, 2011	Hamburg, Gernany	**Developers**: PHP Unconference to meet core PHP enthusiasts and open source developers as well as PHP.net members.	PaaS and Cloud4SOA were discussed with participants in conference sessions, speaking of the challenges faced by developers in the Cloud.
IoS Collaboration Day	Sept 28- Sept 29, 2011	Brussels, Belgium	**Researchers:** Collaboration event that encompasses the various EU research projects involved in software & services, including Cloud computing.	Collaboration and discussion between common topics in Call5 Cloud-related projects, including semantics, SLAs and exploitation methodology.
eChallenges 2011	Oct 26- Oct 28 Oct, 2011	Florence, Italy	**Researchers:** ICT research focused event.	Cloud4SOA presented an accepted paper on the governance layer architecture. Moreover, it was discussed the diverse approaches to SLA management.
SPRERS 2nd Training on Software Services	Nov 14, 2011	Timisoara, Romania	**Researchers:** Workshop of various EU research demos focused on software and services.	Cloud4SOA presented the current internal demo, and focused the discussion on its development in SLA management.
Dutch PHP Conference	Nov 17- Nov 18, 2011	Amseterdam, Netherlands	**Developers, Providers:** Developer conference driven strongly by one of the core PHP frameworks (Symfony).	Ideas on how to open source and manage open sourcing was exchanged. The pro's and con's of different PHP PaaS (PHP Fog, now APPFog, Orchestra and cloudControl) were discussed and their different sets of functionalities compared.

Event	Date	Location	Stakeholders & Venue Context	Cloud4SOA Role
3rd IEEE CloudCom 2011 Workshop on Market Implementation of Cloud Interoperability and Portability Research in IaaS and PaaS	Nov 29 – Dec 1, 2011	Athens, Greece	**Researchers and Providers:** A workshop on interoperability and portability research efforts The larger conferences was an international venue with academic and scientific focus on Cloud computing technology and science, with invited industry contacts.	Hosted 1st Cloud4SOA workshop at CloudCom2011 conference, bringing Cloud researchers and industry contacts together to discuss the alignment of research priorities in interoperability and portability with those of industry. Moreover, Cloud4SOA presented a scientific paper on a PaaS semantic interoperability framework that resolves semantic interoperability conflicts raised during the deployment or the migration of applications.
International PHP Conference	Dec 10-Dec 12, 2011	Rheingoldhalle Mainz, Germany	**Developers:** The international PHP conference is one of the core happenings in the PHP community with companies and participants from all major PHP stakeholders (e.g. ZEND, Mayflower, etc.).	Cloud4SOA was presented on cloudControl's stand in form of flyers and also discussed with participants. The value perspective of a unified set of functionalities was refined.
Cloudscape IV	Feb 23- Feb 24, 2012	Brussels, Belgium	**Providers, Standards, Researchers:** Cloudscape IV brought together Cloud vendors, researchers, standards development community and policy makers for a multitude of Cloud-related topics for Europe.	Participated in the discussion of Cloud standards and their progression in meeting requirements for industry, scientific research and the public sector. Also discussed was the value of PaaS in Europe, where value is being created above the underlying infrastructure.

Event	Date	Location	Stakeholders & Venue Context	Cloud4SOA Role
CeBIT	Mar 9, 2012	Hanover, Germany	**Providers:** CEBIT is Europe's largest technology conference taking part in Hannover, Germany. It covers Hard and Software topics.	Observations were made on the presence of other PaaS providers presenting their offering (e.g. Microsoft Azure, Salesforce) and their focus in marketing it.
SEQUOIA project workshop	Mar 13, 2012	Brussels, Belgium	**Researchers**: SEQUOIA project workshop was focused on exploitation challenges in the EU research.	Cloud4SOA contributed its experience stakeholder analysis in the PaaS segment and business scenario formation
Cloud Interoperability FIA Session	May 10, 2012	Aalborg, Denmark	**ICT Industry and Researchers:** Workshop evaluated the state of uptake of existing interoperability solutions, exposed some of the latest innovations in the field, and identified several gaps in research and developments that should be filled in the future.	The session covered a wide arena of cloud interoperability challenges: at both IaaS and PaaS layers, network level, integration issues pertaining to the Internet of Thing, and collaboration challenges between standards bodies. Cloud4SOA represented the PaaS segment and the portability challenges that the project seeks to alleviate.
Euruko	Jun 1-Jun 2, 2012	Amsterdam, Netherlands	**Developers:** Euruko is Europe's largest developer conference for Ruby on Rails.	The Ruby on Rails community is the most active community in the PaaS segment as RoR shows the widest adoption. This is based on the strong success of Heroku which mainly focused on RoR in its early days. We intensely discussed the pros of a unified way to deploy to different PaaS – i.e. Heroku and cloudControl – and also multiregion functionalities and the role of Cloud4SOA.

5.1.3. Year 3 Campaign Venues

The project's significant Year 3 dissemination campaign has already several confirmed stakeholder events to showcase the Cloud4SOA Beta, elicit stakeholder feedback for the third development cycle and help support the project's OSS adoption.

Cloud Expo Europe (London, 29-30 January 2013)

Cloud Expo Europe provides a conference of close to 5000 Cloud-related industry contacts. Already identified as the ideal venue for interacting with both Cloud developers and providers, Cloud4SOA has already confirmed an exhibition booth to showcase its Beta.

FOSDEM (Brussels, 2-3 February 2013)

Cloud4SOA's OSS strategy requires a strong interaction with developer communities. As Europe's leading OSS conference of over 5000 participants, FOSDEM will be an ideal venue for gaining support with the project's newly migrated GitHub forge availability and Platform Adapter Creation Kit.

Cloudscape V (Brussels, 27-28 February 2013)

Cloud4SOA has a standards-related influence for its impact, as well, detailed in D9.3.3. Cloudscape V provides the only venue in Europe where all major Cloud-related standards bodies converge under one roof. Cloud4SOA is a supporting project of the event, with a booth and dissemination package being prepared to showcase its Beta with several standards bodies, mostly notably the CAMP (OASIS) and OCCI (OGF) groups.

5.2. Online Presence

5.2.1. Project Website

Cloud4SOA's website (www.cloud4soa.eu) has been host to the latest updated of the project, as well as a one-stop online footprint of the project's overview, news, results and dissemination material.

The transition between the project's Year 2 and 3 is most notable with Cloud4SOA's pre-release Beta and supporting material. As such, the project website is being expanded with revised content from the project, shifting more attention to the project results and value proposition of Cloud4SOA, as well as providing a feedback mechanism for supporting the Beta.

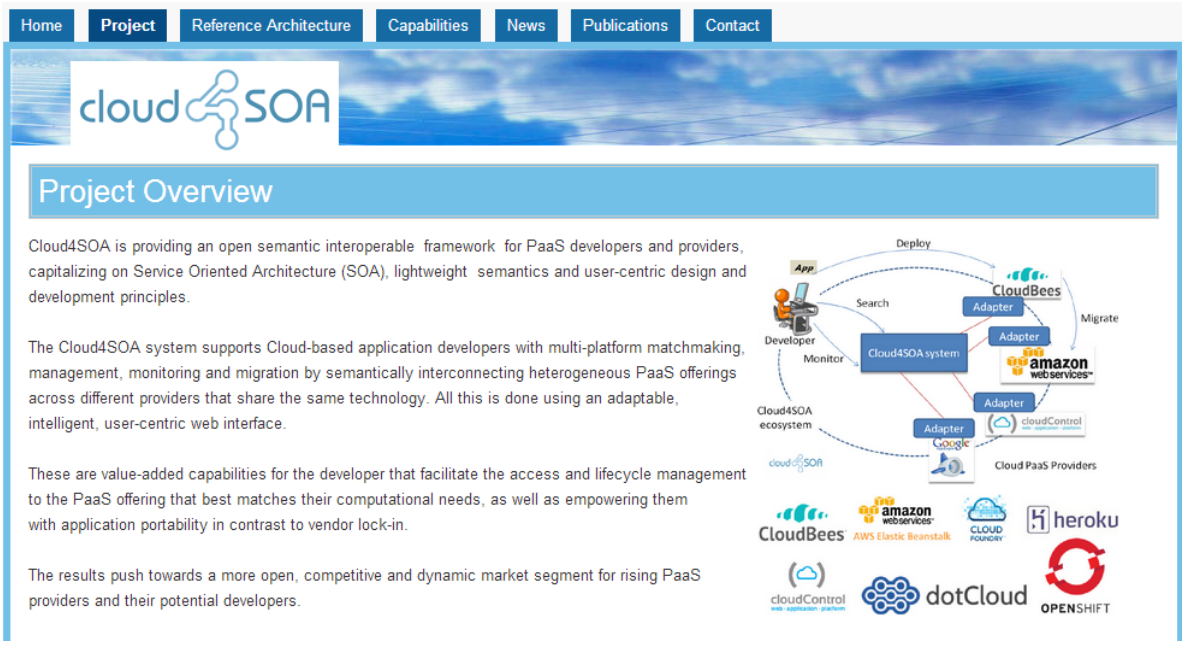


Figure 4: a project overview available on the website explains how Cloud4SOA works

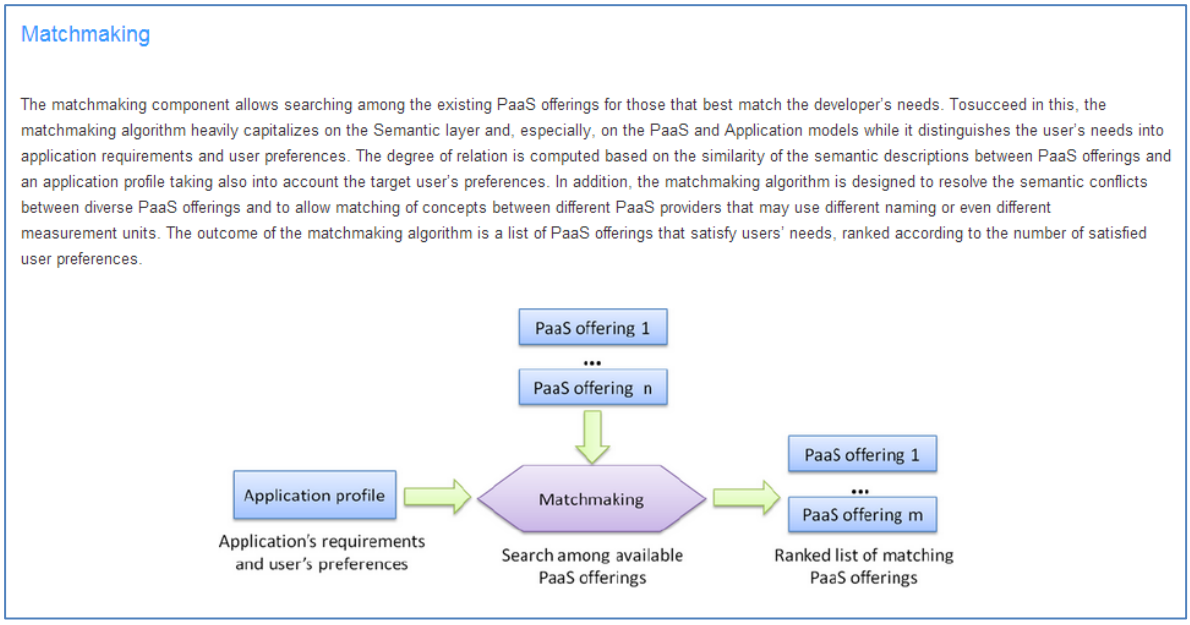
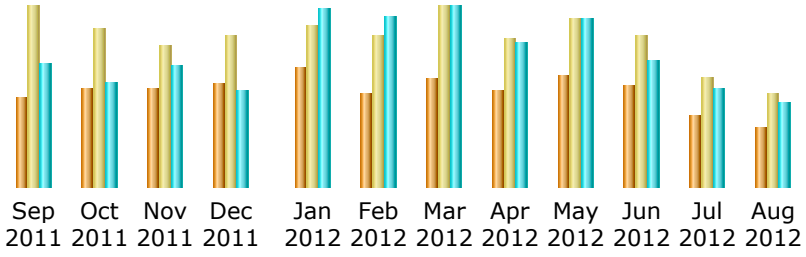


Figure 5: Cloud4SOA's capabilities are showcased on the website

The website maintained a consistent rate of several hundred unique visitors each month. However, the website has to improve the duration of visits, where many are staying only for a brief overview, lacking more tangible interaction with the project. With the release of our Beta, supporting content and feedback mechanism, this interaction will raise significantly.



Month	Unique visitors	Number of visits	Hits
Sep 2011	391	796	19627
Oct 2011	428	694	16895
Nov 2011	425	624	19288
Dec 2011	453	671	15147
Jan 2012	432	587	13115
Feb 2012	337	551	12567
Mar 2012	389	653	13412
Apr 2012	344	533	10741
May 2012	405	608	12434
Jun 2012	365	548	9311
Jul 2012	256	395	7165
Aug 2012	211	339	6312

Figure 6: Year 2 project website statistics

5.2.2. LinkedIn

Cloud4SOA uses the social platform LinkedIn for a second home to its online footprint. In Year 1 and 2, this was used to gather a network of stakeholders. With the arrival of the Beta program and OSS availability, the project will now use this platform to its fullest, with an active campaign of material pushed to the group's 97-and-growing member count.

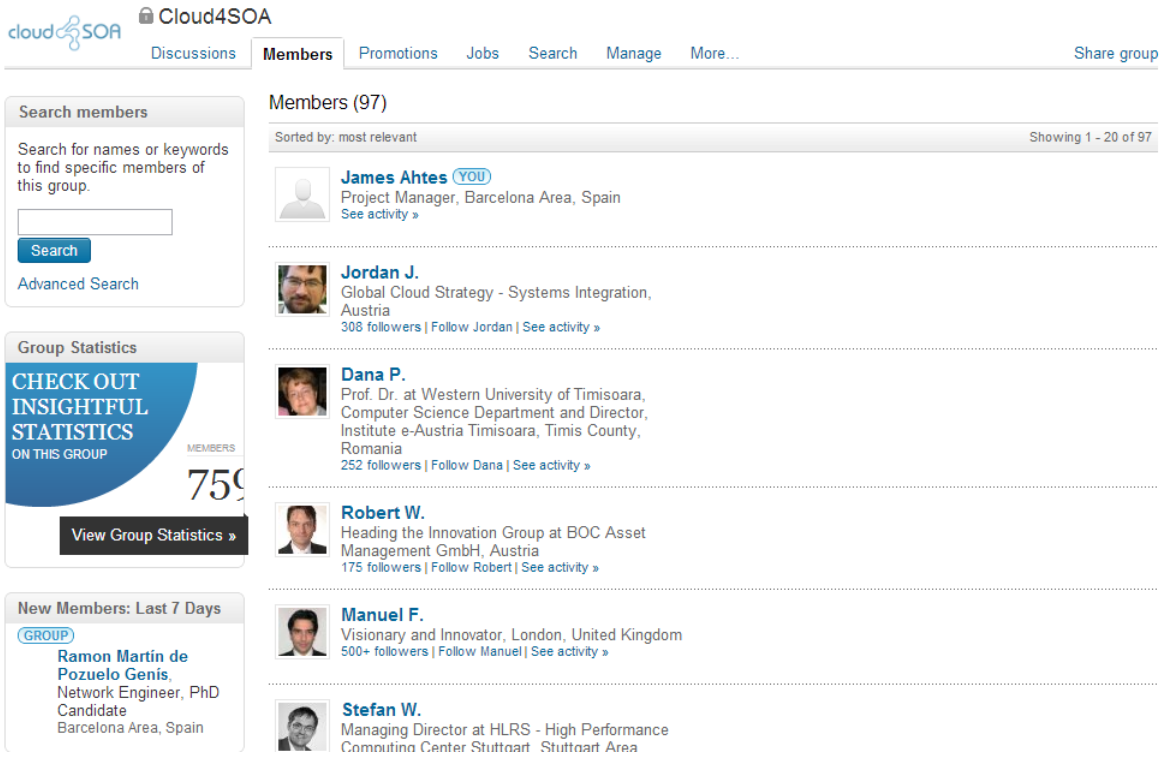


Figure 7: Cloud4SOA's LinkedIn page will be leveraged for the Year 3 campaign

5.2.3. Developer Forums

The most important increase in activity will come from Cloud4SOA participation in Cloud-related forums. In Year 2, an exercise was done to consolidate these leading forums to identify how best to reach its developer stakeholder. A sample is given below, where some examples are technology-specific (e.g. PHP), which will have to be replicated for other supported platform technologies (e.g. Java, Python, .NET) as such new Platform Adapters are created for different PaaS providers. The consortium will use these forums to create awareness of the Beta program and the GitHub forge availability.

Table 2: Cloud development forums for Cloud4SOA participation and dissemination

Forum	Focus	URL
Digital Point	Web design, graphics & multimedia, Content Management, Programming, Server Admin, Databases	http://forums.digitalpoint.com/
Designers Talk	Web	http://www.designerstalk.com/forums/
Dynamic Drive	General	http://www.dynamicdrive.com/forums/
Tycoon Talk	Web	http://tycoontalk.freelancer.com/
Kirupa	General	http://www.kirupa.com/forum/
HIOX	Web, Linux, Server Admin, C++	http://forums.hscripts.com/
HTML Forums	Web, Server Admin	http://www.htmlforums.com/
Site Point	Web	http://www.sitepoint.com/forums/forum.php
entwicklerforum	General	http://entwickler-forum.de/
PHP2All	PHP	http://www.php2all.de/forum.html
Dev Shed	General	http://forums.devshed.com/
PHP Developers Network	PHP	http://www.devnetwork.net/
PHP Resource	PHP	http://www.php-resource.de/forum/php-developer-forum/
PHPforum.de	PHP	http://phpforum.de/forum/
Coding Forums	General	http://www.codingforums.com/
Web Developer	Web	http://www.webdeveloper.com/forum/
C++.de	C++	http://www.c-plusplus.de/forum/
XHTML Forum	Web design	http://xhtmlforum.de/
WebDevForums	Web design	http://www.webdevforums.com/
Webdesignforums	Web	http://www.webdesignforums.net/
Web Designer Forum	Web	http://www.webdesignerforum.co.uk/
Chip Online	General	http://forum.chip.de/entwicklung/

Forum	Focus	URL
Freelance Switch	Freelance	http://forum.freelanceswitch.com/
vBulletin	vBulletin	https://www.vbulletin.com/forum/forum.php
PHP Freaks	PHP	http://www.phpfreaks.com/forums/
PHP Builder	PHP	http://www.phpbuilder.com/board/
developerforce	General cloud	http://boards.developerforce.com/t5/New-to-Cloud-Development/bd-p/new_to_cloud
WebMaker	WebMaker tools	http://www.hyfinity.net/wmforum/
Cloud Computing - Google Groups	General cloud	https://groups.google.com/forum/?hl=en&fromgroups#!forum/cloud-computing
PC Welt	General cloud	http://www.pcwelt.de/forum/cloud-computing/
Teradata	General cloud	http://forums.teradata.com/forum/cloud-computing
WebSphere Developer's Community for Cloud Computing	WebShpere	http://www.ibm.com/developerworks/forums/forum.jspa?forumID=1612
Cloud Computing - Facebook	General cloud	http://www.facebook.com/pages/Cloud-Computing-A-discussion-forum/164029026953238
Web hosting talk	Cloud Hosting	http://www.webhostingtalk.com/forumdisplay.php?f=156
Windows Hosting ASP.NET	Cloud Hosting	http://www.windowshostingasp.net/windows_hosting_forums/forumdisplay.php?f=49
Microsoft Technet	General cloud	http://social.technet.microsoft.com/Forums/en-au/category/cloudcomputing
Eukhost	Cloud servers	http://forums.eukhost.com//f45/
tom's hardware	General cloud	http://www.tomshardware.com/forum/forum-71-375.html
Serchen	General cloud	http://www.freeforums.com/forumdisplay.php?78-Cloud-Hosting-Offers-amp-Requests&s=0e4c2d66eed7d6694c5fa36d33103abd
Web Hosting UK	Cloud Hosting	http://www.webhosting.uk.com/forums/cloud-hosting/
Blacknight solutions	Cloud Hosting	http://forum.blacknight.com/f32/
SaaS Forum	SaaS	http://www.saasforum.com/forums/saasforum/

Forum	Focus	URL
geekzone	General cloud	http://www.geekzone.co.nz/forums.asp?forumid=113
Cloudstack	Cloudstack	http://www.cloudstack.org/forum/index.html

5.2.4. Online Press Coverage

Cloud4SOA had a very successful run with the online press during its initial press release (see D9.2.1). The opening of the Beta program, OSS presence and value-added potential of Cloud4SOA will begin with a strong circulation through a timed release of partner dissemination channels to kick off the Year 3 campaign.

Figure 8: An online press release and coverage will kick off the Beta program and OSS availability

5.3. Published Papers

Cloud4SOA has reached out to fellow researchers by disseminating several scientific publications based on the project's findings and outcomes. In this section, we present these scientific publications (either targeting expert groups or wider audience) carried out during Year 2 of the project. This ranges from journals, conference or published book chapters.

5.3.1. Papers for Project's Year 2

Table 3: Research Papers presented in Cloud4SOA's Year 2

Paper	Publication / Conference	Status	Research paper abstract
"Business application governance in PaaS context" F. D'Andria, J. Martrat, A. M. J. Ferrer, J. Ahtes, I.Chulani (ATOS)	eChallenges e-2011 Conference, Florence, Italy, 26-28 October 2011 http://www.echallenges.org/e2011/	Published and presented	A Cloud environment introduces a tremendous amount of flexibility and scalability with a consequence that a list of items has to be managed more closely compared to traditional systems. Platform-as-a-Service (PaaS) is a combination of a development platform and a solution stack, delivered as a service on demand. Here, availability, security, Quality of Service (QoS), business application management, privacy, location of cloud services and compliance are just some of the aspects of the cloud that have to be monitored and managed closely. Within the Cloud4SOA research project the consortium aims to face new challenges investigating new service engineering paradigms, methods and tools supporting the development of the Cloud Governance Application in PaaS context.
"Cloud computing interoperability: the State of Play" N. Loutas, E. Kamateri, F. Bosi, K. Tarabanis (CERTH, NUIG)	IEEE CloudCom 2011 Workshop on "Market Implementation of Cloud Interoperability and Portability Research in IaaS and PaaS" at the IEEE Third International Conference on Cloud Computing Technology and Science (CloudCom 2011) Athens, Greece 30 November 2011 http://www.cloud4soa.eu/workshop2011	Published and presented	Cloud computing is a promising IT paradigm which enables the Internet's evolution into a global market of collaborating services. Cloud computing semantic interoperability plays a key role in making this a reality. Towards this direction, a comprehensive and systematic survey of Cloud computing interoperability efforts by standardization groups, industry and research community is carried out. The main objective of this survey is to derive an initial set of semantic interoperability requirements to be supported by existing as well as next generation Cloud systems. The survey motivates and encourages the Cloud community to adopt a common Cloud computing interoperability framework with core dimensions the creation of a common data model and a standardized Cloud interface (API), which will constitute the base for the development of a semantically interoperable Cloud environment.

"A Semantic Interoperability Framework for Cloud Platform as a Service" N. Loutas, E. Kamateri, K. Tarabanis (CERTH)	IEEE Third International Conference on Cloud Computing Technology and Science (CloudCom 2011) – main track Athens, Greece 29 November - 1 December 2011 http://2011.cloudcom.org/	Published and presented	Given the rapid uptake and the great diversity of PaaS offerings, understanding semantic interoperability at the PaaS level is essential for supporting inter-Cloud cooperation, seamless information exchange and application and data portability. In this vein, this paper introduces a PaaS semantic interoperability framework (PSIF). PSIF studies, models and tries to resolve semantic interoperability conflicts raised during the deployment or the migration of an application by defining the following dimensions: Fundamental PaaS Entities, Types of Semantics, and Levels of Semantic Conflicts. In the context of this paper, the development of common PaaS models and standardized management interfaces are raised as primary requirements in this context. PaaS architectures can then be augmented with a semantic layer that would host the common models and would be the link between heterogeneous PaaS offerings.
European Research Activities in Cloud Computing (chapter)	Cambridge Scholars Publishing Editors: Dana Petcu and Jose Luis Vasquez Poletti March 2012	Published	What's new in the European research and development area? Cloud computing is a provision model where whatever computing resource that can be thought of (machines, network, software solutions, applications) is provided as a service. This new paradigm has changed the center of gravity of computing in both the academic and industry environments, but despite the considerable efforts and investments, there are critical problems that are not yet solved. The research and development community involved in distributed computing is searching for viable solutions that will increase the adoption of the cloud. This is the case of the collaborative work done by multi-national teams in the context of the FP7 programme of the European Commission. Students, researchers and developers working in the field of distributed computing will find in this book a snapshot of the on-going activities in research and development of cloud computing undertaken at the European level. These activities are organized by the latest hot topics of cloud computing research, which include services, management, automation and adoption. Summarizing, this book will help the reader understand and identify the research and development winds that are pushing the clouds to Europe.

"Cloud4SOA: Multi-Cloud Application Management Across PaaS Offerings" F. D'Andria, S. Bocconi, J. Gorroñogoitia Cruz, J. Ahtes, D. Zeginis (ATOS, CYNTELIX, CERTH)	MICAS – Management of resources and services in Cloud and Sky computing 1st Workshop organized in conjunction with SYNASC 2012 West University of Timisoara, Romania, 26 September 2012 http://amicas.hpc.uvt.ro/first-workshop-in-september-2012/	Accepted	Cloud Platform as a Service (PaaS) is a novel paradigm that enables software developers to create (develop or integrate), deploy, execute, and manage business applications, using a service provided by a third party. The diversity and heterogeneity of the existing PaaS offerings raises several interoperability challenges. The actual Platform as a Service market is still quite young, chaotic and highly fragmented, dominated by a few providers which use and promote incompatible standards and formats. This introduces adoption barriers due to the lock-in issues that prevent the portability of data and software from one PaaS to another. Moreover, software developers do not only need to deploy applications into a specific cloud platform, but also to migrate applications from one cloud platform to another, and to manage distributed applications spanning multiple PaaS. In this paper, we present a multi-cloud PaaS management as a result of the Cloud4SOA European project that addresses these challenges.
"A Survey on Cloud Computing Interoperability" N. Loutas, E. Kamateri, K. Tarabanis (CERTH)	ACM Computing surveys http://csur.acm.org/	Awaiting review	Cloud computing is a promising IT paradigm which transforms the Internet into a global market of collaborating, interlinked services. Cloud computing interoperability plays a key role in making this a reality. However, the current state of the Cloud market is far from this visionary statement, as giant IT vendors monopolize the Cloud market and impose their own incompatible architectures, models and APIs. The objective of this survey is to shed light on Cloud computing interoperability providing deep insights into current efforts to tackle Cloud interoperability. Towards this direction, a comprehensive and systematic review of the Cloud computing interoperability is carried out and the primary interoperability concepts and directions are identified. Our analysis concludes that three complementary strands are followed: (i) the specification of reference Cloud computing architectures, (ii) the development of common Cloud models and (iii) the definition of unified Cloud APIs.

Cloud4SOA: Multi-Cloud Application Management and Portability Across PaaS Offerings Cloud4SOA Consortium	Whitepaper	For release in parallel to Beta program	Based on WP9 market analysis, competitive analysis and exploitation development, this whitepaper (parts of which can be found in D9.3.3) will be released alongside the Beta program, GitHub Forge OSS release and January-March 2013 event campaign.

5.3.2. Year 3 Paper Releases

Several papers are already planned for Year 3, continuing the outreach to researchers and industry stakeholders alike.

Stakeholder-oriented Whitepaper

Based on WP9 market analysis, competitive analysis and exploitation development, "Cloud4SOA: Multi-Cloud Application Management and Portability Across PaaS Offerings" (parts of which can be found in D9.3.3) will be released alongside the Beta program, GitHub Forge OSS release and January-March 2013 event campaign in the synchronized dissemination campaign.

Scientific paper for Semantic Model

A separate publication will be created focused on the Cloud4SOA semantic model. This will explain the adopted methodology, the layers and the concepts of the model and it will provide an example of how it has been applied to the Cloud4SOA system. This paper will be used to disseminate Cloud4SOA's semantic model to providers, developers as well as the research and standard community.

Whitepaper of project's chief outcomes

A consolidated whitepaper will present the shared outcomes of the project, going deeper into the technical aspects including the Cloud4SOA System's reference architecture, implementation layers, core capabilities and Beta program.

5.4. Published Material

5.4.1. Research Guide

As part of the dissemination activity of the Cloud4SOA project, a 16-page research guide has been produced to describe the main scientific and technical achievements carried out so far in the Cloud4SOA project.

The targets of this booklet are developers, PaaS providers and researchers that wish to know more about the technical/scientific aspects of Cloud4SOA project. Thus, the content is quite explanatory, presenting the general idea of the project, the introduced reference architecture, its core capabilities, as well as the main advances carried out in each layer of the architecture.

Figure 9: The Cloud4SOA Research Guide - a 16-page overview of the project

5.4.2. Business-oriented Booklet

In the winter of 2012 a business-oriented booklet will be produced, using the same design as the Research Guide. However, this booklet will be oriented towards the capabilities, value proposition, Beta program and how developers and PaaS providers can become involved in the OSS crowdsourcing strategy.

5.4.3. Poster

A poster has been created for the project to give an overview of the reference architecture, capabilities and overview of the project. Even in industry settings, this poster shows a clear 1-sheet overview of the technical and design aspects behind the project, and the valued capabilities that it provides.

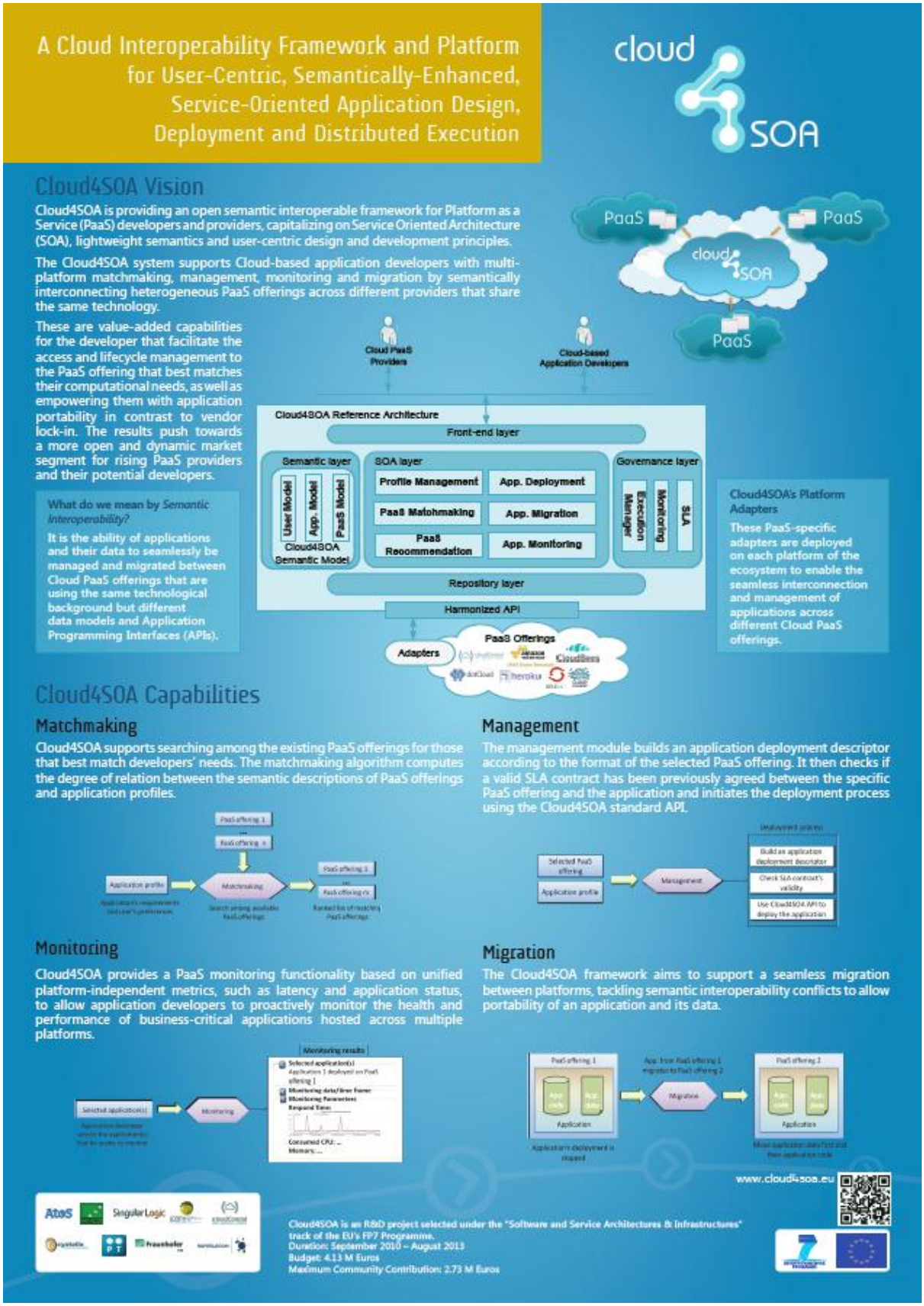


Figure 10: Cloud4SOA Poster presenting its overview, architecture and capabilities

6. Conclusion

The project's second year of dissemination activity has generated a wide range of visibility, discussion and feedback through workshops, stakeholder venues, published papers and supporting material that has helped shape Cloud4SOA's RTD and exploitation development.

As its workplan's final year begins, the project now enters its more important phase of the dissemination campaign, with specific objectives to support the output and sustainability of Cloud4SOA:

- generate a critical mass of stakeholder interest towards the output, value proposition and impact of Cloud4SOA's assets
- initiate the Cloud4SOA Beta program by involving its stakeholders and facilitating the their feedback towards the final development cycle of the project
- catalyze community crowdsourcing involvement to support Cloud4SOA's OSS adoption and sustainability

Cloud4SOA's stakeholders reflect the PaaS spectrum, where developers, providers, standards groups and researchers can leverage and benefit from the projects assets. The centerpiece of this interaction is the Beta program, providing the project its most tangible and complete vehicle to reach its stakeholders at key locations, such as Cloud Expo Europe (industry), FOSDEM (OSS) and Cloudscape V (standards community).

This will be supported in full by an active online outreach that connects to its developer stakeholders in a variety of discussion forums, as well as the publication and circulation of papers and marketing material that pushes the key assets of the project.

To bring this to realization, the building blocks needed for its crowdsourcing OSS strategy, such as the GitHub forge availability and Platform Adapter Creation Kit, act as enablers for Cloud4SOA's sustainable future and compliment the dissemination campaign's effort.