



PICSE: Procurement Innovation for Cloud Services in Europe

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Abstract: The report will focus on how the objectives of the project's communication and exploitation strategy were met and their societal and economic impacts were fulfilled.

DOCUMENT INFORMATION

Project

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Document

DISCLAIMER

PICSE (644014) is a Coordination and Support Action funded by the EU Framework Programme for Research and Innovation Horizon 2020. The PICSE Procurers' Platform will give access to a unique repository of information supporting the move from outright purchase to 'pay-per-usage' made possible by the arrival of cloud computing. It builds on the Helix Nebula collaboration between supply and demand of which the three PICSE partners are key members.

This document contains information on PICSE core activities, findings and outcomes and it may also contain contributions from distinguished experts who contribute to PICSE. Any reference to content in this document should clearly indicate the authors, source, organisation and publication date. The content of this publication is the sole responsibility of the PICSE consortium and cannot be considered to reflect the views of the European Commission.

CHANGE LOG

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Executive Summary

The following summary outlines the major assets and sustainability strategy that PICSE has produced during its eighteen month activity. This second iteration, which is the present report, combines the final strategy of the communication plan as well as addressing the exploitation of the project itself. The PICSE project, in its timeframe produced:

Four PICSE Major Sustainable and Exploitable Assets

- **PICSE Roadmap**, highlighting the existing challenges, barriers and trends in procuring cloud services and presenting a precise Call for Action for the three major stakeholders involved in the cloud procurement process: Public Research Sector Organisations, Cloud Service Providers and Policy Makers.
- **PICSE Cases Studies & Best Practices**, providing a set of lessons learnt and good practices at which public sector organisations can look at as a reference point when procuring cloud services.
- **The PICSE Wizard Tool¹ and a cloud procurement guide**, aimed to provide public research sector organisations new to the cloud with easy to use tools to facilitate and speed up the procurement of cloud services.
- **PICSE.eu platform**, a unique knowledge hub for public procurement of cloud services. Hosting all the main project assets, responds to several European policy priorities for cloud computing, by fostering trust in cloud services for the public sector.

A successful learning experience setting the scene for a new joint Pre-Commercial Procurement

- **PICSE's procurement model and networking activities has led to the formation of a joint Pre-Commercial Procurement (PCP) for innovative cloud services** entitled HNSciCloud² (2016-2018) Two of the PICSE partners are also involved. HNSciCloud aims to execute a joint tender led by 10 public research organisations across Europe, for which it will apply a revised and agile procurement model, based on the initial research performed by PICSE, and verify its applicability on a European scale. The experience gained will be used to refine the procurement model, which can establish a best practice for public sector procurements.

¹Developed thanks to recommendations from the stakeholder community and produced by the consortium in addition to the principal objectives laid out in the work plan.

² www.hnscicloud.eu

Multiple benefits for different stakeholders involved

PICSE stakeholders	Main benefits
Public Research Sector Organisations (PROs)	<p>Over the 18 months</p> <ul style="list-style-type: none"> a unique knowledge base on public procurement of cloud services accessible via the PICSE website events tailored to the scientific community where PROs had the opportunity to establish a dialogue with cloud service providers and share needs and challenges with other PROs establishment of the new PCP of innovative cloud services destined to change the way PROs procure cloud services (HNSciCloud) support on how to write cloud tenders informative material and lessons learnt on pre-commercial procurement and public procurement of innovation instruments a web-based application, the PICSE wizard, that supported around 70 cloud early adopters to learn more around the process of procuring cloud services a Cloud Procurement Guide for early adopters provision of a set of actions included in the PICSE Roadmap that can help PROs speeding up their cloud procurement process suggestions of tools developed by different projects that can facilitate the procurement of cloud services for PROs (See Action 3 of PICSE Roadmap) <p>Future benefits</p> <ul style="list-style-type: none"> an updated knowledge base on public procurement of cloud services accessible via the PICSE website and the PICSE Wizard available for the next 3 years New case studies emerging from the HNSciCloud experience Update or validation of the call for actions for PROs after the end of HNSciCloud project
Cloud Service Providers (CSPs)	<p>Over the 18 months</p> <ul style="list-style-type: none"> events tailored to the scientific community where CSPs had the opportunity to establish a dialogue with PROs and better understand their needs better understanding of the PCP and PPI instruments and how these can be transformed in business opportunities for CSPs launch of two tenders to procure cloud services by CERN during the project Information on what PROs expect from CSPs (Case studies report) provision of a set of actions included in the PICSE Roadmap that can help CSPs to meet the procurement requirements of PROs <p>Future benefits</p> <p>Launch of a new tender within HNSciCloud</p> <p>Update or validation of the call for actions for CSPs after the end of HNSciCloud project</p>
Policy Makers	<p>Over the 18 months</p> <ul style="list-style-type: none"> events tailored to the scientific community where policy makers had the opportunity to discuss about current barriers related to the procurement of cloud services and how to shape the future European Open Science Cloud (PICSE helped the production of the “Towards the European Science Cloud” paper³) support on how to write cloud tenders provision of a set of actions included in the PICSE Roadmap that can help policy makers to speed up the cloud adoption in Europe (e.g. the establishment of a cloud chapter in

³ <https://zenodo.org/record/16001#.Vw0yTke3Nzp>

PICSE stakeholders	Main benefits
	<p>the European Assistance For Innovation Procurement (EAFIP), the creation of a unique European catalogue of cloud service providers and related services for science, etc.)</p> <p>Future benefits</p> <ul style="list-style-type: none"> • Establishment of the first pilot for a federated IaaS cloud ecosystem (HNSciCloud) • Update or validation of the call for actions for policy makers after the end of HNSciCloud project
EU projects and initiatives	<p>Over the 18 months</p> <ul style="list-style-type: none"> • a unique knowledge base on public procurement of cloud services accessible via the PICSE website • mutual promotion of the project outcomes and benefits • continuous exchange of knowledge related to procurement of cloud services • outreach of different audiences (public sector organisations and public research sector organisations were able to compare their needs and challenges) • co-organisation of events <p>Future benefits</p> <ul style="list-style-type: none"> • Many EU projects and initiatives are referenced in the Roadmap that will be further disseminated after the end of the project

Exploitation opportunities for the PICSE partners

- **CERN:** The PICSE results were used by CERN as an input to draft the two cloud tenders that CERN issued during the project lifetime. The outcomes of these procurement actions together with all the knowledge acquired by PICSE will be exploited by CERN to lead the recently launched HNSciCloud PCP project. In addition, PICSE results will be used to carry out the activities related to the EGI-Engage project where CERN is establishing the mechanisms for performing cross-border procurements by ERICs with their member states, including PCP/PPI and EU structural funds.
- **Cloud Security Alliance (CSA):** The results of PICSE will be used to complement research activities in the area of Governance, Risk Management and Compliance (GRC) carried out by CSA and potentially update the cloud best practices based on the identified best practices within PICSE. They also will be leveraged to potentially improve the current Open Certification Framework / STAR Program CSA manages.
- **Trust-IT Services:** The results of PICSE will be extensively used in the HNSciCloud project of which Trust-IT is a partner. In addition, they will be used to complement research activities in the area of promoting cloud computing uptake for public sector organisations (CloudWATCH2), in the area of cloud SLA (SLA-Ready) and security & privacy investigation (CLARUS). The experience gained within the PICSE project will be useful for Trust-IT to extend its consultancy services including expertise on PCP and PPI and to expand its commercial service portfolio. Trust-IT Services commits to managing the website and publish content, for one person day per month on the PICSE website for the following three years. Trust-IT will also re-elaborate, in the coming month, the PICSE web platform to introduce the PICSE assets in the homepage for the targeted stakeholders to access more easily.

The final communication plan put into practice the following objectives, which were identified during the lifetime of the project:

- **Objective 1: Stakeholder identification and engagement** – Mobilization and engagement of target stakeholders: public research organizations (mainly all the actors involved in the procurement process), libraries, procurement specialists (in particular those dealing with the procurement of cloud services), cloud service providers, local government associations and procurement departments, initiatives working in the field of PCP / PPI, policy makers, funding agencies, public sector decision makers, SMEs & the private sector, general public;
- **Objective 2: Establishing strategic alliances** - leveraging partner networks and strategic alliances in Europe and globally;
- **Objective 3: Timely communication and promotion of the PICSE main outcomes and of the opportunities offered by PCP/PPI actions** – Set up of an online repository of information, the European Procurers' Platform (www.picse.eu), supporting the networking of procurers, promoting the cloud services market and facilitating the demand & supply side dialogue;
- **Objective 4: Outreach & visibility of the project** – Awareness raising activities to reach the biggest audience;
- **Objective 5: Developing a clear PICSE identity** – Design and development of a PICSE branding that is easily recognisable and facilitates the understanding of the PICSE findings and potential further exploitation. The creation of a strong identity will help to create promotional & dissemination material on which PICSE can leverage on, to disseminate the project findings at relevant events.

To achieve these objectives a set of actions were put in place.

- Value propositions were defined to reinforce PICSE's branding and identity and its mission.
- The PICSE web portal www.picse.eu was published. This was a reference point for the project communication, dissemination and engagement activities. The website, PICSE activities on social networks and the PICSE Wizard, were a springboard to foster cohesion and knowledge exchange across the different stakeholder groups targeted.
- Timely communication activities saw over 54 content pieces, 13 case studies, 7 reports, over 20 presentations, 3 press releases, 35 events, 3 newsletters, 1 guide to how to procure cloud services, 20 content dedicated to procurement tips and tricks, for a total amount of over 150 content produced during the project lifetime and published on the PICSE website.
- Different communication and dissemination tool were put in place such as interviews, surveys, reports and newsletters.

The major results are described in the following:

Engagement of key stakeholder

- I. Over **25 external, international experts** voluntarily contributed to the PICSE Roadmap, case studies, and best practices;
- II. **Over 300 relevant stakeholders** (public research organisations, cloud service providers and policy makers) engaged through the PICSE events and surveys;
- III. **Over 70 early cloud adopters** educated through the PICSE Wizard
- IV. Engagement and continuous interaction with the most relevant policy makers was ensured;

- V. Reinforcement of the synergy with the major research sector organisations led to the establishment of a new consortium launching a Pre-Commercial Procurement action for cloud services;
- VI. **Consolidated synergies with 37 international initiatives** and projects operating in the cloud procurement sector and providing cloud services for the public sector.

Providing users with a unique knowledge base

- PICSE.eu became the knowledge hub for procurement of cloud services for the public research sector;
- A Partner Search Facility⁴ was set up to speed up PCP/PPI uptake and a tool, the PICSE wizard (wiz.picse.eu) was built to facilitate the procurement process of cloud services through recommendations and tips;
- PICSE provided support on cloud procurement to research sector organisations and funding agencies giving tips and recommendations on past and future cloud tenders.

A growing community

- At the end of March 2016, the PICSE website counts over 600 monthly visitors. Twitter counts 125 Followers and overall 300 retweets and likes have been collected which represents the 63% of all the tweets. PICSE LinkedIn account counts 255 relevant connections. In addition, all the PICSE outcomes and progress has been disseminated through the Helix Nebula Initiative social networks composed of 533 Twitter followers, 480 LinkedIn and 522 Facebook connections. By analysing the online community around 1000 of target stakeholders have been reached.
- 3 press releases and 8 articles on the major international cloud computing and procurement journals have been published increasing the visibility of the full project.

⁴ See paragraph 4.2.2

Glossary

Term	Definition
CSP	Cloud Service Provider
HNSciCloud	Helix-Nebula the Science Cloud
PCP	Pre-Commercial Procurement
PICSE	Procurement Innovation for Cloud Services in Europe
PPI	Public Procurement of Innovation
PRO	Public Research Organisation
SME	Small and Medium Enterprise

1. PICSE Exploitation plan

1.1 How PICSE addresses the ICT-35-2014 call

The results achieved by PICSE fully address the challenges of the call ICT-35-2014⁵, European networks of procurers (European Procurers Platforms - EPP).

- *The objective of the call is to support the creation of European wide networks of procurers that define together an innovation procurement roadmap, identifying shared procurement needs in the near term (relevant for PPI) as well as mid-to-long term (relevant for PCP) in areas of common European interest. EPPs actions must engage into an open dialogue with all potential stakeholders, including other procurers and end-users.*

PICSE's analysis of procurement of cloud services and networking activities have led to the formation of a **joint Pre-Commercial Procurement (PCP) for innovative cloud services** called **HNSciCloud**¹ (2016-2018). HNSciCloud aims to execute a joint tender led by **10 public research organisations across Europe**, for which it will apply a revised and agile procurement model, based on the initial research performed by PICSE, and verify its applicability on a European scale. The experience gained will be used to:

- refine the procurement model which can establish a best practice for public sector procurements;
- enrich the case studies produced by PICSE
- update/validate the actions included in the PICSE Roadmap.

This PCP is the major concrete result of the work performed by PICSE: thanks to the knowledge generated by PICSE on the procurement of cloud services, the best practices identified, the case studies analysed and the knowledge built on the Pre-Commercial Procurement and Public Procurement of Innovation instruments, a group of procurers co-funded a joint PCP with 1,6M€.

- *EPPs must publish their perceived procurement needs online, in a way that enables the research and innovation community to comment and submit ideas to make suggestions for future PCPs or PPIs relevant to the focus domain of the EPP. EPPs must also undertake activities that investigate the feasibility and facilitate the concrete preparation of a cross-border PCP or PPI for at least one shared common procurement need. EPPs must contain a critical mass of public procurers responsible for the acquisition and/or regulatory strategy for innovative solutions in areas of public interest that are large potential customers for ICT LEIT technologies. EPPs must undertake dissemination activities to share results and raise awareness about PCP and PPI across Europe.*

The lessons learnt through the cases studies, the best practices identified by PICSE and all the material generated to create awareness on PCPs and PPIs were extensively disseminated by PICSE at relevant events and made available online via the PICSE website⁶. **The huge effort done by the project brought very tangible results and contributed to speed up the adoption of cloud services for public sector organisations:**

⁵ <https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/287-ict-35-2014.html>

⁶ www.picse.eu

- **Specific recommendations on how to write cloud tenders have been provided** by PICSE to different stakeholders (i.e. DG Translation and Europeana who during the project were in the phase of issuing tenders);
- A specific **Partner Search facility has been made available via the PICSE.eu website** (See paragraph 4.2.2) that allowed six organisations interested in applying to the ICT Call 8⁷ and the ICT Call 36⁸ to describe their needs and search for partners. Thanks to these submissions **three out of these six organisations were contacted by interested potential partners to build up new consortia for PCP and PPI.**
- The promotion of the G-Cloud framework, identified as one of the cloud procurement best practices within member states and the invitation of G-Cloud representatives at PICSE events **put the basis for a publicly funded research organisation, the European Space Agency, to build a similar marketplace for Software as a Service, Platform as a Service, Infrastructure Provision, IT specialists, Helpdesk Services and Security Services that will be launched in 2016.**

At the basis of these results there are the four major assets produced by PICSE which are described in the following paragraph.

1.2 PICSE major assets & main benefits for stakeholders

The PICSE activities have resulted in new knowledge that can be converted into socio-economic benefits for the target stakeholders. PICSE has built four major assets as explained in table below:

PICSE ASSETS	
Current status	Future Status [2016-2018]
1. PICSE Roadmap (D2.3): The Roadmap highlights the existing challenges, barriers and trends in procuring cloud services. In addition, it presents a precise Call for Action for the three major stakeholders involved in the cloud procurement process: Public Research Sector Organisations (the demand-side), Cloud Service Providers (the supply-side) and Policy Makers (the regulators). The Roadmap is a lasting legacy of the project which provides calls for action to harmonise legislation, procurement rules, and European research agencies.	The actions included in the Roadmap will be updated at the end of HNSciCloud (2018) by contributing to the work of the Commission Expert Group set up by the Directorate-General for Research and Innovation. The PICSE Roadmap will be made available on the Open Science Cloud platform set up by the EC in the third quarter of 2016.
2. Promoting trust in procuring cloud services through case studies and best practices: PICSE has extensively analysed the current cloud procurement landscape to assess how public organizations procure cloud services. Three insightful deliverables charted the course of cloud procurement in this area by firstly identifying barriers preventing the procurement of cloud services (D3.1), 13 international case studies	The case studies, which during the project resulted in a change of attitude in the way the procurers engaged apprehend and comply with procurement standards, and

⁷ Boosting public sector productivity and innovation through cloud computing services

⁸ Pre-commercial procurement open to all areas of public interest requiring new ICT solutions

PICSE ASSETS	
Current status	Future Status [2016-2018]
(D2.2), and a set of examples of best practices (D3.2)) in the field, which can in future be used as models for future procurers. Outputs of all three reports provided important input for the PICSE Roadmap (D2.3).	best practices will be enriched with the experience of HNSciCloud. They will be further promoted via the PICSE & CloudWATCH hub websites
3. PICSE wizard⁹ and Guide to cloud procurement¹⁰: Results from D2.1, 3.1 and MS2 were used to create a Guide to cloud procurement and a web-based application, the PICSE Wizard (wiz.picse.eu). As detailed in section 4.2.3 of this document, the wizard consists of two tools: the cloud procurement model and the self-assessment tool. This online tool helps IT managers & procurers, in charge of the procurement of cloud services in public research organisations, make a self-assessment and evaluate their procurement procedures.	They will be further promoted via the PICSE & www.cloudwatchhub.eu [2016-2017] websites
PICSE.eu: PICSE.eu is a unique knowledge hub for public procurement of cloud services. Hosting all the main project outputs listed above, the website responds to several European policy priorities for cloud computing, by fostering trust in cloud services for public sector. Public sector organisations, cloud service providers and policy makers can access proposed model procurement processes and tools which can serve to facilitate a greater understanding of the benefits of cloud computing and awareness of procurement of cloud services so that informed decisions can be made.	PICSE.eu will be maintained live and updated by Trust-IT Services for the following three years.

Table 1: PICSE Assets.

These assets of the PICSE project are highlighted on the Home Page of the PICSE website:

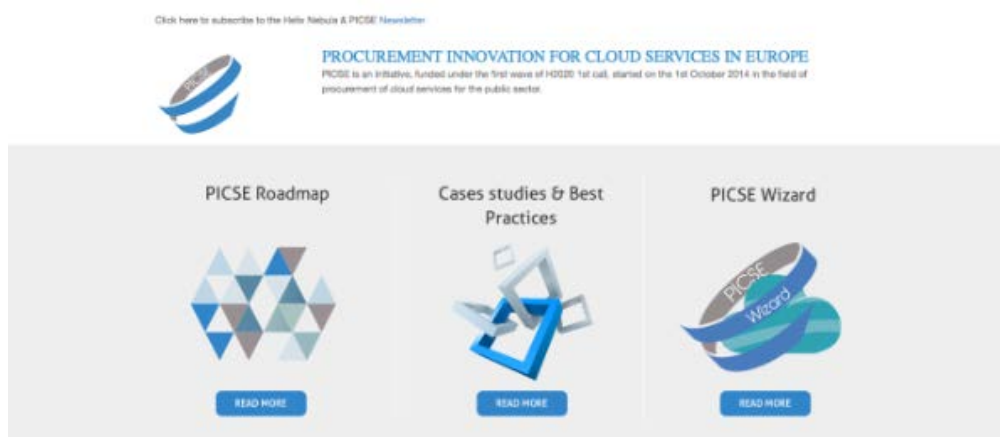


Figure 1: PICSE website.

In the following, we describe how PICSE stakeholders have benefitted/will benefit of the PICSE assets:

⁹ wiz.picse.eu

¹⁰ www.picse.eu

PICSE stakeholders	Main benefits
Public Research Sector Organisations (PROs)	<p>Over the 18 months</p> <ul style="list-style-type: none"> a unique knowledge base on public procurement of cloud services accessible via the PICSE website events tailored to the scientific community where PROs had the opportunity to establish a dialogue with cloud service providers and share needs and challenges with other PROs establishment of the new PCP of innovative cloud services destined to change the way PROs procure cloud services (HNSciCloud) support on how to write cloud tenders informative material and lessons learnt on pre-commercial procurement and public procurement of innovation instruments a web-based application, the PICSE wizard, that supported around 70 cloud early adopters to learn more around the process of procuring cloud services a Cloud Procurement Guide for early adopters provision of a set of actions included in the PICSE Roadmap that can help PROs speeding up their cloud procurement process suggestions of tools developed by different projects that can facilitate the procurement of cloud services for PROs (See Action 3 of PICSE Roadmap) <p>Future benefits</p> <ul style="list-style-type: none"> an updated knowledge base on public procurement of cloud services accessible via the PICSE website and the PICSE Wizard available for the next 3 years New case studies emerging from the HNSciCloud experience Update or validation of the call for actions for PROs after the end of HNSciCloud project
Cloud Service Providers (CSPs)	<p>Over the 18 months</p> <ul style="list-style-type: none"> events tailored to the scientific community where CSPs had the opportunity to establish a dialogue with PROs and better understand their needs better understanding of the PCP and PPI instruments and how these can be transformed in business opportunities for CSPs launch of two tenders to procure cloud services by CERN during the project Information on what PROs expect from CSPs (Case studies report) provision of a set of actions included in the PICSE Roadmap that can help CSPs to meet the procurement requirements of PROs <p>Future benefits</p> <p>Launch of a new tender within HNSciCloud</p> <p>Update or validation of the call for actions for CSPs after the end of HNSciCloud project</p>
Policy Makers	<p>Over the 18 months</p> <ul style="list-style-type: none"> events tailored to the scientific community where policy makers had the opportunity to discuss about current barriers related to the procurement of cloud services and how to shape the future European Open Science Cloud (PICSE helped the production of the “Towards the European Science Cloud” paper¹¹) support on how to write cloud tenders provision of a set of actions included in the PICSE Roadmap that can help policy makers to speed up the cloud adoption in Europe (e.g. the establishment of a cloud chapter in the European Assistance For Innovation Procurement (EAFIP), the creation of a unique European catalogue of cloud service providers and related services for science, etc.) <p>Future benefits</p> <ul style="list-style-type: none"> Establishment of the first pilot for a federated IaaS cloud ecosystem (HNSciCloud)

¹¹ <https://zenodo.org/record/16001#.Vw0yTke3Nzp>





PICSE stakeholders	Main benefits
	<ul style="list-style-type: none"> Update or validation of the call for actions for policy makers after the end of HNSciCloud project
EU projects and initiatives	<p>Over the 18 months</p> <ul style="list-style-type: none"> a unique knowledge base on public procurement of cloud services accessible via the PICSE website mutual promotion of the project outcomes and benefits continuous exchange of knowledge related to procurement of cloud services outreach of different audiences (public sector organisations and public research sector organisations were able to compare their needs and challenges) co-organisation of events <p>Future benefits</p> <ul style="list-style-type: none"> Many EU projects and initiatives are referenced in the Roadmap that will be further disseminated after the end of the project

Table 2: Stakeholders vs benefits.

1.3 How specific stakeholders have benefitted from PICSE

The following table below addresses how different stakeholders have benefitted from the PICSE assets.

1.3.1 Public research sector organisations

Stakeholder	Impact
	In 2015 CERN ran two different procurement of cloud services by using the insights coming out by the PICSE cases studies. In particular, these procurements were related to i) the procurement of computing intensive simulation workloads; ii) IO intensive data related workloads. In addition, the outcomes of PICSE allowed CERN to gain a better understanding of the PCP instrument. Today CERN is acting as lead procuring authority for HNSciCloud. During the PICSE project CERN, promoted the work of PICSE within the EIROforum organisations and used the knowledge acquired to produce the paper “Towards the European Open Science Cloud” ¹² which provides a clear vision of how the establishment of a European Open Science Cloud will enable digital science by introducing IT as a Service to the public research sector in Europe. The document has served as input to the EC Public Consultation on future research priorities in Cloud Computing, Software and Services, ahead of the H2020 ICT Work Programme 2015-16.
	CNRS, the Centre National de la Recherche Scientifique (National Centre for Scientific Research) has been involved in the PICSE events and networking activities and now is part of the HNSciCloud PCP co-funding the project.
	DESY, the Deutsches Elektronen-Synchrotron, has been involved in the PICSE events and networking activities and now is part of the HNSciCloud PCP co-funding the project.
	ECMWF was one of the PICSE case studies. After the knowledge collected through the PICSE project they are ready to start procuring cloud services.

¹² <https://zenodo.org/record/16001>

Stakeholder	Impact
EMBL 	EMBL, the European Molecular Biology Laboratory, participated to the PICSE case studies and is now adopting the recommendations that came out from the PICSE case studies to run cloud procurement actions within EMBL. In addition, EMBL, is part of the HNSciCloud PCP co-funding the project.
ESRF 	The European Synchrotron Radiation Facility (ESRF) has been involved in the PICSE events and networking activities and now is part of the HNSciCloud PCP as a user.
Europeana 	PICSE presented its early results at the Europeana Tech conference in February 2015. During the presentation, PICSE described the PCP and PPI instruments stimulating a lot of interest in the audience, especially from the Europeana cloud project. As a result, Europeana asked the support of PICSE to have more information about PCP/PPI and they joined the webinar on PCP organized by the project. Europeana then submitted a proposal under the ICT8 call dedicated to PCP. As the proposal was not retained for funding, Europeana, who also contributed to PICSE with a case study, issued a tender and an SME was selected that performed the PaaS integration using CloudFoundry open source software ¹³ .
European Space Agency 	Inspired by the G-Cloud model in procuring cloud services for the public sector presented at the 2015 Helix Nebula/PICSE joint public event on the European Open Science Cloud, the European Space Agency (ESA), A member of the EIROForum and Helix Nebula Initiative, built plan to create a 40 million euro Digital Marketplace in the course of the next 5 years, with procurement activities starting in 2017.
IFAE 	IFAE, the Institut de Física d'Altes Energies, has been involved in the PICSE events and networking activities and now is part of the HNSciCloud PCP co-funding the project.
INFN 	The National Institute of Nuclear Physics (INFN) has been involved in the PICSE events and networking activities and now is part of the HNSciCloud PCP co-funding the project.
KIT 	The Karlsruhe Institute of Technology (KIT) has been involved in the PICSE events and networking activities and is now part of the HNSciCloud PCP co-funding the project.
STFC 	STFC, the Science and Technology Facilities Council has been involved in the PICSE events and networking activities and is now part of the HNSciCloud PCP co-funding the project.
SurfSARA 	SURFsara, the Dutch foundation that provides supercomputers, colocation, networks and high-end visualisation to academic institutions, has been involved in the PICSE events and networking activities and is now part of the HNSciCloud PCP co-funding the project.

Table 3: Impact on PROs.

¹³ <https://www.cloudfoundry.org/>

1.3.2 Cloud service providers



Stakeholder	Impact
Cloud 28+ 	Cloud28+ contacted PICSE to acquire a better understanding of the lessons learnt by the project, in particular related to the outcomes of the case studies. Cloud 28+ therefore exploited the results of the PICSE case studies to raise awareness of the procurement issues and challenges related to the research sector within its network of CSPs. In addition, Cloud28+ is part of the PICSE Roadmap as an example of an initial effort to put together a catalogue of Cloud Service Providers.
HNI– Supply Side 	Helix Nebula supply side representatives have been involved in the PICSE events and networking activities and benefitted from a better understanding of the PROs needs and requirements. They were among the first informed about the procurement actions performed by CERN (the two tenders issued by CERN were awarded by two HNI suppliers) and on the PCP procedures. In the future, they can benefit from the HNSciCloud tender.

Table 4: Impact on CSPs.

1.3.3 Policy makers






Stakeholder	Impact
DG DIGIT 	DG DIGIT representatives were invited at the PICSE event held in Frascati in November 2014 to present their experience with the procurement of cloud services. PICSE facilitated the exchange of information among DG DIGIT and the PROs approaching the procurement of cloud allowing the sharing of best practices and lessons learnt.
DG Translation 	The work performed reached out beyond its initial objective by fulfilling a request from DG Translation for consultation on how to write effective cloud tenders. PICSE provided free consultancy for a dialogue to support them in 2015.
e-IRG 	PICSE contributed to the e-Infrastructure Reflection Group events providing feedback on the European cloud procurement landscape.

Table 5: Impact on Policy Makers.

1.3.4 EU projects and initiatives

Stakeholder	Impact
CloudWATCH2 	CloudWATCH2 promotes trust and transparency in cloud computing by supporting SMEs, governments and public administrations with a suite of user-friendly tools and practical guides. During the project duration CloudWATCH services were promoted by PICSE and CloudWATCH is part of the PICSE Roadmap. The PICSE Wizard, case studies and Guide to cloud procurement will enrich the CloudWATCH service offer by outreaching the research sector audience on a funded effort until Sept 2017 & then on a self-sustainable effort for the following further three years.
CLIPS 	CLIPS 'Cloud approach for Innovation in Public Services' – is a 30 month pilot project funded through the CIP Programme of the European Commission, aimed at the development of a new approach to the delivery of public services through the use of cloud computing. The collaboration with CLIPS was important to share best practices and lessons learnt between

Stakeholder	Impact
	the public sector at large and the public research sector. Through PICSE, CLIPS was able to outreach the research sector community.
	The continuous exchange of knowledge and lessons learnt between the two projects was fundamental for Cloud for Europe to get feedback from a different audience (Cloud for Europe mainly address public administrations). PICSE helped Cloud for Europe to better promote their work.
	EGI Engage is establishing the mechanisms for performing cross-border procurements by ERICs with their member states, including Pre-commercial procurement (PCP)/Public-private partnerships (PPI) and EU structural funds. The results of the PICSE project were important within EGI –Engage to raise awareness about the procurement of cloud services within the ESFRI RIs and the scientific research community at large that now are investigating how to approach the procurement of cloud services.
	Through the case studies and the work that PICSE has done for the best practices, PICSE has identified G-cloud as a very important development in member states. By promoting G-Cloud and inviting G-Cloud representatives to the June 2015 PICSE event and to Cloudscape, PICSE helped the diffusion of the G-Cloud model in Europe.
	<p>As a result of the CERN procurements (initiated by CERN's involvement in PICSE), GEANT realised that more policy alignment was needed between the NRENs, as shown in Deliverable D4.1: Support for Horizon 2020 – Handbook on how GÉANT will Support Horizon 2020 Projects (http://www.geant.org/Projects/GEANT_Project_GN4-1/Documents/D4-1_Support-for-Horizon-2020-projects.pdf)</p> <p>Quote from GEANT deliverable: “The European NRENs each set their own policies independently to take account of local needs and conditions. As a consequence, there is variation in what is allowable in different European countries. Links to the AUPs of many NRENs can be found at [NRENaups]. There are currently discussions and work to develop consensus and consistency in this area.”</p>
	PICSE actively contributed to the Procurement Task Force set up by the Initiative. The Initiative could benefit from all the knowledge acquired by PICSE and of the networking opportunities set up together with the project. As an output, the Task Force proposed a procurement process and roadmap purposed to encourage more research organisations to make use of commercial cloud services.
	HNSciCloud is the concrete result of PICSE. See paragraph 1.1
	Open Standards for ICT Procurement is a 24 month project of DG CONNECT of the European Commission, meant to facilitate and promote the use of standards when procuring ICT. This Community is addressed to all those procurement officials, policy makers, strategists and architects within public organizations that care about reducing their ICT procurement costs through the employment of open procurement standards. PICSE contributed to the project by presenting its early results at their events. The content of the PICSE presentations was incorporated into the reports of the workshops.



Stakeholder	Impact
SLALOM 	PICSE helped the SLALOM project to obtain visibility among public sector organisations willing to procure cloud services. Participating to the PICSE Heidelberg event SLALOM was able to collect feedback on its model for cloud contract and to promote it towards public sector organisations. CERN and EMBL have used some of the clauses included in the SLALOM contract to draft their tender for procuring cloud services. SLALOM contract model is referenced in the PICSE Wizard and Roadmap.
SLA Ready 	PICSE helped SLA-Ready to get visibility on its SLA framework among public sector organisations willing to procure cloud services. SLA Ready framework is referenced in the PICSE Wizard and Roadmap.

Table 6: Impact on EU projects and initiatives.

1.4 Individual Paths to Exploitation

1.4.1 CERN

CERN activities mainly cover research. The results of PICSE will be exploited as follows:

- The PICSE results were used by CERN as an input to draft the two cloud tenders that CERN issued during the project lifetime and that will be exploited by CERN for the future cloud procurements;
 - Q4 2015: CERN DO-29401/IT - Infrastructure as a Service (IaaS) cloud services for Physics Simulation: Price enquiry requesting up to 2000 concurrent VMs for a period of 6 weeks confirmed interesting price points, which made a great difference in comparison with the cost of in-house provisioning.
 - Q1 2016: CERN IT-4143/IT - Infrastructure-as-a-Service cloud resources for physics data processing: CERN learnt how to better specify the roles and engagement of subcontractors, whom were asked to provision a minimum of 30% of the procurement funds out of their own procurement budgets). The tender revealed that interaction with GEANT requires a preparation phase and agreement with the NRENs across Europe. This has caused GEANT to change their policy in order to allow cross-border traffic with EU Cloud Service Providers. Networking issues were a major source of non-availability, a point which will be taken into account in the definition of the HNSciCloud tender specifications. A ramp-up period of 3-4 weeks is normal for new customers/workloads. HNSciCloud will take into account these time lags in scheduling its procurement actions.
- The knowledge acquired via PICSE both in terms of procurement of cloud services and in terms of Pre-Commercial Procurement and Public Procurement of Innovation instruments will be used by CERN to lead the HNSciCloud PCP project;
- PICSE results will be used to carry out the activities related to the EGI-Engage project where CERN is establishing the mechanisms for performing cross-border procurements by ERICs with their member states, including Pre-commercial procurement (PCP)/Public-private partnerships (PPI) and EU structural funds.

- During the PICSE project, CERN promoted the work of PICSE within the EIROforum organisations and used the knowledge acquired to produce the paper “Towards the European Open Science Cloud”¹⁴, which provides a clear vision of how the establishment of a European Open Science Cloud will enable digital science by introducing IT as a Service to the public research sector in Europe. The document has served as input to the EC Public Consultation on future research priorities in Cloud Computing, Software and Services, ahead of the H2020 ICT Work Programme 2015-16.

CERN future actions

- CERN agrees to promote the PICSE results within the HNSciCloud and the EGI-Engage projects
- CERN also commits to update the PICSE Roadmap with the outcomes of the HNSciCloud project once the project is over. The new Roadmap will contribute to the work of the Commission Expert Group set up by the Directorate-General for Research and Innovation to provide advice on the development and implementation of an open science cloud policy platform in Europe. The PICSE Roadmap will be available on the Open Science platform once it is set up and operational; i.e. in the third quarter of 2016.

1.4.2 Cloud Security Alliance

Cloud Security Alliance activities cover research, certification, training and education, standardisation and community building. The results of PICSE will be exploited as follows:

- **Research:** the results of PICSE will be used to complement research activities in the area of Governance, Risk Management and Compliance (GRC) and potentially update the cloud best practices based on the identified best practices within PICSE.
- **Certification:** CSA is the governing body of the Open Certification Framework / STAR Program, which is a multi-layer certification framework for cloud service providers. The results of PICSE will be leveraged to potentially improve the current framework and its components.
- **Training and education:** CSA runs directly, or through a network of partners, several training programs. PICSE confirmed the need for education on topic of cloud computing and CSA programs such as CCSK and CCSP can address this need.
- **Community building:** CSA is membership-based, a not-for-profit organisation, with the mission of improving trust, assurance and transparency in the market, and its participation in PICSE provided CSA with better visibility and reputation within the European Research communities, given the fact that the PICSE results are due to improve transparency in the cloud procurement.

CSA future actions

- CSA agrees to promote the PICSE results within its ongoing projects.
- The best practices from PICSE have played central role in two H2020 DS-01 proposals related to the topics of certification and assurance, based on security control frameworks.
- PICSE outcomes will be also used by CSA to improve the SLA guidelines and tools produced by H2020 SLA-Ready, where CSA contributes to the creation of a cloud SLA common reference model.

¹⁴ <https://zenodo.org/record/16001>

1.4.3 TRUST-IT Services

Trust-IT Services core business include research, consultancy, service provisioning and community building. The results of PICSE will be exploited as follows:

- **Research:** the results of PICSE will be extensively used in the HNSciCloud project of which Trust-IT is a partner. In addition they will be used to complement research activities in the area of promoting cloud computing uptake for public sector organisations (CloudWATCH2), in the area of cloud SLA (SLA-Ready) and security & privacy investigation (CLARUS).
- **Consultancy:** the experience gained within the PICSE project will be useful for Trust-IT to extend its consultancy services including expertise on PCP and PPI.
- **Community building:** PICSE helped Trust-IT to expand its network of contacts that can be exploited in the future to set up new business for the company.
- **Service provisioning:** the PICSE website and the PICSE Wizard developed by Trust-IT have contributed to increase the Trust-IT portfolio. The promotion of the website and the tool will increase Trust-IT reputation as a service provider. The ownership of the url www.picse.eu is hosted at Trust-IT Services which commits to retain the URL for the following three years.

Trust-IT future actions

- Trust-IT agrees to maintain a continuous collaboration of half a day's personnel resource for twice a month for the following three years to maintain the web platform alive and update it with news coming from HNSciCloud.
- Trust-IT will promote through the CloudWATCH2 project the PICSE Wizard as well as the PICSE case studies and best practices.

2. Communication and Dissemination Objectives

The overall objectives of PICSE communication and dissemination activities are grounded in the project's core value of establishing a European Procurers' Platform capable of raising the level of understanding on issues related to the procurement of cloud services. The objectives and the strategy of the entire PICSE Communication and Dissemination were defined at the very beginning of the project and included in the MS1 PICSE Communication Plan delivered on November 2014 [1].

This document summarizes all the activities performed to achieve each objective and the impact.

3. Objectives towards impact

This section of the document summarizes the main outcomes and impact of all the communication and dissemination activities in reference to the objectives set in the Communication Plan.

- **Objective 1: Stakeholder identification and engagement** – Mobilization and engagement of target

Main outcomes & impact:

Over 25 external experts voluntarily contributed to the PICSE Roadmap [2], case studies [3], and best practices [4]

Thanks to the networking activities performed by the partners (the consortium invested great effort in **co/organising 7 PICSE workshops** and in presenting PICSE to over **25 external events** - See Paragraph 4.4) and by the PICSE Task Force Members, thanks to the promotional activities and to the establishment of **37 key synergies**, a multiplier effect took place by collecting the interest of 26 external experts who voluntarily contributed to shape the PICSE major outcomes. This pool of experts includes representatives of public research sector organisations, cloud service providers, policy makers, governments, libraries, international organisations and consultancy that correspond to the PICSE target stakeholders identified in the PICSE Communication Plan [1].



Figure 2: Some of the organisations of the experts who actively contributed to the PICSE Roadmap, case studies and best practices.

stakeholders: public research organizations (mainly all the actors involved in the procurement process), libraries, procurement specialists (in particular those dealing with the procurement of cloud services), cloud service providers, local government associations and procurement departments, initiatives working in the field of PCP / PPI, policy makers, funding agencies, public sector decision makers, SMEs & the private sector, general public;

Over 300 relevant stakeholders engaged through the PICSE events and surveys

PICSE co-organised **7 major workshops** during its project lifetime. The choice of co-organising workshops in conjunction with the Helix Nebula Initiative events and other projects/initiatives was successful as it allowed PICSE to easily reach its target stakeholders. These events were not only a good way to disseminate the PICSE results but also an excellent means to **collect strategic feedback**. Participants to these events also became contributors to the PICSE Roadmap, cases studies and best practices.

Over 70 early cloud adopters educated through the PICSE Wizard

The overarching objective of PICSE was **to establish a European procurers' platform capable to raise the issues surrounding procurement of cloud services**. To do this PICSE set up an easy to use tool, the PICSE wizard, capable of guiding public research sector organisations through the cloud procurement process and of providing tips and recommendations related to how to procure cloud services. At the end of the project more than 70 individuals with little knowledge of cloud services have used the Wizard.

Engagement of the most relevant policy makers

Engagement efforts also at policy level were made through the invitation of key European Commission representatives to PICSE workshops. **The main objective of these workshops was to raise awareness on the important role that cloud procurement can play in speeding up the cloud adoption and on how the PICSE results can move forward a Digital Single Market**. The workshops brought together representatives from the Commission from **DG Connect, DG Translation, JRC and DG DIGIT**. Representatives of DG DIGIT and DG Translation contributed to the PICSE cases studies. Representatives of **DG Connect, JRC and DG DIGIT** provided valuable feedback to the PICSE Roadmap.



Figure 3: Some interactions with policy makers.

- **Objective 2 Establishing strategic alliances** - leveraging partner networks and strategic alliances in Europe and globally

Reinforcement of the synergy with the major research sector organisations

During the project lifetime, PICSE was able to engage the major European research sector organisations in Europe (ESA; EMBL, DESY, KIT, etc) supporting them in understanding what procurement of cloud services mean. These organisations were invited to participate to the PICSE workshops and to contribute to shape its major outputs. **As a result, 10 research sector organisations have joined together, building the HNSciCloud Pre-Commercial Procurement project aimed at procuring innovative cloud services for the science sector.**

Consolidated synergies with 37 international initiatives and projects operating in the cloud procurement sector and providing cloud services for the public sector

On top of the 24 collaborations established with the organisations that actively contributed to the Roadmap, case studies and best practices (showcased in Figure 1), PICSE established an extra 13 major collaborations with international initiatives and projects. Each collaboration had different purposes: The Helix Nebula Initiative was **the perfect forum to engage public research sector organisations and cloud service providers** collecting their feedback on the cloud procurement process and promoting the PICSE results; liaisons with CLIPS, Cloud for Europe and CloudDICTU were fundamental to collect **feedback on how public administrations and governments** are dealing with procurement of cloud services; Cloud 28+ and the European CIO Association were important to **reach the cloud service providers world**; interactions with e-IRG were important to reach policy makers while liaisons with EGI and the Research Data Alliance were key to reach the science sector at large.

In addition PICSE continuously exchanged knowledge with some EU funded projects (CloudWATCH2, Open Standard for ICT Procurement, SLA Ready and SLALOM). Early achievements of these projects helped shaping the PICSE Roadmap.

- **Objective 3: Timely communication and promotion of the PICSE main outcomes and of the opportunities offered by PCP/PPI actions** – Set up of an online repository of information, the European Procurers' Platform (www.picse.eu), supporting the networking of procurers, promoting the cloud services market and facilitating the demand & supply side dialogue;

Main outcomes & impact

PICSE.eu as a knowledge hub: Sharing the lessons learnt

54 news pieces, 13 case studies, 7 reports, over 20 presentations, 3 press releases, 35 events, 3 newsletters, 1 guide to how to procure cloud services, 20 pieces of content dedicated to procurement tips and tricks, for a total amount of **over 150 pieces of content produced during the project lifetime and published on the PICSE website (picse.eu). The portal will be maintained for the next three years by Trust-IT Services and can be considered the reference point for public research sector organisations to find out information about procurement of cloud services.** The responsive layout allows a clear consultation of the portal also through mobile devices.

A Partner Search Facility to speed up PCP/PPI uptake

Beside the promotional activities and the content published on the PICSE website on the Pre-Commercial Procurement/Public Procurement of Innovation instruments, in December 2014 PICSE published its Partner Search tool. The tool has served successfully as a platform to promote dialogue among parties interested in the ICT Call 8 and ICT Call 36 by giving them the opportunity to describe their needs and search for partners. The “PICSE Partner Search” was essentially the most popular page, and, over a period of three months, six submissions were collected. Thanks to these submissions three out of six organisations were contacted by interested potential partners.

PICSE providing support on cloud procurement to organisations

The PICSE work went well beyond its initial scope. Europeana requested PICSE’s advice to better understand what procuring cloud means and the PCP instruments. In addition, DG Translation asked PICSE help in analysing why the tender issued by DG RTD in 2010 has failed. This great interest shown by these stakeholders **confirmed the level of trust and credibility established by PICSE that showcased that a real need of support for this kind of topics is needed.**

- **Objective 4: Outreach & visibility of the project** – Awareness raising activities to reach the biggest audience;

Main outcomes & impact

An active huge online community

At the end of March 2016, the PICSE website counts over **600 monthly visitors**, a good number compared with the results of other EC-funded Projects in which the partners are involved (**the number has increased by 100 during the last nine months of the project proving the interest raised by the target communities**) and considering the short duration of the project (18 months) and the small consortium (only 3 partners). Twitter counts **125 Followers** (According to the 2012 report of Beevolve “Majority of Twitter users have less than 50 followers”) and overall **300 retweets and likes** have been collected which represents the 63% of all the tweets. This is impressive if we consider that according to a statistic coming from Digital Information World in 2015, about 71% of tweets are ignored and only 23% generate a reply. **LinkedIn counts 255 relevant connections.** In addition, **PICSE leveraged the Helix Nebula Initiative social networks** disseminating its results to an online community composed by 533 Twitter followers, 480 LinkedIn and 522 Facebook connections. **By analysing the online community around 1000 of target stakeholders have been reached.**



Figure 4: Some retweets & mentions.

3 press releases and 8 articles on the major international cloud computing and procurement journals



Figure 5: PICSE media channels.

- **Objective 5: Developing a clear PICSE identity** – Design and development of a PICSE branding that is easily recognisable and facilitates the understanding of the PICSE findings and potential further exploitation. The creation of a strong identity will be helpful to create promotional & dissemination material on which PICSE can leverage on to disseminate the project findings at relevant events.

Main outcomes & impact:

A well-defined project branding and identity.

The logo created at the very beginning of the project has been used to characterize all the documentation and the dissemination material ensuring PICSE messages and communication are easily attributable to the PICSE project.



Figure 6: PICSE Logo

4. Communication, Dissemination and Training Activities

Section 4 of this document reports the main activities carried out during the project lifetime. These activities have been fundamental to achieve the results described in Section 3.

The activities performed can be clustered in the following categories:

- Branding & identity;
- PICSE online presence: Website, Partner Search, Wizard & Social Networks;
- Interviews, surveys, reports and newsletters
- Events;
- Strategic Alliances;
- Press & media.

The activities were performed keeping well in mind the set of KPIs defined in the MS1 PICSE Communication Plan. KPIs are reported in paragraph 5.3 of this document.

4.1 Branding & identity

The creation of effective branding, pay-offs and takeaways for the target communities facilitate the communication of target messages and the building of a specific identity. The PICSE logo was specifically designed to recall the Helix Nebula theme, and it was used to brand the website and from there on the production of ppt templates, pop-up banners, posters, flyers, etc. The look and feel of the logo has been reflected to design a specific graphics for the PICSE website (www.picse.eu). Also the PICSE wizard (wiz.picse.eu) has adopted the same style.



Figure 7: PICSE project & Wizard Logos

The following dissemination material was produced to support all the communication and engagement activities:

- *PICSE PowerPoint Presentation Template*
- *PICSE deliverable templates*
- *1 Fact Sheet*: The fact sheet was the first piece of dissemination and communication material created at the very beginning of the project. The fact sheet was conceived for the general public and the European Commission and it includes a general overview of the project objectives and activities (www.picse.eu/publications/reports/picse-fact-sheet)
- *5 Fliers*: The first fliers were mainly used to communicate the project achievements and progress. The fliers produced during the last year were mainly focused on the promotion on the Wizard and the Roadmap (see www.picse.eu/communication-kit).



Figure 8: PICSE flier March 2016

- 3 posters: Posters were mainly used to promote the project achievements during events. Posters have been designed including the most important web links to stimulate the audience to visit the PICSE website and wizard, and including the hashtags of the events to stimulate the interaction of the participants (www.picse.eu/communication-kit).



Figure 9: PICSE Poster, February 2015

- 1 pop up banner (See www.picse.eu/communication-kit)
- 2 Case studies booklet “Procuring Cloud Services Today”
<http://www.picse.eu/publications/deliverables/procuring-cloud-services-today-report-experiences-and-lessons-learned-the> and <http://www.picse.eu/publications/reports/procuring-cloud-services-today-march-2015>



Figure 10: A screenshot of the “Procuring Cloud Services Today” Report

- 1 PICSE call to action booklet, summarizing the major actions included in the PICSE Roadmap
http://picse.eu/sites/default/files/PICSE_Call_for_action_March2016_Booklet.pdf

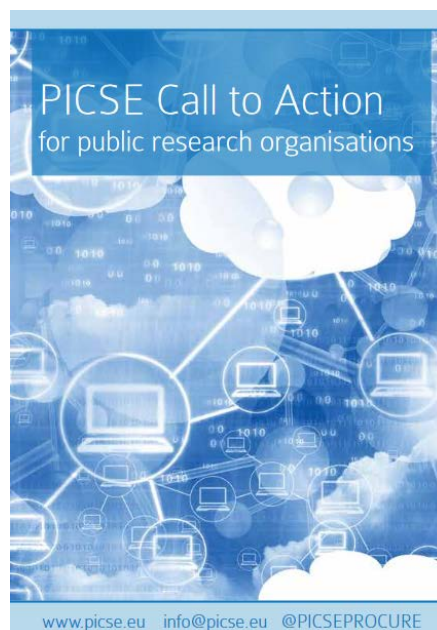


Figure 11: PICSE Call to Action

- 1 PICSE roadmap booklet (available also as an e-book)

- Give-aways: 1 PICSE Wizard sticker and 1 card designed to promote the adoption of the PICSE tool.



Figure 12: PICSE sticker



Figure 13: PICSE card

4.2 Online presence: Website, Partner Search, Wizard and Social Networks

The PICSE website, the Partner Search, the Wizard and the social networks have been key to the recruitment of relevant participants at the events and of contributors to the PICSE activities (e.g. in providing cases studies, in contributing to the PICSE Roadmap and in completing the surveys).

Outreach Metrics	Time duration	Total number	Monthly average
Website visits (monthly average)	17 months (M2-M18)	10.723	631
Procuring cloud services today downloads	9 months (M10-M18)	351	39
PICSE Roadmap (Open Consultation) (8-31 March 2016)	1 month (M18)	269	269
Partner Search views	5 months (M3-M7)	564	112
Partner Search requests	3 months (M3-M5)	6	2
PICSE Wizard page views	6 months (M13-M18)	108	18
Wizard Downloads	6 months (M13-M18)	74	12
Twitter Followers	17 months (M2-M18)	125	7
LinkedIn Connections	17 months (M2-M18)	255	15

Figure 14: PICSE web presence in numbers

4.2.1 PICSE website (www.picse.eu)

Officially launched in November 2014, the PICSE website (www.picse.eu) serves as a single access-point to learn, network and exchange information. A preliminary web site was made available on line in October 2014 and it was continuously updated and improved **both graphically and in terms of content** (over 50 news pieces have been produced during the project lifetime) during the project duration. May 2015 was an important milestone as the new graphical identity for the PICSE website was published to give the website a **more service-oriented look and feel bringing impressive results in terms of numbers of visits to the website as shown in figure 13**. The new branding and structure has been created to highlight how PICSE contributes to the digital single market and how PICSE can become the reference knowledge hub for cloud procurement for public sector (with a special eye on public research organisations).

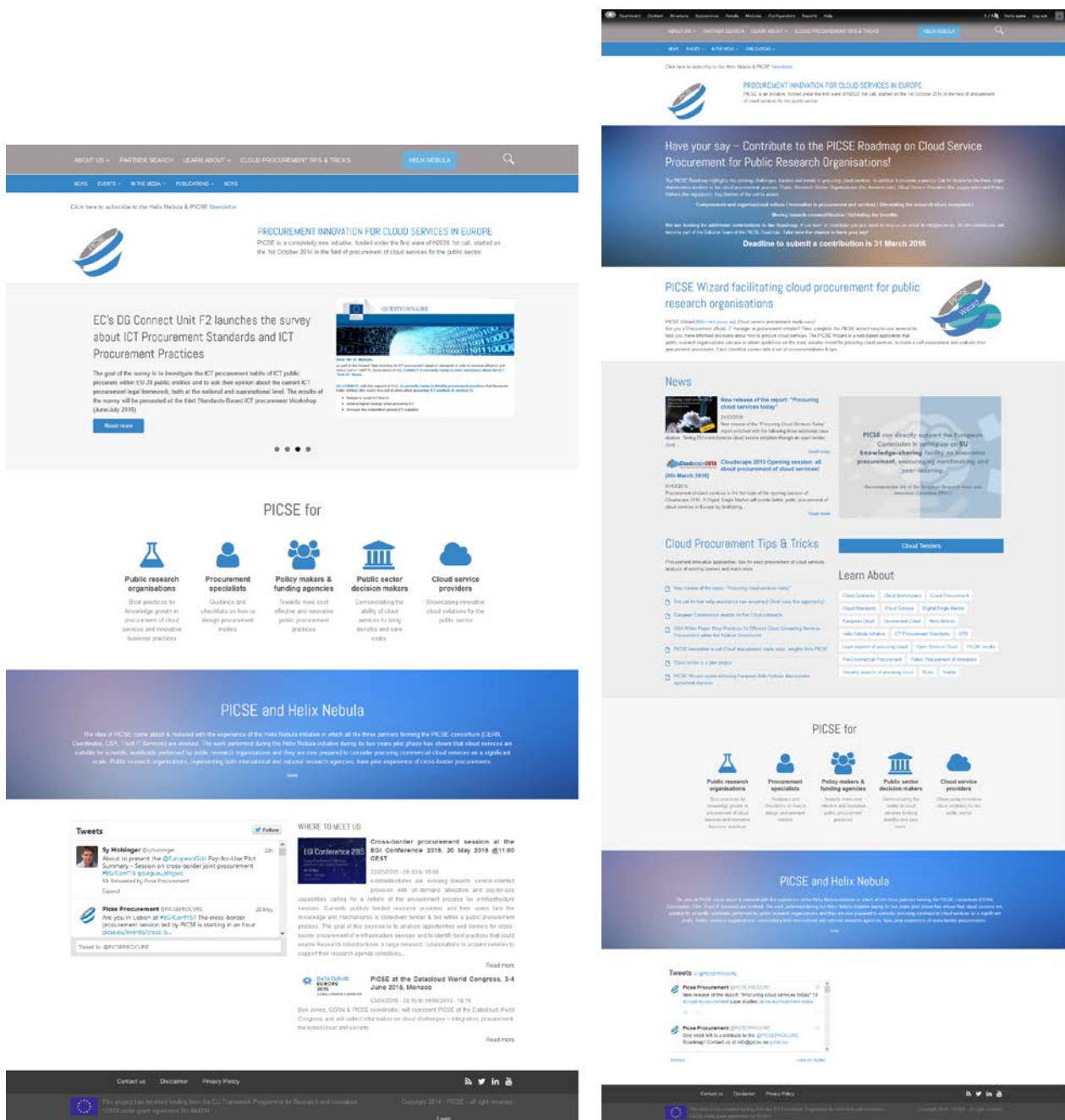


Figure 15: PICSE website www.picse.eu (October 2014 – May 2015)

Since its launch in November 2014, the PICSE online platform has averaged a number of 631 visits per month. As indicated in the graphic, the visibility of the site increased significantly after the home page revamp that coincided with the Helix Nebula & PICSE Open Day announcement. The peak of visits was reached in July 2015 when the post event material was made available and the “Procuring Cloud Services Report” has been published¹⁵. It is also clear from Figure 13 that the average number of visits from month 10 to 18 has increased by 100 if compared with M1-M9 (Overall 579 sessions versus 676 sessions from M10-

¹⁵ <http://picse.eu/news/new-report-experiences-and-lessons-learned-the-public-sector-procuring-cloud-services-today>

M18) highlighting the increased interests shown on the projects outcomes. It has to be noted that the PICSE Roadmap final document was made available only by mid April 2016 and therefore the visits related to the Roadmap are not part of the graph. Only the announcement and the public consultation of the Roadmap collected more than 260 clicks in one month.

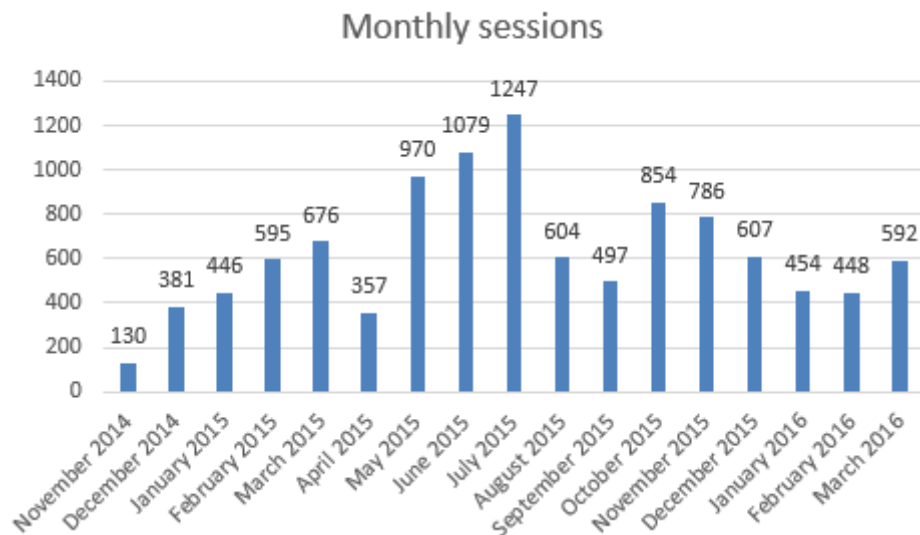


Figure 16: PICSE monthly sessions (November 2014 – March 2016).

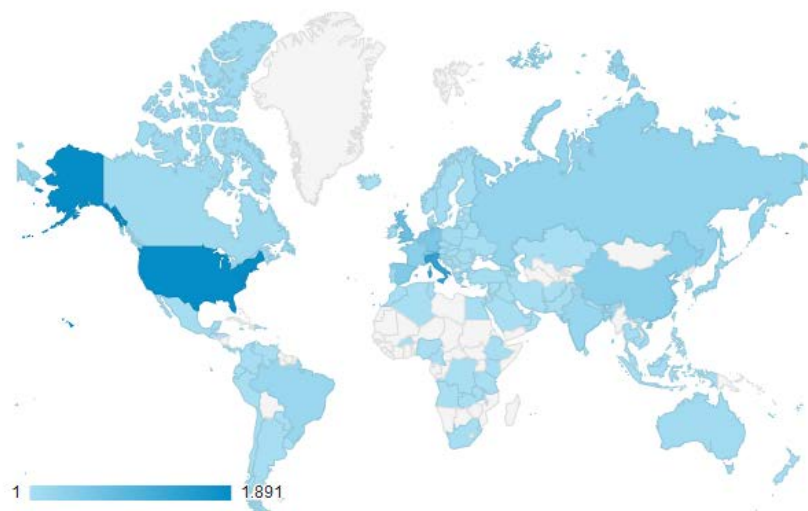


Figure 17: Geographical breakdown of visitors (November 2014 – March 2016).

United States comes out as the top country in terms of visits which sounds unusual considering that the outreach activities targeted mainly Europe. This however is justified by the great attention that the US are paying in how to meet the big data requirements of public research institutes and at what Europe is doing especially with the launch of the Digital Single Market strategy as highlighted by the articles below.



Figure 18: Excerpt from Nature journal.

The top ten most viewed pages are shown in Figure 16. Besides showcasing the interest of the PICSE community in the PICSE case studies and Roadmap, numbers confirm the great interest in the new PCP/PPI instruments.

Most viewed pages		
#	Webpage	Visits
1	PCP vs PPI	789
2	Partner Search	564
3	Who is involved	401
4	Procuring Cloud Services Today	351
5	News	294
6	Deliverables	274
7	Roadmap	269
8	About	264
9	Task Force	264
10	PCP	236

Figure 19: Most viewed pages (November 2014 – March 2016).

4.2.2 PICSE Partner Search

In addition to the PICSE website, great visibility to the PICSE project was given by the Partner Search tool¹⁶ implemented by the project. The PICSE Partner Search is a facility that was launched in December 2014 and remained operational until April 2015 to support all the organisations interested in applying to the ICT Call 8 - *Boosting public sector productivity and innovation through cloud computing services* and the ICT Call 36 *Pre-commercial procurement open to all areas of public interest requiring new ICT solutions*. The tool has served successfully as a platform to promote dialogue among parties interested in the above mentioned calls by giving them the opportunity to describe their needs and search for partners. As indicated at the beginning of the paragraph, the “PICSE Partner Search” was essentially the most popular page, and, over a period of three

¹⁶ <http://picse.eu/partner-search>

months, six submissions were collected. Thanks to these submissions three out of six organisations were contacted by interested potential partners.

A Cloud Marketplace for Europe

Call interested in:

ICT 8b - Public procurement of innovative cloud computing solutions (PPI)

Provide an overview of your proposal idea here.:

Having successfully commissioned and built the UK's CloudStore (now Digital Marketplace) I'd like to create a Cloud Marketplace for Europe. The Marketplace will include: IaaS, PaaS, SaaS, Cloud Consultancy Services, Agile / Software Development Services, Security Services, Internet of Things.

What partners are you looking for?:

We require Partner(s) to partly fund the development of the Marketplace using Open Source solutions.

Country: United Kingdom

Organisation: What's Your Thing Ltd

Organisation Type: Cloud Service Provider

Smart Barcelona is looking for partners for ICT8a

Call interested in:

ICT 8a - Pre-commercial procurement for public sector cloud computing services (PCP)

Provide an overview of your proposal idea here.:

We are able to provide through the Government of Catalonia ICT services to 900 municipalities and we are willing to participate in a current on going proposal, and also Municipality of Barcelona

What partners are you looking for?:

Other countries interested in PCP ICT-08 to adopt our use case.

Country: Spain

Organisation: Smart Barcelona

Datanut Sciences (London) Limited is building a Data Science Framework for use on their Big Data Analytics Platform

Call interested in:

ICT 8a - Pre-commercial procurement for public sector cloud computing services (PCP)

Provide an overview of your proposal idea here.:

Datanut Sciences (London) Limited is building a Data Science Framework for use on their Big Data Analytics Platform. The platform will offer a self service data discovery analytics for insight and data discovery, with additional consultancy.

What partners are you looking for?:

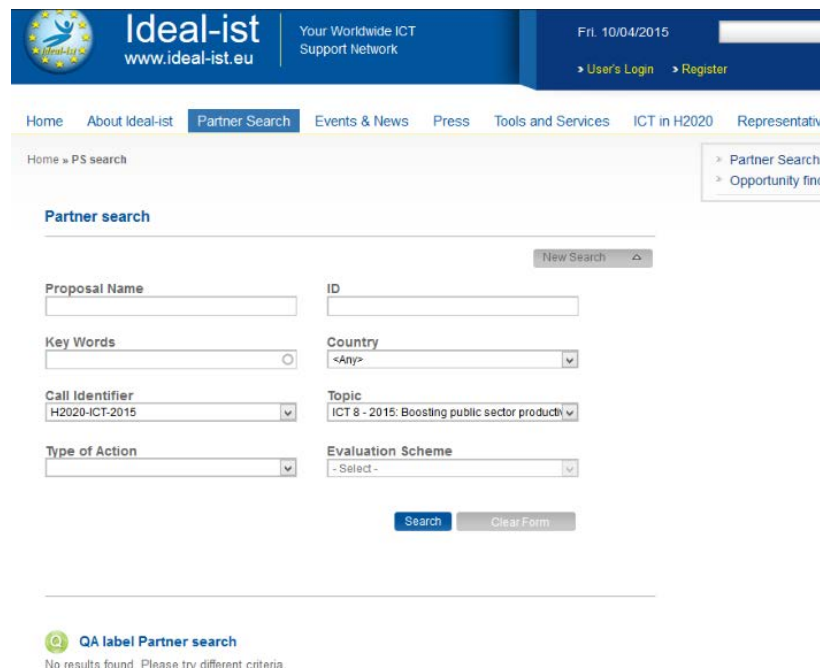
Looking for organisations who are keen to 'alpha/beta' test the Big Data Analytics Platform at initial lower costs.

Country: United Kingdom

Organisation: Datanut Sciences (London) & Birkbeck, University of London

Figure 20: Examples of submissions received.

This can be considered a successful result if compared with the main competitor platform (the Ideal-ist platform) that in the same period did not collect any requests. This also proved that a Partner Search facility set up on a targeted channel works better.



The screenshot shows the Ideal-ist website interface. At the top, there is a navigation bar with the logo and the text "Your Worldwide ICT Support Network". Below this is a secondary navigation bar with links like "Home", "About Ideal-ist", "Partner Search", "Events & News", "Press", "Tools and Services", "ICT in H2020", and "Representative". The main content area is titled "Partner search" and contains a form with the following fields:

- Proposal Name (text input)
- ID (text input)
- Key Words (text input with a search icon)
- Country (dropdown menu, currently showing "<Any>")
- Call Identifier (dropdown menu, currently showing "H2020-ICT-2015")
- Topic (dropdown menu, currently showing "ICT 8 - 2015: Boosting public sector productivity")
- Type of Action (dropdown menu)
- Evaluation Scheme (dropdown menu, currently showing "- Select -")

At the bottom of the form, there are "Search" and "Clear Form" buttons. Below the form, a message states: "No results found. Please try different criteria."

Figure 21: Snapshot of the Idea-list webpage.

4.2.3 PICSE Wizard (wiz.picse.eu)

In September 2015 the PICSE Wizard was published at wiz.picse.eu. The wizard is a web-based application that public research organisations can use to obtain **guidelines on the most suitable model for procuring cloud services**, to **make a self-assessment and evaluate their procurement procedures**. Each checklist comes with a set of recommendations & tips.

The wizard is composed of 2 different tools, which help **IT managers & procurers**, in charge of the procurement of cloud services in public research organisations, make a self-assessment and evaluate their procurement procedures:

- The cloud procurement model:** this is conceived mainly for procurers & IT managers from research institutes that have little or no experience of cloud procurement. On a basis of 8 questions, the tool suggests the most suitable cloud procurement model.
- The self-assessment tool,** which is designed for procurers & IT managers from research organisations in general. On a basis of 5 measurement areas, it helps procurers identify the existing procurement methods they use.

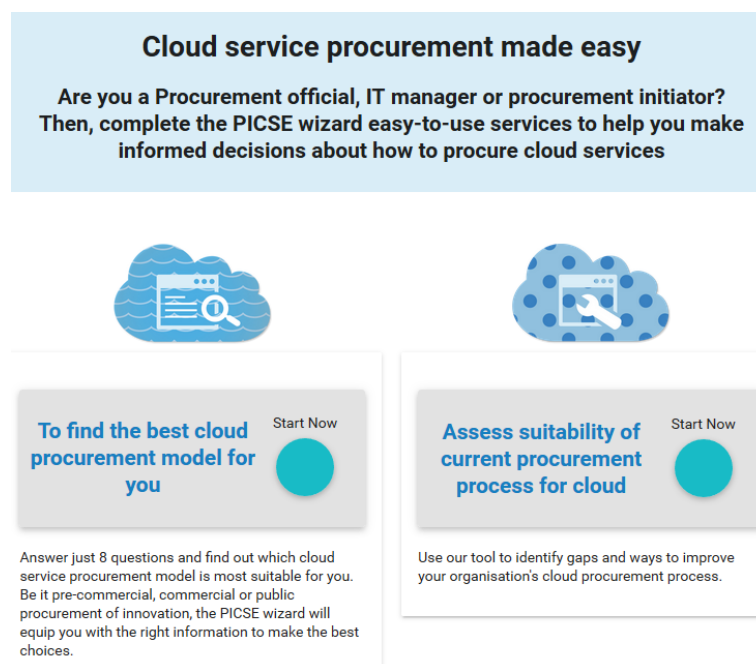


Figure 22: PICSE Wizard overview

The PICSE Wizard was first published in the last week of September 2015. The Wizard was put together by the PICSE consortium members exploiting the results of the D2.1 Procurement Research Model and the insights coming out from the case studies consultation. In this consultation almost all the research organisations interviewed expressed the need for an easy to use instrument to make their cloud procurement easier. Before its official launch the PICSE tool was validated by the PICSE Task Force members and by the cloud service providers and representatives of public research organisations of the 6th Helix Nebula General Assembly and revised in different iterations during the Helix Nebula Procurement Task Force meetings.

The PICSE Wizard was promoted during the project lifetime through the following activities:

- sending individual messages to LinkedIn members of the PICSE and Helix Nebula accounts;
- publications of news on the PICSE website;
- promotion of the Wizard via the Research Data Alliance communities;
- article on Science Node <http://picse.eu/media/helix-in-the-press/providing-better-public-services-through-cloud-computing-article-science>
- PICSE newsletter;
- Promotion of the Wizard at events such as the Open ICT Standards for Public Procurement - Fostering Interoperability event that took place at the European Commission premises on November 2015 where a presentation dedicated to the Wizard was made.

Overall 78 downloads of the reports made available by the Wizard have been collected, around 12 per month since its launch. The number is good as the tool targets a very specific audience, public research sector organisations willing to procure cloud services¹⁷. Considering the statistics below, it also emerged that the tool attracted organisations with very little or no experience in procurement of cloud services which was the principal aim of the tool: being a support instrument for cloud early adopters to speed up the cloud procurement.

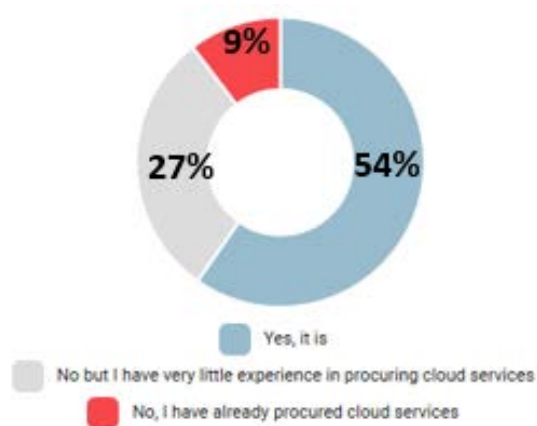


Figure 23: Cloud procurement experience of users.

4.2.4 PICSE Social Networks

The web presence of PICSE has been complemented by a series of social networks. With the Internet now integrated into nearly all aspect of everyday business use, social networking can help an initiative gain contacts, clients, and increased public awareness. This is the reason why PICSE has decided to adopt the following social networks: Twitter and LinkedIn. These social networks have been mainly exploited to raise awareness on the PICSE project, the surveys, the Wizard, the case studies and all the PICSE main results and to promote the workshops organized and attended in the reporting period. All the content on the PICSE website can be easily shared on Twitter and LinkedIn.

¹⁷ According to the 2007 report “Universities and Public Research Organisations in the ERA”, in Europe there are 600 public research laboratories

Twitter¹⁸ was the major channel used to engage stakeholders and promote the results of PICSE. At the end of the project the PICSE twitter accounts counts 451 Tweets, 125 followers and 40 Likes. The numbers are in line with the statistics¹⁹ and the KPI set at the beginning of the project keeping into consideration the short project duration and the small consortium has been exceeded. In addition it is important to consider that 90% of the Twitter followers represent the target stakeholders. This means that every tweet done has reached the right audience.

The picture below gives an idea of the breakdown of the interests of the PICSE Twitter followers that well match with the project objectives.

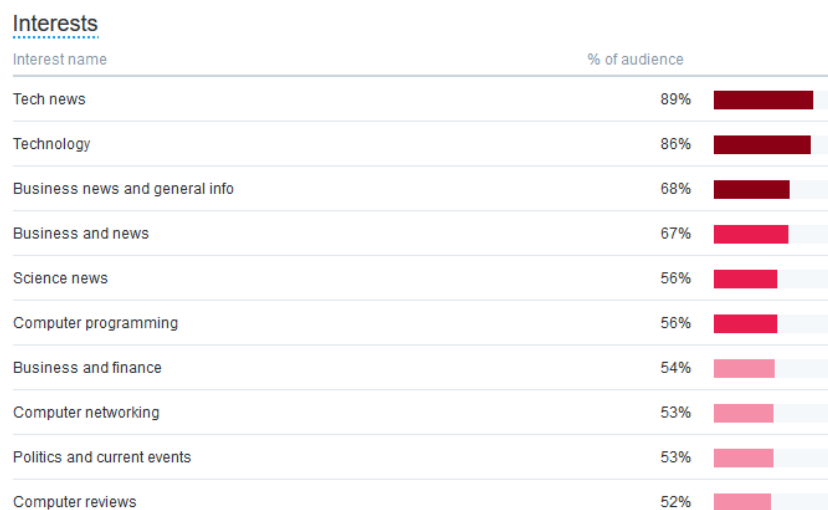


Figure 24: Twitter follower interests.

Without considering retweets of partners and task force experts over 300 retweets and likes have been collected which represents the 63% of all the tweets. This is impressive if we consider that according to a statistic coming from Digital Information World in 2015, about 71% of tweets are ignored and only 23% generate a reply²⁰.

PICSE also managed a LinkedIn²¹ account that was mainly used to promote the PICSE results, such as the publications of reports. In March 2016, PICSE counts 255 relevant connections belonging to the major PICSE stakeholder groups. For what concerns group discussion, PICSE exploited the Procurement Forum network²², a network dedicated to public procurers discussions, on which promoted the PICSE results.

¹⁸ <https://twitter.com/PICSEPROCURE>

¹⁹ According to the 2012 report of Beevolve “Majority of Twitter users have less than 50 followers”
<http://www.beevolve.com/twitter-statistics/>

²⁰ <http://www.digitalinformationworld.com/2015/01/twitter-marketing-stats-and-facts-you-should-know.html>

²¹ <https://be.linkedin.com/in/picse-procure-bb4095a7>

²² <https://procurement-forum.eu/>

In addition to the before mentioned social networks, PICSE leveraged on the Helix Nebula Initiative social networks: almost all the PICSE major news pieces have been shared with the Helix Nebula network. Table below offers an overview of the Helix Nebula community.

Social Network	Connections/Followers
Facebook	521
LinkedIn	480
Twitter	530

Table 7: Helix Nebula community.

4.3 Interviews, surveys, reports and newsletters

During the project lifetime 18 phone interviews (exceeding the initial KPI of 10) have been done and exploited to produce the Procuring Cloud Services Today²³, the PICSE Best Practices²⁴ and the PICSE Roadmap²⁵ reports. Table below shows the list of interviewees:

Organisation	Interviewee/s	Organisation Type
CERN	Bob Jones	Public Research Sector Organisation
Cloud for Europe	Linda Strick	EU PCP project
DG DIGIT,	Yves Paternoster & Philippe Merle	Funding agency
DGT	Spyridon Pilos, Alfons De Vuyst, Andreas Eisele, Dirk Depaepe	Funding agency
DICTU project	Frank van Dam	Government
ECMWF	Ricardo Corea, Oliver Gorwits	Public Research Sector Organisation
EMBL	Rupert Lueck	Public Research Sector Organisation
Europeana	Pavel Kats	Public Research Sector Organisation
FAO	Paul Whimpenny & Anton Ellenbroek	International organisation
GRNET	Alex Zaharis	Research & Technology Network
G-Cloud	Nicky Stewart	Cloud Service provider
IRSTEA	Martin Caroline	Public Research Sector Organisation
LIBER & UCL	Paul Ayris	Public Research Sector Organisation
Museo Galileo	Marco Berni	Museum
US National Health Institute	Komatsoulis George	Public Research Sector Organisation
ZBW, German National Library of Economics	Guido Scherp	Public Research Sector Organisation
UMEA	Soren Berglund	University

Table 8: List of interviewees

Interviews were really helpful to collect different perspectives on the challenges surrounding the procurement of cloud services²⁶ and to understand the procurement practices in place in different organisations. In addition, the engagement of interviewees was key to spread the news on PICSE to different

²³ <http://www.picse.eu/news/new-release-of-the-report-procuring-cloud-services-today>

²⁴ <http://www.picse.eu/publications/deliverables/d32-procurement-best-practices-report>

²⁵ <http://www.picse.eu/roadmap>

²⁶ See the interview templates reported in D2.1

communities and to stimulate their interests in the outcomes of the project. The interviewees were recruited by exploiting the partner network, by presenting PICSE to relevant events and by establishing liaisons with other projects. All these experts voluntarily contributed to the PICSE project. The same applies to all the contributors that positively replied to the Roadmap consultation.

Overall 7 requests from external contributions have been received. They include representatives from cloud service providers, public research organisations and policy makers, that is the three main targets of the audience and of the project at large. Table below reports the list of contributors to the Roadmap.

Name	Organisation	Organisation Type	Type of contribution
James Newson	Sansomit	Cloud Service Provider	External contributor
Jurry de la Mar	T-System	Cloud Service Provider	External contributor
Carmela Asero	European Commission	Policy Maker	Task Force chair
Linda Strick	FraunhoferFokus	Public Research Sector Organisation	Task Force member
Martin Canning	IDC	IT analyst and consultancy	Task Force member
Frank van Dam	NL ministry	Government	Task Force member
James Mitchell	Strategic Blue	Consultancy	Task Force member
Nicky Stewart	Skyscapecloud	Cloud Service Provider	External contributor
Mary Barlow	EMBL-EBI	Public Research Sector Organisation	External contributor
Mark Smitham	European Commission	Policy Maker	External contributor
Mick Symonds	Atos	Cloud Service Provider	External contributor
Stuart Freshwater	ECMWF	Public Research Sector Organisation	External contributor

Table 9: List of Roadmap contributors.

In addition to interviews, at the very beginning of the project 60 stakeholders answered to the two surveys published by the project to collect information about procurement barriers. The outcomes of the surveys are available in the report D3.1 Procurement Barriers Report²⁷.

The Surveys were published on the PICSE website and extensively promoted via the different PICSE social networks.

The major results of the PICSE project have been summarized into 7 reports described in the following table.

Name	Description
Procurement Model (MS1) ²⁸	This document provides a state of the art analysis of how public research organizations procure ICT services and identifies the challenges when the procurement is focused on cloud services. The document also reports what public sector organizations are doing to procure cloud services and how cloud service providers are responding to the demand -side. Finally it

²⁷ http://www.picse.eu/sites/default/files/D3.1_Procurement_Barriers_Report_V12_28.05.2015_0.pdf

²⁸ <http://www.picse.eu/publications/deliverables/ms2-procurement-model-interim-release>

Name	Description
	presents the basic structure on which the PICSE procurement model for cloud services will build on.
Procurement Barriers Report (D3.1)²⁹	The purpose of this document is to identify a comprehensive inventory of known barriers to procurement of cloud services for the research community and the public sector. This report will be used as an input for the follow-on PICSE deliverable on Procurement Good Practices.
Research Procurement Model (D2.1)³⁰	This document provides a state of the art analysis of how public research organisations procure ICT services and identifies the challenges of procuring cloud services. The document presents different models to procure cloud services suitable for public research organisations and provides procurement checklists that can be used by IT managers and procurers working in the public sector.
Procuring Cloud Services Today³¹	This document describes the experience of thirteen public sector organisations across Europe who have carried out a process to procure cloud services, or are considering doing so. The experiences vary in terms of success and offer insights into how the procurement of cloud services is impacting their current processes. The outputs of this document have fed into the PICSE Roadmap on Cloud Service Procurement for public research organisations.
Procurement Best Practices Report³²	This report includes a collection of procurement good practices in the public sector, both in Research and Public Administration, which cover real life examples in Europe as well as outside the EEA (e.g. in the USA). A comparison between procurement practices in the public and private sector as well a description of how current practices can overcome barriers and the identification of unaddressed challenges.
Call to Action³³	This report summarizes the call to action included in the PICSE Roadmap.
PICSE Roadmap³⁴	The PICSE Roadmap highlights the existing challenges, barriers and trends in procuring cloud services. In addition it presents a precise Call for Action for the three major stakeholders involved in the cloud procurement process: Public Research Sector Organisations (the demand-side), Cloud Service Providers (the supply-side) and Policy Makers (the regulators)

Table 10: List of PICSE Reports.

All the PICSE reports have been promoted on the PICSE website, social networks and also via the PICSE newsletter. Overall 2 newsletters have been produced during the project in conjunction with the major milestones:

- “Towards a European Open Science Cloud: next week's Open Day & insights on main barriers in procuring cloud services”, 19 June 2015, promoting the Helix Nebula Initiative & PICSE June 2015 event and the Procurement Barriers Report
- “Cloud procurement made easy: insights from PICSE”, 30 November 2015, promoting the PICSE Wizard, the Procuring Cloud Services Today Report and the Research Procurement Model.

²⁹ <http://www.picse.eu/publications/deliverables/d31-procurement-barriers-report>

³⁰ <http://www.picse.eu/publications/deliverables/d-21-research-procurement-model>

³¹ <http://www.picse.eu/news/new-release-of-the-report-procuring-cloud-services-today>

³² <http://www.picse.eu/publications/deliverables/d32-procurement-best-practices-report>

³³ http://picse.eu/sites/default/files/PICSE_Call_for_action_March2016_Booklet.pdf

³⁴ <http://www.picse.eu/roadmap>

A third newsletter promoting the PICSE Roadmap will be sent in April 2016, as the final version of the Roadmap is published.

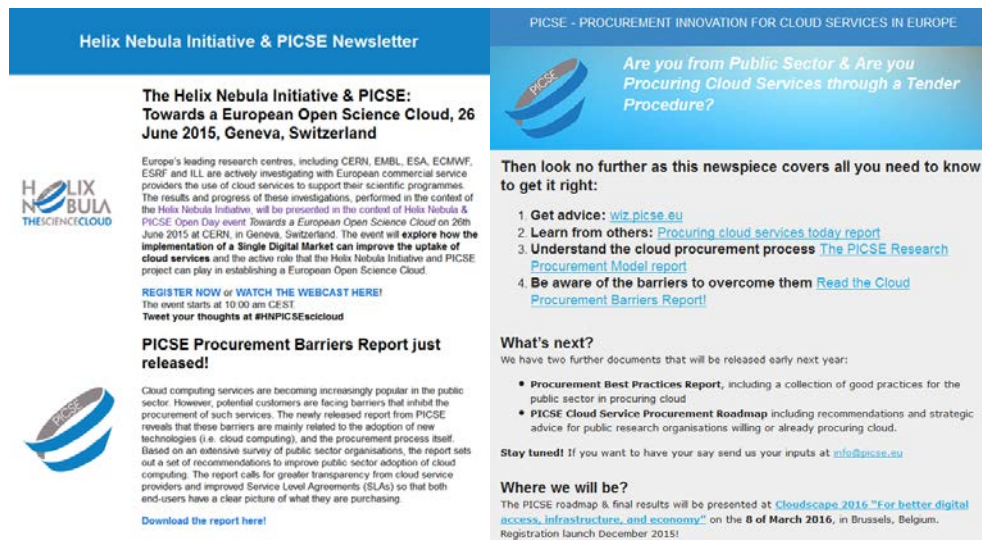


Figure 25: PICSE newsletter screenshots

The statistics of the PICSE newsletter are really impressive (considering that the opening rate of mail marketing campaigns is around the 5%): the first newsletter counted around 229 readers (23% of the contact db) to achieve the 33% for the second newsletter. All the people who read the newsletter go back to the content at least 2 or 3 times proving that the content is of interest for the recipient.

The newsletters were sent to a recipient of over 960 contacts. Trust-IT developed and maintained a dissemination database composed by contacts identified through desk research, meetings, conferences, press activities, etc. and contacts coming from spontaneous registration to the PICSE newsletter or from the social networks. The database was set up starting from the contacts project partners provided according to defined categories that differentiate between various types of organisations targeted and different audiences. Contacts were incremented thanks to partner efforts, through social networks, participation to events, organisation of events, synergies and strategic alliances as well as through the community building activities.

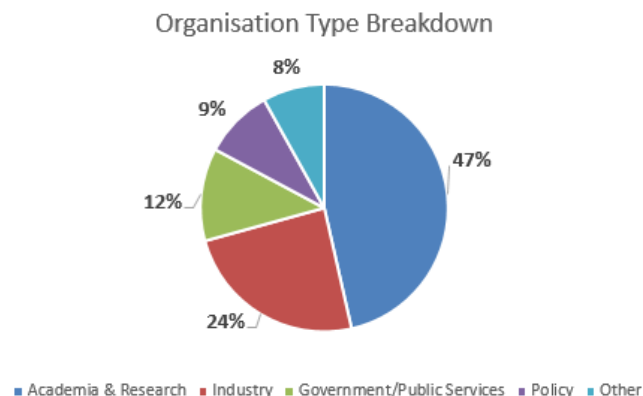


Figure 26: Organisation type breakdown.

As shown in Figure 26, around the 50% of the database contacts are from the Academia and Research, the 24% from industry, mainly cloud service providers, 12% from Government and the 9% from policy, reflecting the main target audiences of the PICSE communication strategies

4.4 Events

At proposal time, only the organisation of one PICSE final event and the participation to 5 events was foreseen. However, since the start of the project it was clear that an intensive consultation with the stakeholders was needed to engage them and to make them aware of the results of the project. Therefore, during the project a higher number of workshops were co-organised by PICSE and an even higher number of events were attended by the PICSE partners to spread the news about PICSE and engage contributors.

To keep the costs in line with the original plan, the strategy of the project was to co-organise workshops together with other projects and initiatives so to save costs and maximize results.

Overall 7 major workshops have been co-organised by PICSE:

CO-ORGANISED WORKSHOPS	
PICSE final event held in conjunction with the HNSciCloud Open Market Consultation, 17 March 2016, Geneva, Switzerland	<p>Around 40 representatives from public research organisations and European cloud service providers attended the event. Sara Garavelli, Trust-IT Services, presented the PICSE results and the Roadmap call to action. The event was useful to collect live feedback on the Roadmap Call for Action and to recruit 2 contributors that participated to the editing of the Roadmap. The event was webcast.</p> <p>The video of the event is available here http://www.picse.eu/media/interviews-and-articles/picse-procurement-cloud-services-innovation-in-europe-results</p>
Procurement session “Towards better public procurement of cloud services in Europe” at Cloudscape2016, 8 March 2016, Brussels, Belgium	<p>150 representatives from the cloud & IoT sectors attended the “Towards better public procurement of cloud services in Europe” session at Cloudscape 2016. Bob Jones, CERN, chaired the session supported by an introductory talk given by Dirk Van Rooy, Head of Sector European Cloud Partnership, European Commission.</p> <p>Main topics discussed: Challenges in procuring cloud services; Best practices in Europe: UK G-Cloud and others; How joint procurement can speed up adoption and Call for action for policy makers and service providers in relation to DSM Action #16.</p> <p>The discussion was animated by 5 renowned panellists: Nicky Stewart, Skyscape Cloud, UK G-Cloud provider; Tony Richards, CTO & Cloud Security Advisor for HM Government, UK; Linda Strick, Business Developer, Fraunhofer FOKUS; Marc-Elia Bégin, Co-founder, SixSq and David Bicket, Cloud Industry Forum.</p> <p>The feedback collected in the session contributed to the PICSE Roadmap. In addition, one contributor to the Roadmap was recruited at the event.</p>
PICSE-SLALOM Workshop, 6 March 2016, Brussels, Belgium	<p>This workshop, co-organised with the SLALOM project³⁵ was the occasion for PICSE to present to public procurers and policy makers the advances made in the cloud procurement and contract field and to establish a set of call for actions for the next 5 years. 5 representatives of the European Commission (DG CNECT, DG DIGIT) attended the workshop providing valuable feedback for the Roadmap. Mark Smitham, EC, attended the workshop becoming one of the contributors to the PICSE Roadmap.</p>

³⁵ www.slalom-project.eu

Helix Nebula - the Science Cloud | 7th General Assembly Open Day Event: Towards the European Open Science Cloud, 20 January 2016, Heidelberg, Germany

Co-organised by PICSE and the Helix Nebula Initiative, the event saw over 100 representatives coming together from some of the most renowned international research organisations, e-infrastructures, cloud projects, cloud service providers from both the public and private sector, IT advisory bodies as well as funding agencies. The main objective for the open day was to build consensus on a model for the European Open Science Cloud that could be widely accepted across Europe's flagship research infrastructures, their public and private sector user communities and value chains, the long tail of science, service providers and funding agencies. PICSE contributed to the Open Day by presenting cloud procurement best practices and its upcoming Roadmap on Cloud Service Procurement for public research organisations.

In conjunction with this event a meeting of the Helix Nebula Procurement Task Force, of which the PICSE partners are part of, was organised. IT was the perfect place to discuss the PICSE early findings. Mary Barlow, EMBL procurer, was very interested in the PICSE results thus becoming a PICSE Roadmap contributor. The full event was streamed online.

ICT 2015 Networking Session Fast forward to the digital single market: procurement of cloud services, 21 October 2015, Lisbon, Portugal

PICSE organised a networking session at the ICT2015 event. The session was attended by over 30 representatives of European public sector organisations, including governments, funding agencies, industry and public research organisations. The session was chaired by Daniele Catteddu, Cloud Security Alliance.

6 panellists contributed to the discussion: Carmela Asero, Policy Analyst, European Commission Joint Research Centre and PICSE Task Force Chair; Bernd Becker, EuroCloud President ; Daniel Field, Deputy Head of IT Sector Research and Innovation Group, Atos Spain SA & SLALOM project; Roberto Di Bernardo, Research & Development Laboratory, Engineering Ingegneria Informatica & CLIPS project; Giovanna Galasso, Senior Manager, PricewaterhouseCoopers Advisory SpA and James Mitchell, Chief Executive Officer, Strategic Blue & PICSE Task Force member

Topics discussed:

- Best practices for public research organisations and governments,
- Open issues (e.g. how to write public tenders, and engage suppliers, etc.) and skills needed
- Tools & standards that can facilitate the procurement of cloud services
- Innovative ways of purchasing cloud services
- The European Open Science Cloud launched by the EC

Key objectives of the session were:

- Identify common issues and understand how others have overcome them,
- Understand how/if innovative procurement instruments can improve procurement processes
- Define priorities to support the definition of a preliminary Roadmap to Procurement of cloud services which responds directly to the European Council's call for a single market in cloud computing.

The outputs of the discussion contributed to shape the PICSE roadmap and the report "Procuring Cloud Services Today". The session was an effective way to consolidate synergies with the CLIPS project³⁶ and the Open Standards for ICT Procurement initiative³⁷.

The Helix Nebula Initiative & PICSE workshop: Towards a European Open Science Cloud, 26 June

Over 80 experts from European research organisations, and public & private commercial cloud service providers gathered at CERN on 26 June 2015 for the Helix Nebula Initiative (HNI) and PICSE Open Day event, which demonstrated why and how Europe can enable digital science by introducing IT as a Service for its public research community. A presentation was given by Trust-IT, during which the PICSE Wizard application was introduced to the public. The Open Day event organised by the Helix Nebula consortium

³⁶ <http://www.clips-project.eu/>

³⁷ https://joinup.ec.europa.eu/community/open_standards_ict/event/dg-connect-workshop-open-ict-standards-public-procurement-fosteri

2015, Switzerland	Geneva,	was streamed live. The webcast reached a maximum of 71 single IP connections, among which 62% came from EU countries, 32% from Switzerland (of which 96% from CERN) and 6% from non-EU countries (India, Turkey, Taiwan).
		The event was useful to collect feedback on the PICSE Wizard and make its content validated by IT managers & procurement experts.
Enabling a Dynamic Cloud Ecosystem, 26 November 2014, Frascati, Italy		Over 50 managers, cloud providers, policy makers, procurers and researchers dealing with the adoption of cloud computing gathered for the workshop "Enabling a Dynamic Cloud Ecosystem". The event was hosted by the European Space Agency, ESA ESRIN in Frascati, Italy and organized by the Helix Nebula Initiative and PICSE.
		The event was the first occasion to raise awareness about the PICSE project objectives and to engage four interviewees. Two of these interviews was then transformed in two PICSE case studies.

Table 11: PICSE co-organised workshops.

In addition to the above-mentioned workshops, PICSE organised the 5 following webinars:

WEBINARS	
PICSE final event held in conjunction with the HNSciCloud Open Market Consultation, 17 March 2016, Geneva, Switzerland	The full event was streamed online.
Helix Nebula - the Science Cloud 7th General Assembly Open Day Event: Towards the European Open Science Cloud, 20 January 2016, Heidelberg, Germany	The full event was streamed online.
The Helix Nebula Initiative & PICSE workshop: Towards a European Open Science Cloud, 26 June 2015, Geneva, Switzerland	The full event was streamed online.
Legal aspects of Joint Pre-Commercial Procurements: from modelling to implementation (CERN, 25.02.2015)	A public lecture on Public Procurement was given at the CERN IT Amphitheatre on 25 February, 2015. The objective of this webinar, given by Trento Rise, was to review strategies and tips in order to help procurers implement and publish a Joint Pre-Commercial Procurement tender. The event was streamed online from 14.00 to 15.00 with 70 IP connections, 57% of which from EU countries, 34% from Switzerland (of which 97% from CERN) and 8% from non-EU countries (Russia, Canada, Taiwan, Brazil).
Implementation of IaaS open marketplace (CERN, 04.12.2014)	Dr. Johannes Watzl and Daniel Hagemeier (Deutsche Börse Cloud Exchange AG) presented the exchange market that DCBE has launched for IaaS cloud resources. The presentation focused on the general concept, the services and the definition of the tradable products, as well as the key elements of neutrality and transparency. The event was streamed online from 11.00 to

12.00 with a total of 52 connections, 65% of which came from EU countries and 35% from Switzerland (of which 95% from CERN)

Table 12: PICSE webinars.

As mentioned at the beginning of the paragraph, engaging different stakeholders was key to produce the results of the project and to achieve the impact reported in chapter 2. This was possible also thanks to effort spent by partners in presenting PICSE to 26 external events. See 5.2.

4.5 Strategic Alliances

The PICSE task force and the partner networks, together with all the before mentioned communication and dissemination activities, played a fundamental role in forging strategic alliances with relevant communities and initiatives. Strategic alliances brought multiple benefits to PICSE outreach, ranging from increasing visibility to knowledge exchange on policy and technological aspects related to the procurement of cloud services.

The figure below shows the synergies established by PICSE with the organisations that actively contributed to the PICSE Roadmap, case studies and best practices.



Figure 27: PICSE active contributors.



In regards to collaborations, the Helix Nebula Initiative³⁸ deserves a special mention. The events organised by the Helix Nebula Initiative were the perfect forum to engage public research sector organisations and cloud service providers collecting their feedback on the cloud procurement process and promoting the PICSE results.

The Procurement Task Force set up by the Initiative was key in the process of validating the PICSE Wizard, the procurement model and the PICSE Roadmap. In addition, as TRUST-IT is responsible for the maintenance of the Helix Nebula website and social networks, PICSE outreach benefitted

³⁸ www.helix-nebula.eu

also from the huge Helix Nebula online community (As explained in paragraph 3.2, all the PICSE news were published on the Helix Nebula website and disseminated through the social networks of the Initiative).



Another key alliance was the one established with Cloud for Europe³⁹. The collaboration with Cloud for Europe was possible thanks to Linda Strick, Fraunhofer Fokus and Cloud for Europe Coordinator that was involved in PICSE as a member of the Task Force. The Cloud for Europe experience contributed to the analysis performed by PICSE. Between the two projects there was a continuous exchange of knowledge that was key for PICSE in producing the case studies, the best practices and the roadmap reports.

Table below summarizes the major alliances established by the project with national and international initiatives⁴⁰:

Initiative	Impact
CLIPS ⁴¹	CLIPS 'Cloud approach for Innovation in Public Services' – is a 30 month pilot project funded through the CIP Programme of the European Commission, aimed at the development of a new approach to the delivery of public services through the use of cloud computing. The collaboration with CLIPS was important to share best practices and lessons learnt between the public sector at large and the public research sector. PICSE has been invited by CLIPS as a panel member in the ICT2015 CLIPS networking session. In addition the CLIPS project was very active in disseminating PICSE results to its community.
Cloud 28+ ⁴²	Cloud28+ contacted PICSE to acquire a better understanding of the lessons learnt by the project, in particular related to the outcomes of the case studies. PICSE results therefore were disseminated to the Cloud28+ community thanks to a blog article published on their website. PICSE also appeared in the Cloud28+ newsletter.
CloudDICTU ⁴³	The DICTU Cloud project falls within the Dutch Central Government's Cloud Strategy. In the Netherlands. The experience of the Dutch government in setting up a private cloud contributed to the analysis performed by PICSE. The collaboration with CloudDICTU was possible thanks to Frank van Dam, Ministry of Economic Affairs, the Netherlands that is a member of the PICSE Task Force.
CloudWATCH2 ⁴⁴	CloudWATCH2 promotes trust and transparency in cloud computing by supporting both SMEs and governments and public administrations their investigation into cloud services and ensuring they make an informed decision by providing a suite of user-friendly tools and practical guides. The synergy with CloudWATCH has been key to promote the results of the PICSE project (especially the Wizard and the case studies). In particular, CLOUDWATCH will be fundamental for taking forward the uptake of the PICSE results as explained in chapter 4.
EGI ⁴⁵	The synergy with EGI was important to establish a dialogue with the ESFRI RIs and the scientific research community at large. The EGI Forums were the platform to discuss cross-border procurement issues for the research sector. Therefore they were important to collect feedback from the communities.

³⁹ <http://www.cloudforeurope.eu/>

⁴⁰ This table doesn't include all the collaborations established with the organisations that actively contributed to the Roadmap and the cases studies as already listed in previous paragraphs.

⁴¹ <http://www.clips-project.eu/>

⁴² <http://www.cloud28plus.eu/>

⁴³ <https://www.dictu.nl/>

⁴⁴ <http://www.cloudwatchhub.eu/>

⁴⁵ <http://www.egi.eu/>

Initiative	Impact
European CIO Association ⁴⁶	The collaboration with the European CIO Association was important especially in the first phase of the project to create awareness about PICSE and to engage respondents for the surveys.
e-IRG ⁴⁷	eIRG, the e-Infrastructure Reflection Group events were very important to PICSE to present its progress and outcomes to policy makers and gain their feedback and contributions.
Open Standard for ICT Procurement ⁴⁸	Open Standards for ICT Procurement is a 24 month project of DG CONNECT of the European Commission, meant to facilitate and promote the use of standards when procuring ICT. This Community is addressed to all those procurement officials, policy makers, strategists and architects within public organizations that care about reducing their ICT procurement costs through the employment of open procurement standards. PICSE established a synergy with Open Standards for ICT Procurement very early in the project by presenting its objectives to a workshop in November 2014. Of course the topics addressed by PICSE was really relevant for this projects so PICSE was invited to all the upcoming event and in November 2015 presented its Wizard at the Open Standards for ICT Procurement final event attended by over 60 participants. The synergy with this project was important for PICSE also to have a better understanding of the standards landscape related to ICT.
Research Data Alliance (RDA) ⁴⁹	The liaison with RDA was important for PICSE to reach the community of public research organisations, universities and libraries. PICSE surveys and outcomes have been promoted via the RDA website (managed by TRUST-IT). As a result, three interviewees were completed with two of them provided interesting case studies for PICSE.
SLA Ready ⁵⁰	PICSE benefitted from the early results of the SLA-READY project in terms of recommendations on cloud SLAs. These recommendations contributed to the PICSE cases studies and Roadmap.
SLALOM ⁵¹	PICSE benefitted from the results of the SLALOM project in terms of recommendations on cloud contracts and SLAs. The SLALOM results contributed to draft some lessons learnt for the PICSE cases studies and Roadmap. In addition, PICSE co-organised a workshop with SLALOM to create awareness about the results of the 2 projects towards the European Commission.

Table 13: PICSE synergies.

4.6 Press & media

A specific press and media database was set up and maintained by the Trust-IT Services to channel PICSE press releases and articles to a specific audience.

During the project lifetime 3 press releases and 8 articles were produced:

Press Releases & Articles	Type	Data
Towards the European Open Science Cloud: Main outcomes of the Helix Nebula Initiative Open Day event, http://picse.eu/media/press-releases/towards-the-european-open-science-cloud-main-outcomes-of-the-helix-nebula	Press Release	January 2016
Cloud 28+ What expectations do European public research sector have in regards to CSPs? http://www.cloud28plus.eu/content/What-expectations-do-European-public-research-sector--have-in-regards-to-CSPs--?extId=&caid701240000005VC8	Article on Cloud28+	December 2015

⁴⁶ <http://www.eurocio.org/>

⁴⁷ <http://e-irg.eu/>

⁴⁸ https://joinup.ec.europa.eu/community/open_standards_ict/description

⁴⁹ <https://rd-alliance.org/>

⁵⁰ <http://www.sla-ready.eu/>

⁵¹ <http://slalom-project.eu/>

Press Releases & Articles	Type	Data
Helix Nebula & PICSE: Enabling dynamic cloud ecosystem in Europe, http://picse.eu/media/press-releases/helix-nebula-initiative-and-picse-enabling-dynamic-cloud-ecosystem-in-europe	Press Release	November 2015
IT services procurement: Could G-Cloud be the answer Europe is looking for? http://www.computerweekly.com/feature/IT-services-procurement-Could-G-Cloud-be-the-answer-Europe-is-looking-for	Article on Computer weekly	October 2015
EU Public Authorities Can Learn from UK's G-Cloud Model for Procuring IT Services http://public.spendmatters.eu/2015/10/01/eu-public-authorities-can-learn-from-uks-g-cloud-model-for-procuring-it-services/	Article on Public Spend Matters	October 2015
Providing better public services through cloud computing, https://sciencenode.org/feature/providing-better-and-more-efficient-public-services--thanks-to-cloud-computing.php	Article on Science node	September 2015
Open Day event: Towards a European Open Science Cloud, http://picse.eu/media/press-releases/open-day-event-towards-european-open-science-cloud-july-2015	Press Release	July 2015
HN & PICSE Towards a European Open Science Cloud http://ec.europa.eu/research/iscp/pdf/newsletter/international-research-update_52_january-2015.pdf#view=fit&pagemode=none	Article on the International Research newsletter issue 52	July 2015
Working towards a European open science cloud https://sciencenode.org/feature/working-towards-european-open-science-cloud.php	Article on Science node	July 2015
EU Publishes List Of PCP and PPI Projects http://public.spendmatters.eu/2015/04/17/eu-publishes-list-of-pcp-and-ppi-projects/	Article on Public Spend Matters	April 2015
Project Aims To Support Uptake Of Cloud Computing In Europe http://24n.biz/news/project-aims-to-support-uptake-of-cloud-computing-in-europe-.html	Article on 24N.biz	January 2015

Table 14: PICSE Releases & Articles.

Overall 15 press clippings on **the most relevant channels targeting cloud computing, the research sector and public procurement have been produced.**



Figure 28: PICSE media channels exploited during the project lifetime.

5. Annex

5.1 References

- [1] N. Ferguson, S. Garavelli, S. Muscella. Communication Plan, MS1. November 2014⁵²
- [2] PICSE Roadmap⁵³
- [3] D2.2 Research Procurement Case Studies, S. Garavelli, N. Ferguson, A. Muscella, Trust-IT Services and Bob Jones, Rachida Amsaghrou, CERN⁵⁴ & Procuring Cloud Services Today, S. Garavelli, Trust-IT Services, March 2016⁵⁵
- [4] D3.2 Procurement Practices Report, D. Savanovic, J. Luna, D. Catteddu, CSA, Bob Jones, Rachida Amsaghrou, CERN, S. Garavelli, Trust-IT Services⁵⁶

5.2 External events

Event	Date & Location	PICSE participation	Main Impact
e-IRG Workshop	9 March 2016, Amsterdam, The Netherlands	PICSE Call for action presentation	Additional feedback for the PICSE Roadmap. Promotion of PICSE towards policy makers
Governance, Accountability, Compliance in the cloud workshop	16 November 2015, Berlin, Germany	Presentation of the PICSE Wizard and case studies	Additional feedback for the PICSE Roadmap.
Open ICT Standards for Public Procurement - Fostering Interoperability	13 November 2015, Brussels, Belgium	Presentation of the PICSE Wizard	Promotion of PICSE towards policy makers. Distribution of the PICSE case studies brochure.
EGI procurement session	10 November 2015, Bari, Italy	Presentation of the PICSE Wizard and case studies Promotion of PCP and PPI instruments	Additional feedback for the PICSE case studies and Roadmap. Promotion of PICSE towards research sector. Distribution of the PICSE case studies brochure.
EURITAS event	15-16 October 2015, Rome, Italy	Presentation of the PICSE Wizard and case studies Promotion of PCP and PPI instruments	Promotion of PICSE towards public sector organisations. Distribution of the PICSE case studies brochure.
EAFIP	27-28 October 2015, Paris, France	Participation & networking with representatives from the public sector in different European countries and from the EC (DG CONNECT, RTD, GROW etc.)	Distribution of the PICSE case studies brochure. PICSE also appeared in a printed brochure on PCP/PPI produced by the EC distributed at the event.

⁵² <https://zenodo.org/record/49372>

⁵³ <https://zenodo.org/record/49744>

⁵⁴ <https://zenodo.org/record/46973>

⁵⁵ <https://zenodo.org/record/48629>

⁵⁶ <https://zenodo.org/record/46545>

Event	Date & Location	PICSE participation	Main Impact
ICT2015, CLIPS networking session	21 October 2015, Lisbon, Portugal	PICSE participation to the panel of the CLIPS networking session Presentation of the PICSE Wizard and case studies	Promotion of PICSE towards public sector organisations. Distribution of the PICSE case studies brochure. Collection of feedback for the PICSE Roadmap.
Eurocloud forum	7 October 2015, Barcelona, Spain	Presentation of the PICSE Wizard and case studies. Promotion of PCP and PPI instruments	Promotion of PICSE towards 200 and 300 cloud service providers. The audience was particularly interested in the issues we have found with the procurement process, the work of PICSE and the idea of a joint procurement.
A new start for Europe: Opening up to an era of Innovation	22-23 June 2015	Presentation of the PICSE Wizard and case studies.	Promotion of PICSE towards EC representatives and participants from key research and innovation organisations
Open standards for ICT procurement: saving while reducing ICT lock-in	12 June 2015, Brussels, Belgium	Presentation of the PICSE cloud procurement barriers & Wizard	Promotion of PICSE towards MSP members, procurement managers, policymakers and ICT suppliers
Datacloud World Congress	3-4 June 2015, Monaco, Germany	Presentation of the PICSE cloud challenges related to integration, procurement, hybrid cloud and security.	Promotion of PICSE towards CSPs and industry
"Open Science and e-Infrastructures" e-IRG Workshop	3 June 2015, Riga, Latvia	Presentation of cloud procurement challenges	Promotion of PICSE towards policy makers
InfoSecurity Europe Event.	June 2015, London, UK	Presentation of the PICSE cloud procurement barriers & Wizard	Promotion of PICSE towards IT providers and industry
Cross-border procurement session at EGI	20 th May 2015	Presentation of the PICSE cloud procurement barriers & Promotion of PCP and PPI instruments	Feedback on opportunities and barriers for cross-border procurement of e-Infrastructure services and identification of best practices that could enable Research Infrastructures or large research collaborations to acquire services to support their research agenda collectively.
European open Science Cloud' at the 3rd Digital ERA Forum	23 April 2015, Brussels, Belgium	Presentation of the PICSE objectives & early results	Promotion of PICSE towards policy makers

Event	Date & Location	PICSE participation	Main Impact
RDA Fifth Plenary Meeting	March 8 -11, 2015, San Diego, California	PICSE poster	Awareness creation of PICSE towards the RDA community
PICSE at the Europeana Tech conference 2015	13 February 2015, Paris, France	Presentation of the PICSE cloud procurement barriers & early achievements on cases studies. Promotion of ICT8 and ICT36 calls and of PCP and PPI instruments	Promotion of PICSE towards 100 representatives from research institutes and funding agencies. The PICSE presentation was key to engage in the project new case studies and to promote the PCP and PPI instruments. 3 interviewees recruited DGT, Europeana, Museo Galileo
H2020 Info Day	6 February 2015, Brussels, Belgium	Presentation of the PICSE objectives. Promotion of ICT8 and ICT36 calls and of PCP and PPI instruments	Promotion of PICSE towards cloud service providers and representatives from national/regional government agencies.
CSA Summit during RSA event.	February, 2015, San Francisco, USA	Presentation of the PICSE objectives.	Promotion of PICSE towards industry specialised in cloud security
CERN meeting with EC Commissioner	January 2015, Geneva, Switzerland	F2f meeting	Promotion of PICSE towards policy makers
ESRT Event.	January, 2015, Brussels, Belgium	Presentation of the PICSE objectives.	Promotion of PICSE towards EU bodies, public organisations and IT industry
THINK Cloud Vendors	9 December 2014, London, UK	Participation & networking	Promotion of PICSE towards the G-Cloud community. Contact established with Public Spend matters.
Open standards for ICT Procurement: Sharing of best practices	3 December 2014, Brussels, Belgium	Presentation of the PICSE objectives. Promotion of ICT8 and ICT36 calls and of PCP and PPI instruments	Promotion of PICSE towards procurement managers, policy makers and ICT suppliers
Public Sector Cloud World Forum	2 December 2014, London UK	Presentation of the PICSE objectives and participation to the debate on how cloud computing changes the way public research organisations work Promotion of ICT8 and ICT36 calls and of PCP and PPI instruments	Promotion of PICSE towards senior IT government officials. One case studies engaged.
Modernizing the public sector and boosting economic growth through Innovation Procurement	26-27 November 2014, Milan, Italy	TRUST-IT presentation Promotion of ICT8 and ICT36 calls and of PCP and PPI instruments	The event was a great opportunity for PICSE to establish synergies with players belonging to the Public Administration.

Event	Date & Location	PICSE participation	Main Impact
ICT Proposers' Day 2014	9 October 2014, Florence, Italy:	Presentation of the PICSE objectives. Promotion of ICT8 and ICT36 calls and of PCP and PPI instruments	Promotion of PICSE towards policy makers, European projects and organisations . Collection of feedback on the new procurement instruments made available by the Commission (PCP and PPI)

Table 15: PICSE external events.

5.3 PICSE KPIs

WP1 set a series of KPIs to assess and benchmark activities within the WP. The KPIs were fundamental to monitor the project progresses. Table below shows the status of KPIs at the end of the project

Ref.	Indicator	Metrics	Target value	Total End of the Project	Comment
KPI1	Web platform impact	KPI1.1 Total and unique visits per month	Minimum target/month defined at month 3 with percentage increases	631	The average number of visits from month 10 to 18 has increased by 100 if compared with M1-M9 (Overall 579 sessions from M1-M9 versus 676 sessions from M10-M18)
		KPI1.2 Number of quality news pieces per month	2 new pieces of quality content/month	54 news	Exceeded
KPI2	Social Networks impact	KPI2.1 Number of tweets/month	10 per month	25 per month	Exceeded
		KPI2.2 Number of new Twitter followers	2 per month	7 per month	Exceeded
		KPI2.3 Number of re-tweets from external twitter accounts	2 per month	16 per month	Exceeded
		KPI2.4 Number of connections on PICSE LinkedIn	30 per month	15 per month	The posts on LinkedIn has been balanced with the engagement via the Procurement Forum network
		KPI2.5 Number of relevant LinkedIn discussion groups and profiles	3 every six months	3	See above
KPI3	Communication Tools Impact	KPI3.1 Number of animated videos produced	2 over the project life-time	0	In terms of engagement the effort initially foreseen for producing the videos has been spent by partners to present PICSE at different events and to provide concrete

					consultancy to different stakeholders
		KPI3.2 Number of views per videos	200 views per video	0	See above
		KPI3.3 Number of articles on iSGTW	2 over the project life-time	2	Achieved
		KPI3.4 Number of best practices published	5 over the project life-time	6	Exceeded
		KPI3.5 Number of e-book published	1 over the project life-time	1	Achieved
		KPI3.6 Number of eNewsletters produced	3 over the project life-time	3	Achieved
		KPI3.7 Number of Phone/Written interviews produced	10 over the project life-time	18	Exceeded
		KPI3.8 Number of press releases produced;	3 press over the project life-time	3	Achieved
		KPI3.9 Number of press clippings achieved	10 press clippings every press releases	15	The project preferred investing effort in individual engagement of stakeholders instead of widely exploiting the press and media world
		KPI3.10 Number of reports produced	5 over the project life-time	7	Exceeded
		KPI3.11 Number of video interviews published	10 over the project life-time	0	The effort initially foreseen for the production of video interviews have been spent to engage more interviewees and do more interviews. This led to the production of 13 case studies
KPI4	Events impact	KPI4.1 Number of events attended	5 external events per period	26	Exceeded
		KPI4.2 Number of new contacts established at external events	3 new contacts for each event	300 in total	Exceeded
		KPI4.3 Number of organised webinars	5 over 18 months	5	Achieved
		KPI4.4 Number of participants per webinar	At least 10 relevant stakeholders per webinar	30	Achieved

		KPI4.5 Delivery of the PICSE final event	1 over the project life-time	1	Achieved
		KPI4.5 Number of participants at the final event	At least 50 relevant stakeholders	40	The number has been exceeded if considering that overall 300 stakeholders have been engaged.
KPI6	Promotional Material Impact	KPI6.1 Number of fliers produced	4 fliers over 18 months	5	Exceeded
		KPI6.2 Number of posters produced	2 poster over 18 months	3	Exceeded
		KPI6.3 Number of pop-up banner produced	1 popup banner over 18 months	1	Achieved
KPI7	Stakeholders Engagement Impact	KPI7.1 Number of case studies produced	5 over the 18 months	13	Exceeded
		KPI7.2 Number of contacts in the stakeholders database	50 relevant contacts	1000	Exceeded

Table 16: PICSE KPIs