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SERVICE DISTRIBUTION NETWORK AND TOOLS FOR INTEROPERABLE PROGRAMMABLE, AND UNIFIED PUBLIC CLOUD SERVICES

Deliverable D7.2b

Report on Stakeholders' Evaluation

Work package	WP7 – Exploitation, Sustainability and Wider Use
Editor(s):	Christos Kanellopoulos (URNS), Fotis Karayannis (URNS), Giannis Ledakis (SILO), Gery Ducatel (BT), Ilja Livenson (NICPB), Nuria Rodriguez (ATOS), Enric Pages (ATOS), Juan Carlos Pérez (ATOS) Ben Williams (Camden), Roberto Contri (Genoa), Milan Markovic (MoSG)
Responsible Partner:	URNS
Quality Reviewers	Giannis Ledakis (SILO), Ben Williams (Camden),
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Definitions, Acronyms and Abbreviations

Acronym	Title
API	Application Programming Interface
AWS	Amazon Web Service
BT	British Telecommunications
CIP	Competitiveness and Innovation Framework Programme
CMS	Content Management System
EC	European Commission
eID	Electronic Identities
ERP	Enterprise Resource Planning
EU	European Union
GQM	Goal, Question, Metric
IaaS	Infrastructure as a Service
ICT	Information and Communications Technology
ISV	Independent Software Vendor
KPI	Key Performance Indicator
PSP	Policy Support Programme
SIG	Special Interest Group
UX	User Experience
VM	Virtual Machine
VPN	Virtual Private Network
WP	Work Package

Table 1: Definitions, Acronyms and Abbreviations

Executive Summary

The current deliverable discusses the results of the evaluation by **external stakeholders**. D7.2b thus entails the second iteration of the evaluation reports series, completing the work of D7.2a [3] by providing the input from the external evaluation. In parallel to D7.2b, there is also deliverable D7.3 [6] that deals with more details on the technical, financial and techno-economic evaluation of the STRATEGIC framework.

The deliverable is based on the methodology defined in T7.1/D7.1 and for the external evaluation, we redesigned the questionnaire based on the feedback that we collected during the first iteration of D7.2 (D7.2a). This time, we used Google Forms as the tool for delivering the survey to the external stakeholders.

The main pool for the external stakeholders has been the STRATEGIC Special Interest Group (SIG). All project partners, used their existing business networks in order to reach out to contacts that would be good fit for the SIG. As a result of this process, the STRATEGIC SIG counts 48 members, from 32 organizations and 16 countries. As expected, there are SIG members from all of the 7 countries that the STRATEGIC partners are coming from and in addition we have also members from another 12 countries from the continental Europe, plus Turkey and Brazil. The SIG has been proven to be a very effective channel for communicating local events, workshops and webinars that have been organised in the context of the evaluation of the STRATEGIC platform.

As a result of these activities, 21 local events and workshops were organised in Greece, Estonia, Italy, Serbia, Spain and the UK. The events ranged from focused 1-1 meetings to hands-on workshops with 10-30 participants. These events provided us with the possibility to closely interact with external stakeholders and gather valuable input. In parallel to the in-person meetings, we have also delivered 2 webinars and a 3rd is under preparation and is scheduled for February 14th.

The main conclusions from the external evaluation are the following:

- The STRATEGIC Service Store provides an easy to use and flexible offering that already meets the key requirements of most of the key stakeholders.
- The support of IaaS providers, the deployment of services and the monitoring of the application are very strong points of the STRATEGIC platform.
- The extension for the Security Services is also another unique offering of the STRATEGIC platform, which manages to provide, strong and seamless security protection without compromising the ease of use.
- Application packaging remains a daunting task, even though the STRATEGIC platform has taken great leaps in order to make it easier and flexible. Still, there is still a lot of room for improvement.
- Integrations with eIDs and the support for attribute exchange, are considered to be strong points of the platform, but the overall ecosystem is not mature enough for the adoption of these services. As eIDAS services are being delivered across the European Member States, these capabilities of the STRATEGIC platform will become more and more attractive.
- The ability of the STRATEGIC platform to adopt to the regulatory requirements of the public bodies is considered to be a major plus.
- The public bodies, cloud service and application providers we have been engaging with, clearly see the benefits from the use of a service like that

of the STRATEGIC platform and the vast majority of them is willing or is considering of paying for getting such services.

- The most appealing and tangible benefits of the STRATEGIC offering for the public bodies seem to be (a) the faster deployment cycles that can be achieved through the STRATEGIC platform as they also lead to reduced time to market; (b) the reduction on the overall costs for operating and using IT resources; (c) the scalability patterns that can be implemented by taking advantage of the elasticity the cloud offers and which is taken to the next level by the multi-cloud capabilities of the STRATEGIC platform; and the ease that the STRATEGIC platform provides for day to day operations, and which has direct impact to both the deployment speed and the operational costs.
- The fact that there was no clear pricing model for the STRATEGIC offerings had a negative impact to potential customers of such services. Concerns were voiced both by the pilot partners and by external stakeholders. This has been addressed in D8.3b [7].

1 Introduction

1.1 Scope and purpose of the document

The main goal of the STRATEGIC project is to facilitate organisations and notably public bodies to leverage the benefits of public cloud services. In work package 7, the objective is to evaluate the results of project by focusing on a mixture of perspectives and stakeholders, in order to improve STRATEGIC framework and also to consolidate best practices based on the results.

D7.2b is the second iteration of the stakeholders' evaluation report, dealing with the **external evaluation of STRATEGIC**. The deliverable follows the methodology defined in T7.1 infused with the knowledge gained from the first iteration. To this end, a new questionnaire was prepared, taking into account the feedback that was recorded in D7.2a. This second evaluation effort focuses on the **perspectives of external stakeholders**. D7.2a and D7.2b together provide the overall stakeholder evaluation and are complementary to deliverable D7.3 that deals with more details on the technical, financial and techno-economic evaluation of the STRATEGIC framework.

1.2 Target audiences

As this deliverable is a public document, it is intended both for internal and external project audiences. Internal audience is the consortium partners, while external includes the European Commission services, the STRATEGIC reviewers, and to the SIG members, who contributed substantially to this iteration of the deliverable. Of course, this iteration is particularly interesting for external target audiences such as Public Sector Organizations, Cloud Application Developers and Cloud Service Providers.

1.3 Structure of the document

The document consists of five (5) main sections:

- Section 1 is the introduction.
- Section 2 provides a brief description on the adapted methodology and then focuses on the activities that have taken place
- Section 3 presents the analysis of data received
- Section 4 summarizes the challenges and the lessons learnt both by the STRATEGIC pilot partners and the technical partners
- Finally, section 5 summarises the main conclusions from the analysis.

2 Methodology and activities

This section describes the methodology and tools that have been used in order to collect the data for the stakeholders' evaluation. The evaluation executed and documented in the second and final iteration of the deliverable applies specifically to the external stakeholders. Following the feedback received during the first iteration of this activity, we decided that we needed to follow a multi-channel approach, with a combination of workshops, webinars, interviews and a simplified questionnaire.

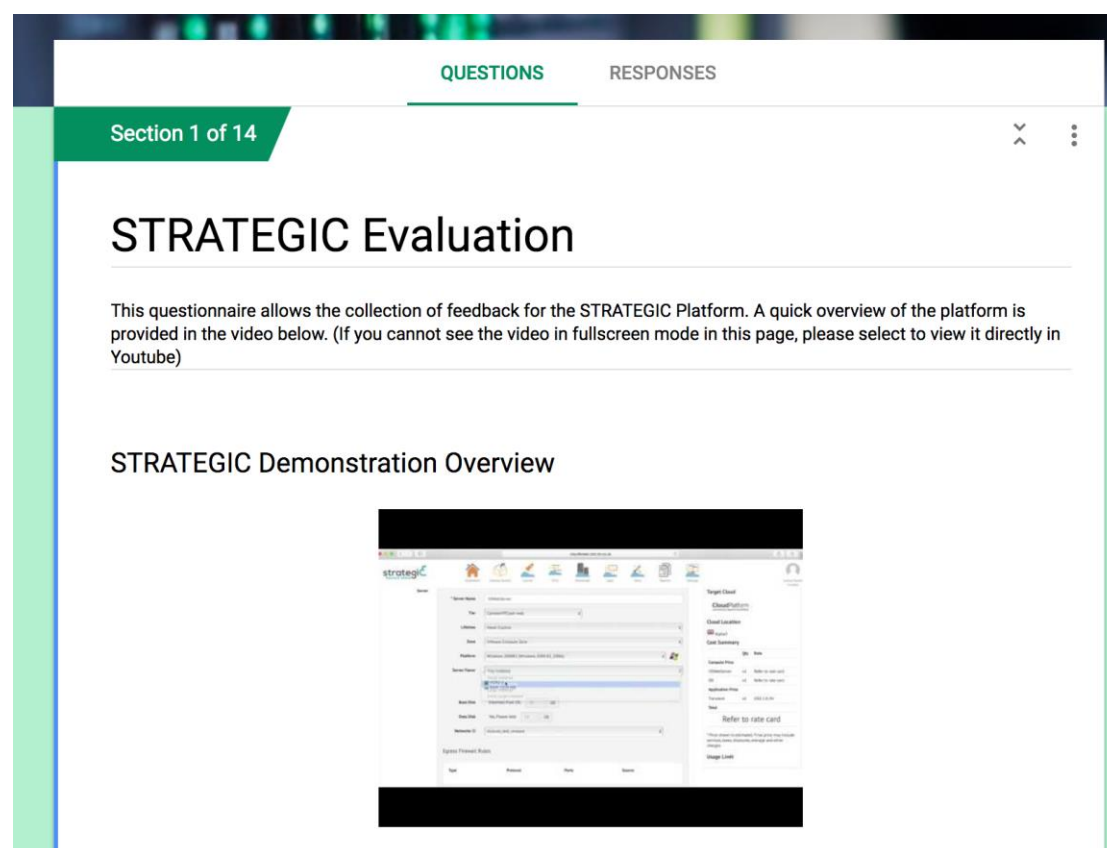
2.1 Methodology Application and Use

In D7.1 a set of GQMs was developed for both the technical and the financial/business aspects. These set of questions were used for the evaluation process by the internal stakeholders (1st iteration) and although they were designed to provide a very thorough input on various aspects of the STRATEGIC platform, the feedback we received by all the partners was that many of them were difficult to be answered even by people who were directly involved in the projects and the whole process was very time consuming and would probably put off many potential external stakeholders. As a result of this very important input, we prepared a new simplified version of the questionnaire, which is meant to gather input on all the important aspects of the STRATEGIC platform, but without being excessive in technical details. The input received through the questionnaire could be further extended via in person interactions with the people stakeholders in focused workshops and lightweight interviews.

An important difference from the first iteration of the evaluation activity was that external stakeholders are not in general familiar with the STRATEGIC platform. To this end, we decided to have set of focused webinars and workshops in which the STRATEGIC platform could be thoroughly presented. The webinar videos have been also made available in the STRATEGIC YouTube channel¹, so that the material would be available to interested parties that could not participate in any of the scheduled webinars and workshops.

For the questionnaire, we decided to use Google Forms as the previous experience with LimeSurvey was not very positive, specifically regarding the post processing of the results. We found that since the time of the internal stakeholder evaluation, the Google Forms product had been extended with new functionality that allowed that met exactly our needs both for the presentation of the questionnaire but also of the gathering and post processing of the results. A particularly important feature was the ability to embed in the first page of the questionnaire, the introductory YouTube video for the STRATEGIC platform. This enabled the people interested to watch the video and directly provide their input to the questionnaire.

¹ https://www.youtube.com/channel/UC_IVd4RZq2L1nv8zrmIjziA



QUESTIONS RESPONSES

Section 1 of 14

STRATEGIC Evaluation

This questionnaire allows the collection of feedback for the STRATEGIC Platform. A quick overview of the platform is provided in the video below. (If you cannot see the video in fullscreen mode in this page, please select to view it directly in Youtube)

STRATEGIC Demonstration Overview

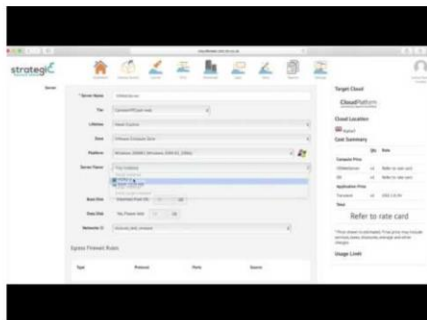


Figure 1: First page of the questionnaire

In order to reach out to our target audience, we decided to use the Special Interest Group (SIG) as the basis and to further extend the contact base using the contact networks of the STRATEGIC partners and the people that had already expressed their interest in previous STRATEGIC activities, such the survey that was done during the 1st year of the STRATEGIC project in the context of WP2.

Specifically, for the SIG we decided on a number of focused reach-out activities by each partner. Currently, **the SIG counts 48 members, from 32 organizations and 16 countries.** As expected, there are SIG members from all of the 7 countries that the STRATEGIC partners are coming from and in addition we have also members from another 12 countries from the continental Europe, plus Turkey and Brazil. The SIG has been proven to be a very effective communication channel for the project and the dissemination of its results.

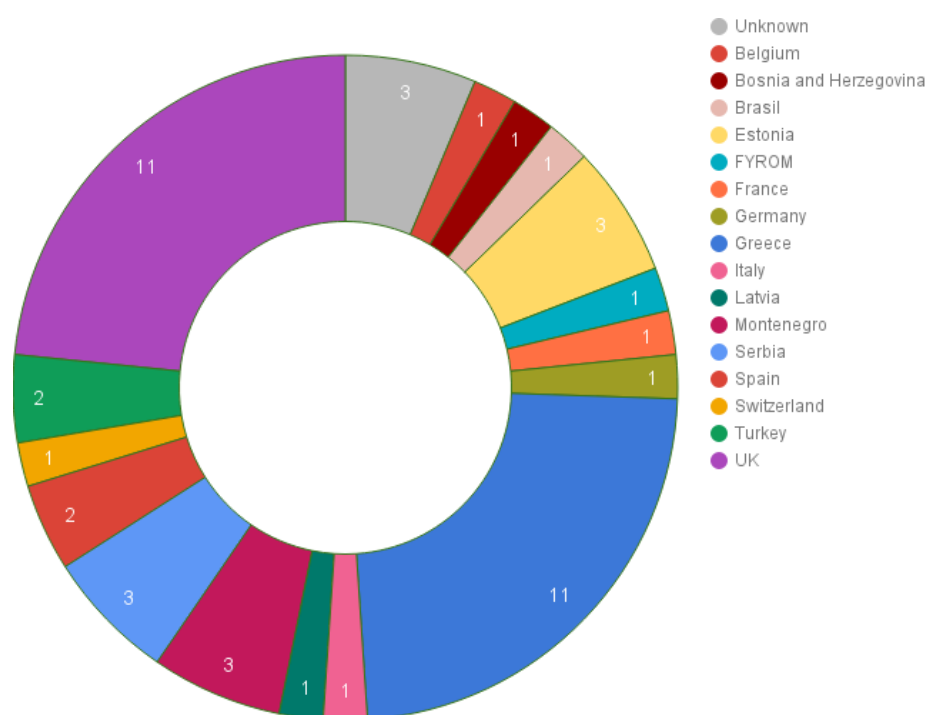


Figure 2: SIG Members per country

As part of T7.2, the STRATEGIC partners organized 11 workshop events in and 2 webinars in which participants had the chance to have a close look to the STRATEGIC platform and in the case of the workshops, to discuss in further detail with the STRATEGIC partners.

2.2 Local events – workshops

The local events – workshops were one of the main channels for presenting retrieving feedback about the STRATEGIC platform. Each workshop/event was designed so that the participants could get a thorough understanding of the STRATEGIC offerings and get engaged in focused discussions with the STRATEGIC partner(s) in order to better understand how it could be help them to utilize cloud resources for their services. The direct interaction with the participants allowed for receiving valuable feedback that could not be captured without such in-person interaction.

In order to capture the feedback from each workshop, we prepared an evaluation form that the organizing partners had to fill after each workshop was completed and in which they capture the information and the feedback received during the workshop.

Partners involved	
Event Place, City, Country	
Event Title	
Event Type	
Event Date	
Audience number	
Audience type	
Event overview	
Feedback received- Main points	
Photos	
Issues	
New contacts made	
Annexes	

Table 2: Event evaluation form template

2.2.1 STRATEGIC Service Store Training in the UK

The 1st event was a *Service Store* training, organized on June 20th 2016 by BT in London focusing on SMEs and corporate representatives. The event was run at the EIT Digital Collocation Centre at the London node. The aim of the event was to give an insight to elected SIG partners who had had prior exposure to the Service Store.

The presentation described the Service Store in technical details including Cloud configuration, Application on-boarding, Application deployment and Security. The presentation was followed by questions, and some follow up implementation tutorials.

Organisations present at this event were given access to the service store and support was given to on-board applications and to evaluate the technology. Some organisations attached their own AWS accounts to the service store and were able to try the platform. This has given us the chance to gather feedback from organisations that had explored and experienced key parts of the service store:

- They were able to set up cloud targets by registering them into the cloud profiles.
- They were able to on-board their application as a deployment package.
- They were able to register to both intelligent protection from BT, and data encryption from BT.
- Finally, they were able to deploy their application into their cloud target.

Based on this event, we were able to identify two applications that were suitable to be on-boarded into the service store. We were able to create some proof-of-concept deployment from our testbed environment platform which can serve as demonstrators of the technology. The feedback received at the training event can be summarized in the following points:

- Stefano Tranquilini, from Chino commented that overall the deployment of Chino as an independent and custom app for each customer would change drastically Chino value proposition, overall security, reliability and users' trust.
- Furthermore, the added value of the protection is very interesting for a service like Chino's. Managing and monitoring the security is fundamental and not trivial. Having such tools can save them hours of work and they can have a more reliable and secure offer, a win-win solution for them and their customers.
- However, at current state the implementation it lacks of some UX and stability that is fundamental before becoming a commercial tool but for sure it's on the right track to become a useful tool.
- Jozef Dobos from 3D Repos, highlighted that now, they will be able to deploy their open source 3D version control system application across a wide range of cloud service providers with a significant improvement in security, all to the benefit their customers.

There were 29 attendees at the training and 4 new contacts were established.

2.2.2 Joint VITAL-Strategic stakeholders workshop in Greece

The 2nd event took place in Greece on June 30th 2016 and was co-organized by AIT, SILO and URNS. The event took place at the Athens Information Technology Institute in Athens and was co-hosted with a related event from the VITAL project.

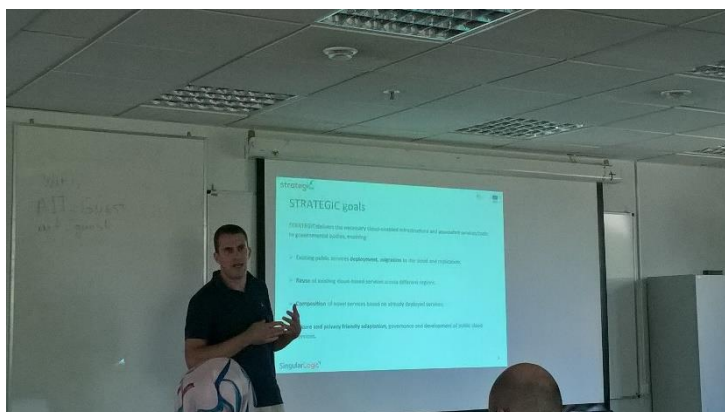


Figure 3: Joint VITAL-Strategic stakeholders workshop in Greece

The event was attended by different stakeholders including 7 municipalities (6 from Greece and 1 from Turkey). The four ones in Greece were of different size (big and small) and included the cities of Aigaleo, Agios Dimitrios, Dionysos, Filothei-Psychiko, Penteli, Piraeus) and from Turkey the Istanbul Metropolitan Municipality. There was also participation from Camden Town Unlimited, a company catalysing the business environment for CAMDEN). The rest of the participants were technology providers and developers, as well as consulting

companies working in the public sector. Altogether 31 people attended this event. The event was organised with presentations and demos and then an in-depth discussion took place. The municipalities were specifically asked to provide their feedback on the presented solutions. The main points from the event are summarised below:

- There was a variety of municipalities in terms of size or maturity, ranging from very big to relatively small. Also, the organisation of public administrations is different in each country. For example, in Istanbul, as the population is very big, the city is organised hierarchically with 30 district and a central metro layer, the latter with full in-house infrastructure and IT department. While in Athens there were also small municipalities. Feedback varied depending on the size and maturity.
- Small municipalities reported having more basic needs (like upgrading their network connection or their IT infrastructure) and lack of resources, and thus STRATEGIC was considered a kind of "luxury". Big municipalities shown higher interest about STRATEGIC.
- In all cases, municipalities provided positive feedback for STRATEGIC, mainly its service store (marketplace), about its functionality and one-stop-shop approach.
- For Greece, it was proposed that STRATEGIC solution is negotiated at a central level (Central Union of Municipalities in Greece).²
- Municipalities highlighted that previous successful installations and good track record is very important for them (as they don't want to be the first to use a new service).
- Municipalities are not always up-to-date regarding the statutory framework (legal and structural processes) and the discussion showed that in many cases the framework was there and the representatives were not fully aware of it.

During the event 20 new contacts were made, which resulted in new memberships to the STRATEGIC SIG.

2.2.3 STRATEGIC one-to-one internal workshops in Italy

In a period of three months between July and September, the municipality of Genoa organized a series of internal local workshops in which project partners were able to have focused discussions with personnel from the IT department, the EU projects department and the Communications department of the municipality. Depending on the particular background more emphasis was put on some aspects compared to others. Overall 10 people were introduced to the STRATEGIC offerings.

To the people from the IT department, the Service Store and the underlying technical architecture were presented in detail. During the one-to-one sessions, we had the opportunity to show them practical examples of use on the pilot infrastructure and perform hands-on tasks in order to get a better feeling of the features and capabilities of the STRATEGIC platform.

² Later on, it was proposed to approach the Union but also the EU Committee of the Regions. It wasn't feasible to get an answer from the first, while for the latter communication was made, but the request to organise an event at the Committee of the Regions was not possible.

For people the people working in the EU projects and Communication departments, the focus was on the unique aspects of the STRATEGIC project compared to other EU project and also on its implications regarding the collaboration with other municipalities in Italy and across borders.

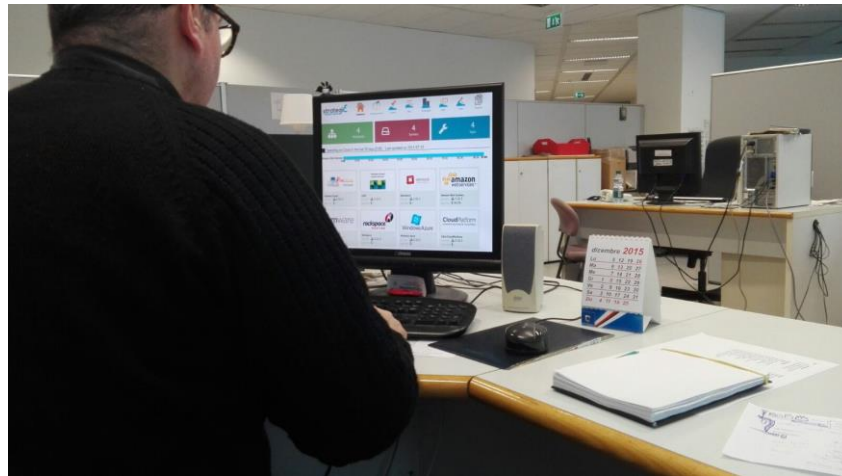


Figure 4: Strategic stakeholders workshop in Italy

2.2.4 STRATEGIC Service Store evaluation workshop in the UK

The event was organized by Camden and BT and took place on October 7th 2016 at the London Borough of Camden. The audience included public administrations from local Government as well as Developers and Consultants. Overall, ten (10) people attended this workshop. The goal of the event was to allow technical users to become familiar with the STRATEGIC Service Store and to express their views and impressions of the service store. To this end, an in-depth demonstration of the STRATEGIC Service Store was given, followed by focused discussions with the participants.

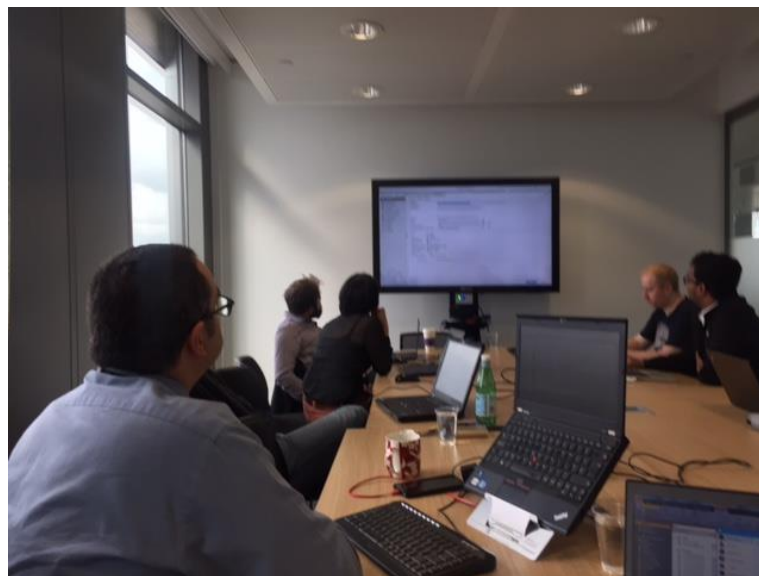


Figure 5: Strategic stakeholders workshop in UK

The feedback received in this event can be summarised in the following points:

- A good range of applications are already available within the store.

- Licenses and cost of usage for the service store was a concern for most members.
- Members of Camden already use a similar service but the BT service store offers a different range of applications and more advanced configuration options.
- Positive responses were received based on the high levels of security offered by the store.
- Some members did suggest performance upgrades for the store due it being slow and unresponsive at times, but this was related to the fact that in order to access the service store, the guests had to connect to the public Wi-Fi which caused these performance issues.

2.2.5 Mixed STRATEGIC workshop in Italy

On October 17th and 18th, the municipality of Genoa organized 2 1-day local workshops targeting mixed audience from the municipality, the University of Genoa, local businesses and developers. The events were organized to present and show demos of the service to persons coming from different experiences and background (University, Municipality and private companies)

The participants were split in two groups, of 7 and 5 people, who attended the workshop in two different days. In this way, we had the possibility to demonstrate the service and interact with them in a way similar to the one used for the one-to-one meetings organized for internal personnel. The main feedback received by the participants is summarized below:

- All participants were impressed by the ease of the platform.
- Security and data protection services were particularly appreciated
- The range of the general-purpose applications that are already part of the platform as a result of the STRATEGIC pilot activities were found to be very interesting and many people expressed the interest to have an expanded list of special purpose application for the public bodies.
- The possibility to use multiple IaaS providers, was found to be one of the very strong offerings of the platform.
- The network and resources scalability offered by the platform was also another point highlighted by the participants.
- Concerns were raised about undetermined costs for using the platform.
- Willingness to join depending on the level of adoption of the platform.
- One of the participants expressed the opinion that it would have been better if the showcases were done using the local infrastructure, as they would be able to see the difference that the STRATEGIC platform brings to some day to day tasks.

2.2.6 Workshop on high-level design for cloud services for the public sector in Estonia

This event was organized by NICPB and was held on October 19th at the Information System Authority in Estonia. Twelve (12) participants attended this event, mainly from public and regulatory bodies. The purpose of this event was to

engage in a discussion about the ways how public (federal) level agencies can consume cloud services, from public and private clouds. The main outcomes of this event are summarized in the following points:

- Current regulations in the public sector of Estonia do not allow to use public cloud services for any of production loads of the federal level.
- No regulations are applied to non-production loads, but typically the same entity (company) is responsible for both non-production and production loads.
- Cloud management (platform) must be under government control and must be open-source for adoption.
- Policy-based controlling of applications and deployment targets was seen as a big plus.
- Protection against DDOS and other network attacks is very desired yet not possible to deliver on small country scale.

2.2.7 STRATEGIC internal workshop in Serbia

On October 21st 2016, the Municipality of Stari Grad held a workshop in Belgrade for the personnel of the municipality. Ten (10) people from ICT and management of the municipality attended this workshop. During the workshop, the participants became familiar with the STRATEGIC technical architecture, the platform and the specific pilot use cases that have been implemented in the project. The main topics of the discussion included the reparation for production phase on the Orion's IaaS, the preparatory for the exploitation, the preparation of a possible follow-up SIG event in MoSG in the first half of December, requirements for the on-boarding of new applications on the STRATEGIC platform and possible commercialization of the project results. The main feedback received by the participants is summarized below:

- **Usage of STRATEGIC Service Store.** Regarding the usage of the STRATEGIC Service Store, some feedbacks from participants are: overall general positive feedback, many applications could be chosen, easy to adapt and deploy apps, possible extensive configuration of security features, relatively slow UI, VPN connections could be more efficient, etc.)
- **IaaS dilemma.** What is the final option for MoSG from the possible ones:
 1. Purchasing own IaaS and maintaining it internally – in MoSG premises
 2. Purchasing own IaaS and maintaining it in the provider's premises
 3. Renting VMs and install OpenStack and applications
 4. Renting VMs with some cloud infrastructure and install applications
 5. Renting physical machines and install OpenStack and applications
 6. A prevalent opinion from the audience was that the options 2 and 5 are the most acceptable and should be further evaluated after the production phase.
- **MOSG applications for the production phase.** The audience has opinion that, besides the current applications evaluated during the STRATEGIC project, more "killer"-applications which could attract more customers should be considered and evaluated. Some possible new additional applications that should be ported to the cloud were mentioned.

- **What to offer to others/exploit/commercialize?** A discussion was made regarding which applications should be exploited by the MoSG itself and which of them could be offer to other municipalities or public administration bodies. In this topic, a role of MoSG in STRATEGIC exploitation and/or commercialization is considered and discussed. However, this must be discussed further with the whole consortium.

2.2.8 Seminar on hybrid cloud solution in public sector in Estonia

This seminar was organized by NICPB and was held on October 28th 2016 at the State Infocommunication Foundation in Estonia. The purpose of this seminar was to present a Microsoft Azure demo for hybrid cloud deployment and payload migration between different security zones and to have an interactive session about the potential use cases, including network attack protection, faster time to market of the production system, license rent and usage of SaaS services with sensitive data. The seminar was attended by 15 people, mainly SIG contacts, developers and regulatory authorities. The main feedback from this event can be summarized in the following bullets:

- Somewhat MS specific seminar.
- Main issue that is attempted to address: control over sensitive data while providing ease of service development.
- 3rd party brokerage solution: e.g. STRATEGIC Service Store or Azure Portal. Cannot be used for controlling production deployments as long as source is closed.
- 3rd party brokerage solutions can be integrated as public cloud services, i.e. with limited access and target groups.
- Service Store with pre-validated solutions for public sector is an interesting concept, if: possible to get support from a single point of contact for various solutions, pre-validated for ISKE (Estonian Gov security framework), reasonably priced (same or cheaper than directly from vendor).
- Case of public body reselling their solution is close to non-existent in Estonia, development is outsourced to private sector or private-public partnerships.

2.2.9 STRATEGIC workshop in Spain

On November 15th, ATOS organized a STRATEGIC workshop in the context of "Oportunidades de financiación Europea para fomentar la innovación en AAPP", an event was organized jointly by five European projects (STRATEGIC, SONNETS, CocoCLOUD, VisiOn and CIRAS), having a similar scope to collect feedback from external stakeholders.

The event was attended by different stakeholders including 13 representatives of 8 public administrations from Spain and 9 representatives of private sector one. The public administrations included the Spanish Ministry of Employment, the Local Police of Madrid, Municipality of Segovia, Municipality of Leganés, red.es, Community of Madrid, the Spanish Tax Agency, ENISA (National Office for the Innovation). The rest of the participants were technology providers and developers working in the public sector including one (1) SME and 8 colleagues from Atos, external to the project.



Figure 6: Strategic stakeholders workshop in Spain

The event was organized with presentations and demos, and then an in-depth discussion took place. The municipalities were specifically asked to provide their feedback on the presented solutions. The main points from the event are summarized below:

- There was a variety of public administrations in terms of size, level and maturity, ranging from national ministries to local municipalities.
- Despite the differences, all the stakeholders reported having lack of resources and lots of constraints at the political level.
- In all cases, PS representatives provided positive feedback for STRATEGIC, and even they ask for the future commercialization of the project.
- In Spain, there exists a national initiative to deploy a private cloud for the public administrations at all levels. However, they pointed out the lack of interest from the point of view of the politicians.

The workshop was attended by 22 people and 14 new contacts were made.

2.2.10 Workshop on brainstorming on public sector and cloud service adoption in Estonia

This event was organized by NICPB and was held on November 14th 2016 at Ericsson Premises. The purpose of the workshop was to have an interactive session about a joint effort on providing cloud services to the public sector following regulatory constraints and market needs. Participants involved member of the STRATEGIC SIG, telco and hosting providers, account managers for public sector clients, application developers and system integrators. The main feedback from this workshop can be summarized in the following points:

- Regulations are strong and prohibit ease use of cloud services. Data owner must be accepting auditing risk.

- Changes in regulations are underway to reduce limitations to allow hosting of data sets with low security requirements on certified public cloud providers.
- Encrypted data can be kept in the public hosting if key management is enforced with hardware token stores. Potential case for off-site / off country backups and data embassies.
- Network attacks are daily and are serious issue, not possible to protect against them unless you are a big public cloud provider. Strong motivation for adoption of cloud services.
- eIDAS and GDPR acts are expensive for implementation. Mostly issue for federal level systems. Cloud solution could offer at least partial help for addressing regulations.
- Collaboration between developers and hosting providers is desired by all parties, technology could be offering a way to do that more efficiently (Service Store?)

2.2.11 Workshop about the SUNFISH project in Estonia

This workshop was held by NICPB no December 12th 2016 at Cybernetica AS in Tartu. The purpose of the workshop was to have a discussion with the Estonian participants of SUNFISH H2020 project aiming at creating secure cloud federations. Three (3) developers participated in this workshop. The main feedback from this workshop can be summarized in the following points:

- Secure cloud federation aimed at public sector is hard. It seems easiest to build a full private cloud stack and avoid regulatory constraints.
- SUNFISH is building a proof-of-concept of a platform, but ~1 year away from anything semi-production ready.
- Secure data exchange is very important by all validation partners (based on Estonian X-road system).
- Central service store for service provisioning is a target in Sunfish but nothing yet exists. Planning to create their own, not to adopt others.

2.3 Video content and webinars

In order to increase our reach to potential external stakeholders we decided early on to prepare an animated video content, which could be delivered via the local workshops/events, but also via a number of webinars, while being also available through the STRATEGIC YouTube Channel. To this end, we have prepared 5 different animated videos focusing on different aspect of the STRATEGIC offerings:

2.3.1 Video content

The first video is presenting and overview of the STRATEGIC Service Store. It was meant as an initial walkthrough of the Service Store via which the user could view various aspects of the service.

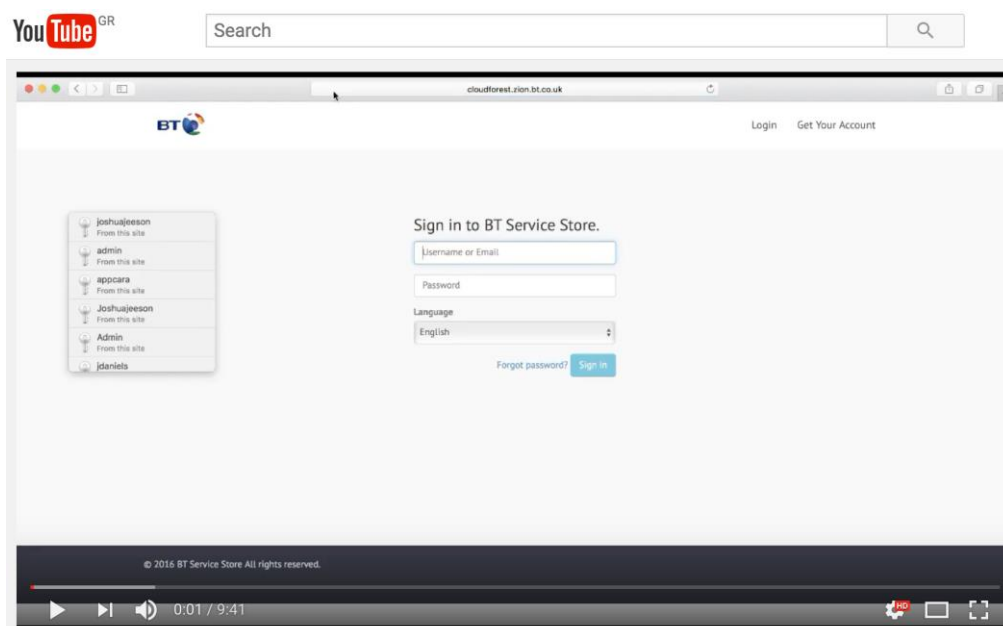


Figure 7: Screenshot of the video for the STRATEGIC overview

This first version of this video was made available in May [9] and was updated in back in November [10] in order to include narration and the latest features of the platform. This video is linked directly from the questionnaire circulated to the stakeholders and was presented also in the most of the local workshops and events. Overall the video, has been watched 224 times.

The 2nd video content is a two-part video ([11], [12]) that provides a walkthrough of the Intelligent Protection extension that is available on the STRATEGIC Service Store. People can see how the Intelligent Protection can be utilized in order to add security protection to their VMs, and how the STRATEGIC Service Store, makes it possible to use this service seamlessly.

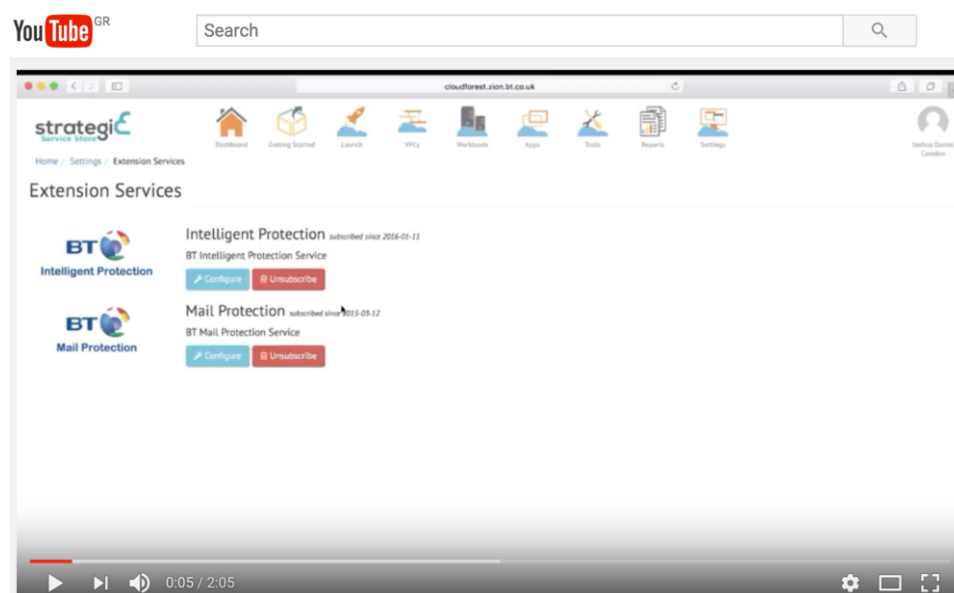


Figure 8: Screenshot of the video for the Intelligent Protection

These videos have been watched 37 times.

A third animated video was prepared in order to target non-technical people, who want to understand what the value proposition of the STRATEGIC solutions is.

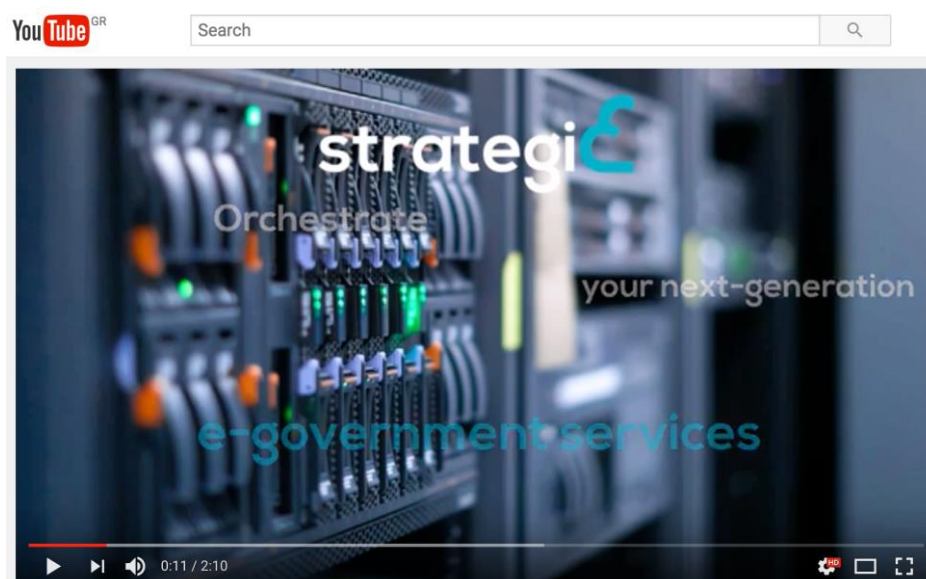


Figure 9: Screenshot of the video for the value proposition

2.3.2 Webinars

Up to now we have delivered two (2) webinars and another is being organized and will be delivered on February 14th. The webinars are advertised through various channels, then main of which is the SIG mailing list.

Invitation to Strategic Service Store Webinar

View this email in your browser

strategiC

STRATEGIC Service Store Webinar

Join us on the online webinar that will demonstrate the usage of the STRATEGIC marketplace called Service Store. [Register now](#) for the Webinar that will take place on October 25 at 11:00 AM CET.

STRATEGIC is a EU funded project that tries to fulfil the need of public sector organisations to adopt cloud computing and to leverage the benefits of public cloud services. STRATEGIC Service Store is a marketplace for developers that want to publish their applications and for public bodies that want to deploy public sector targeted applications and manage the entire lifecycle of an application in public, private or hybrid infrastructure.

[Register Now](#)

Find more about STRATEGIC! View the videos on our youtube channel or read the blog posts or the public deliverables of STRATEGIC that are available for download in our site <http://strategic-project.eu/>.

In this webinar, we will present:

- How to use the multiple public clouds safely
- How to embrace public clouds alongside your private cloud infrastructure.
- How to deploy one of the over 80 applications already available, to your cloud, in a few clicks.
- How to bring your own applications to the Service Store.
- How to manage and monitor your application and data security in multi-cloud deployments.
- How to seamlessly integrate advanced security services for your application and data protection.
- How to public configure cloud workloads to scale to your peak demand
- Answer Q/A and make fruitful discussions

Register today!
Can't attend? Sign up and we'll send you a link to the recording!

Atos **Singular Logic** **BT**

URANUS **Computing Limited** **Ministry of Digital Transformation**

The City of Genoa **London Borough of Camden** **Municipality of Stari-Grad**

Figure 10: Screenshot of the webinar invitation

The first webinar was delivered on October 25th 2016. Nineteen (19) people registered and attended this webinar. The attendants included software engineers, project managers, consultants and computer scientists. Only 3 participants came from organizations participating in the project (ATOS and Genoa), but all of them were not involved in the project. Nine (9) attendants came from private companies, two (2) from Universities, one (1) from a high school, two (2) from municipalities and four (4) from unknown organizations.

The second webinar was delivered on November 17th 2016. Eighteen (18) people registered and attended this webinar, but only four (4) people, had attended also the first webinar. Nine (9) attendants came from organizations participating in the project (Genoa, MoSG, Silo), but in this case, only two of them are also engaged in the project. Ten (10) of the attendants came from municipalities, one (1) from a University, four (4) from private companies and three (3) from unknown organizations. Interestingly enough, seven (7) of the attendants were from the Municipality of Stari Grad, none of whom had attended the previous webinar.

2.4 Questionnaire

One of the outcomes from the feedback that we received during the evaluation process by the internal stakeholders that resulted in the previous iteration of this deliverable, was that the questionnaire was very extensive, focusing on too many details that were discouraging even for people who participate in the project. A clear message captured in D7.2a, was that we needed to redesign the questionnaire in make it approachable to our target audience, which now included people external to the project.

The new questionnaire has fourteen (14) sections, but not all these sections are visible to all the participants. Depending on the responses the participants give on certain questions, some sections might be skipped.

The 1st section, is the introductory section, which has also the link to the STRATEGIC overview video. In this way, even people who did not participate in any of the local events and workshop or to any of the webinars, can go over the main points of the STRATEGIC offerings and watch how key actions can be performed on the platform.

QUESTIONS

RESPONSES

Section 1 of 14

STRATEGIC Evaluation

This questionnaire allows the collection of feedback for the STRATEGIC Platform. A quick overview of the platform is provided in the video below. (If you cannot see the video in fullscreen mode in this page, please select to view it directly in Youtube)

STRATEGIC Demonstration Overview

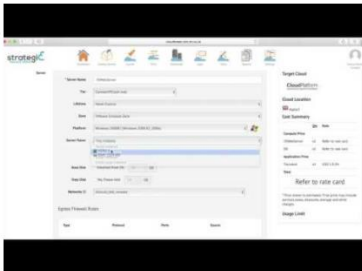


Figure 11: Screenshot of the 1st section of the questionnaire

In the 2nd section, the user is asked to provide information about himself/herself and the organization that he/she is representing. We have grouped the organizations in three (3) categories, Cloud Service Providers, Cloud Application Providers and Public Sector Organizations. Users are allowed to define their own type for their organization if one of the predefined categories does not fit them.

Section 2 of 14

Contact Information

At first let's start with a short description of yourself!

Name

Short-answer text

Email

Short-answer text

Name of your organisation

Short-answer text

Position in the organisation

Short-answer text

Type of your organization (affects the questions that will be provided to you) *

☐ Cloud Service Provider
☐ Cloud Application Provider
☐ Public Sector Organisation
☐ Other...

Figure 12: Screenshot of the 2nd section of the questionnaire

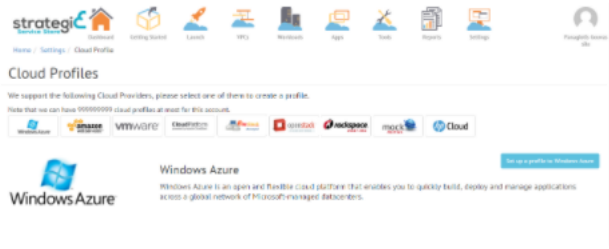
The 3rd section, focuses on the available support for IaaS providers. The users are asked to provide their feedback regarding the ease of use of multiple IaaS providers through the STRATEGIC platform, the flexibility that is provided for managing multiple providers and whether the list of supported IaaS providers meets their requirements. In case, there are more IaaS providers that should be included, the user can use a free text field in order to add them.

Section 3 of 14

Support for IaaS Providers

Please share with us your opinion on the support of IaaS providers in STRATEGIC

Adding cloud profiles in STRATEGIC



In a scale of 1 to 5, how easy is it to use multiple IaaS providers on STRATEGIC?

1 2 3 4 5

Difficult ☐ ☐ ☐ ☐ ☐ Easy

In a scale of 1 to 5, how would you rate the flexibility that STRATEGIC provides regarding managing multiple IaaS providers?

1 2 3 4 5

Low ☐ ☐ ☐ ☐ ☐ High

Do the existing IaaS Providers meet your Multiple choice

☐ Yes ☐

☐ Some of them ☐

☐ No ☐

☐ Other... ☐

☐ Add option

Required ☐

Are there other IaaS providers that you would like to be supported?

Short-answer text

Figure 13: Screenshot of the 3rd section of the questionnaire

The 4th section focuses on the Managed Security Services that are provided. The first question asks the users how easy they found the use of them. The second question asks them to rate the provided features and the third question, asks them whether the available functionality meets their requirements or not. As in

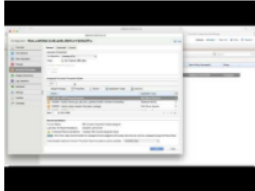
the previous section, the users can use the free text field to mention new features that would like to see supported by the Managed Security Services of the STRATEGIC platform.

Section 4 of 14

Managed Security Services

deployed services. In this regard, how would you rate the offered security services of STRATEGIC?

Intelligent Protection service in STRATEGIC



In a scale of 1 to 5, how easy is it to use the security services provided by STRATEGIC?

1 2 3 4 5

Difficult ☐ ☐ ☐ ☐ ☐ Easy

In a scale of 1 to 5, how would you rate the existing features that STRATEGIC security services offer?

1 2 3 4 5

Low ☐ ☐ ☐ ☐ ☐ High

Do the existing features of the security services meet your requirements?

☐ Yes

☐ Some of them

☐ No

☐ Other...

Are there other security features that you would like to be supported?

Short-answer text

Figure 14: Screenshot of the 5th section of the questionnaire

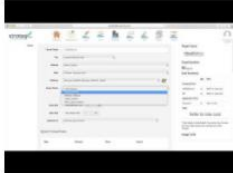
The 5th section focuses on the deployment of service through the STRATEGIC Service Store. Again, there are 3 main questions regarding the ease of use, the flexibility provided during the application deployment and the extent to which the current feature meet the requirements of the users.

Section 5 of 14

Deployment of services through STRATEGIC Service Store

The STRATEGIC platform offers the ability to deploy applications and services. In this regard, how would you rate the application packaging on STRATEGIC?

Demonstration video: Deployment through STRATEGIC Service Store



In a scale of 1 to 5, how easy do you think is the deployment of an application through the STRATEGIC Service Store?

1 2 3 4 5

Difficult ☐ ☐ ☐ ☐ ☐ Easy

In a scale of 1 to 5, how would you rate the flexibility during application deployment through STRATEGIC Service Store?

1 2 3 4 5

Low ☐ ☐ ☐ ☐ ☐ High

Do the features offered on application deployment meet your requirements?

☐ Yes

☐ Some of them

☐ No

☐ Other...

If no, what features you would like to be supported?

Short-answer text

Figure 15: Screenshot of the 5th section of the questionnaire

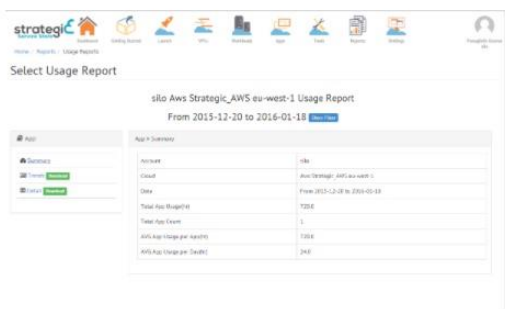
The 6th and 7th sections focus on the application packaging capabilities of the STRATEGIC platform and the monitoring of the applications. In both sections, we are interested in the ease of use, the flexibility and quality of the available features and whether the existing functionality meets the needs of the users.

Section 7 of 14

Monitoring of applications

The STRATEGIC platform provides built-in monitoring. How would you rate the following:

Monitoring on STRATEGIC



In a scale of 1 to 5, how easy did you find the application monitoring through STRATEGIC Service Store?

Difficult 1 2 3 4 5 Easy

In a scale of 1 to 5, how would you rate application monitoring in STRATEGIC?

Low 1 2 3 4 5 High

Do the existing features of application monitoring meet your requirements?

☐ Yes
☐ Some of them
☐ No
☐ Other...

If no, what features you would like to be supported?

Short-answer text

Section 6 of 14

Application Packaging

The STRATEGIC platform offers the ability to package applications. In this regard, how would you rate the application packaging on STRATEGIC?

Untitled video



In a scale of 1 to 5, how easy do you find the packaging of an application for STRATEGIC Service Store?

Difficult 1 2 3 4 5 Easy

In a scale of 1 to 5, how would you rate the flexibility of application packaging in STRATEGIC?

Low 1 2 3 4 5 High

Do the existing features of application packaging meet your requirements?

☐ Yes
☐ Some of them
☐ No
☐ Other...

If no, what features you would like to be supported?

Short-answer text

Figure 16: Screenshot of the 6th and 7th section of the questionnaire

The 8th and 9th sections are dealing with the support for government eIDs. These are optional sections and they are made available the users only if they have answered they are interested in eID integration through the STRATEGIC platform. As in previous sections, the focus here is on the ease of use and whether the existing features meet all, some or none of the users' requirements.

The 10th and 11th sections are dealing with the support for attribute exchange via the STRATEGIC platform. In a similar manner, these sections are also optional. The users are asked about the ease of preparing an application with attribute exchange integration, how they rate the attribute exchange capability and whether there are requirements that are not met already by the existing feature set.

Section 9 of 14

Section 11 of 14

Integration with government eIDs

The STRATEGIC platform provides modules to enable the integration of the applications with the STORK framework, the predecessor of the eIDAS Interoperability Framework.

In a scale of 1 to 5, how easy you think is to use eIDs integration to prepare an application for STRATEGIC Service Store?

1 2 3 4 5

Difficult Easy

Do the existing features of eIDs integration meet your requirements?

☐ Yes

☐ Some of them

☐ No

☐ Other...

If no, what features you would like to be supported?

Short-answer text

Attribute Exchange

with the STORK framework, the predecessor of the eIDAS Interoperability Framework. How you rate the following:

In a scale of 1 to 5, how easy is it to prepare an application with attribute exchange integration through STRATEGIC?

1 2 3 4 5

Difficult Easy

In a scale of 1 to 5, how would you rate attribute exchange integration through STRATEGIC?

1 2 3 4 5

Low High

Do the existing features of attribute exchange integration meet your requirements?

☐ Yes

☐ Some of them

☐ No

☐ Other...

If no, what features you would like to be supported?

Short-answer text

Figure 17: Screenshot of 9th and 11th section of the questionnaire

The 12th section focuses on whether the STRATEGIC platform meets the regulatory requirements of the users. The 13th section, tries to capture the interest of the users for the STRATEGIC platform. To this end, the users are asked to provide feedback on their overall satisfaction by the STRATEGIC platform, whether they are interested in using it and how do they believe such a service could improve the quality of the services they provide. The final questions in this section, attempt to understand whether the users would be willing to pay for a service like the STRATEGIC platform and if yes, how much and with which model.

Section 13 of 14

Interest in STRATEGIC platform

Description (optional)

How satisfied are you by the STRATEGIC offerings?

1 2 3 4 5

Not satisfied ☐ ☐ ☐ ☐ ☐ Fully satisfied

Would you be interested in using the STRATEGIC platform?

1 2 3 4 5

Not interested ☐ ☐ ☐ ☐ ☐ Very interested

In what extent STRATEGIC could improve the quality of the services you offer (by reducing cost, faster deployment time, etc)?

Long-answer text

...

In case you have used similar services before, to which extent has these services helped you improve your offered services?

1 2 3 4 5

Not helpful ☐ ☐ ☐ ☐ ☐ Very helpful

Would you be interested in paying for using a service like STRATEGIC?

☐ Yes

☐ No

☐ Maybe

If yes, in what form would you be willing to pay for the provided services (e.g. upfront, monthly subscription, usage-based)?

☐ Upfront payment

☐ Monthly subscription

☐ Yearly subscription

☐ Usage-based subscription

☐ Other...

...

If yes, what is the amount of money you would be interested in paying for using a service like STRATEGIC?

Short-answer text

.....

Figure 18: Screenshot of the 13th section of the questionnaire

The last section, gives the ability to the users to provide any other comment that they feel is relevant in a free text form.

Section 14 of 14

General Comments

Thank you for providing your opinion!

...

Please provide any other comment you would like.

Long-answer text

.....

Figure 19: Screenshot of the 14th section of the questionnaire

The questionnaire was distributed to all the SIG members and the contacts that we have gathered through other activities in STRATEGIC. Furthermore, the questionnaire was advertised at the local events and workshops and at the webinars.

3 External Stakeholder Evaluation Analysis

Overall, we received forty-eight (48) responses from in the questionnaire, out of which twenty-six (26) were from organizations that participate in the project. Out of these 26 responses, only six (6) are from people directly involved in the project.

As expected, most of the respondents are coming from Public Sector Organizations (51.1%). Cloud Application Providers are 2nd (23.4%) and then Cloud Service Providers (10.6%).

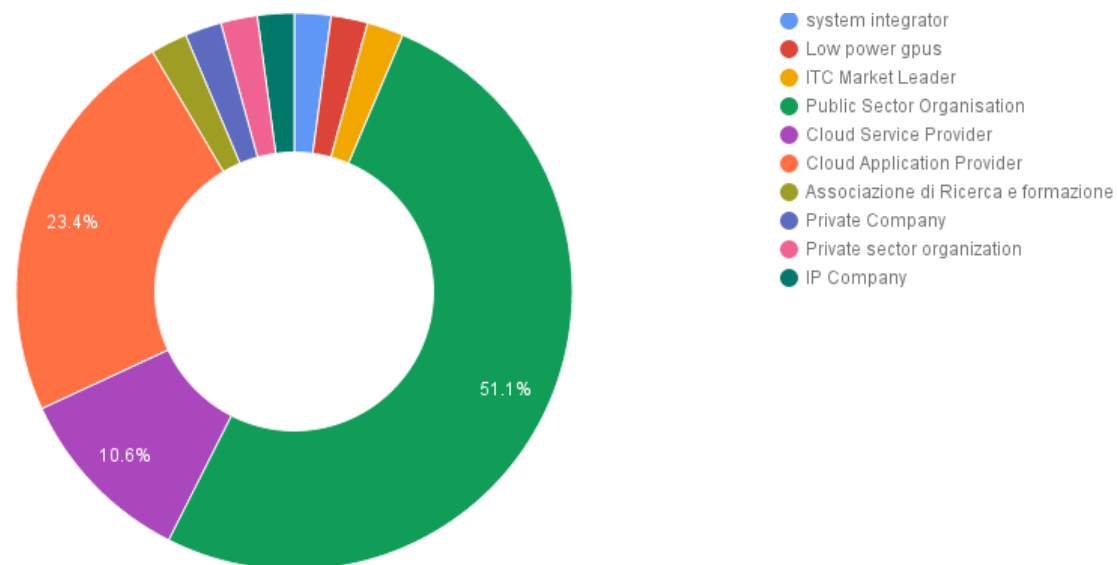


Figure 20: Types of organizations

3.1 Support for IaaS Providers

The majority of the users have reacted in a very positive manner regarding the support of IaaS provider in the STRATEGIC platform. From the responses, we can deduct that there is some room for improvement, especially regarding the user interface experience and the number of supported IaaS providers, but overall, the support for IaaS providers has been confirmed to be one of the strong points of the STRATEGIC platform.

In a scale of 1 to 5, how easy is it to use multiple IaaS providers on STRATEGIC?

(46 responses)

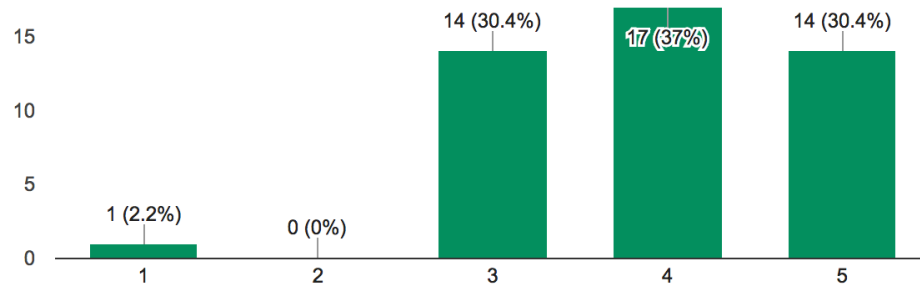


Figure 21: Use of multiple IaaS providers

In a scale of 1 to 5, how would you rate the flexibility that STRATEGIC providers regarding managing multiple IaaS providers?

(46 responses)

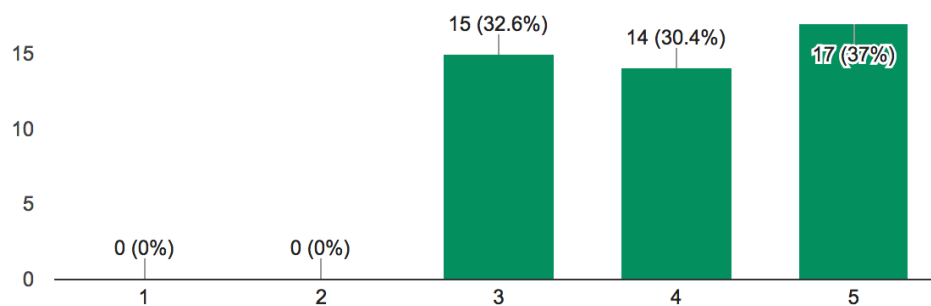


Figure 22: Flexibility in managing multiple IaaS providers

Do the existing IaaS Providers meet your requirements? (45 responses)

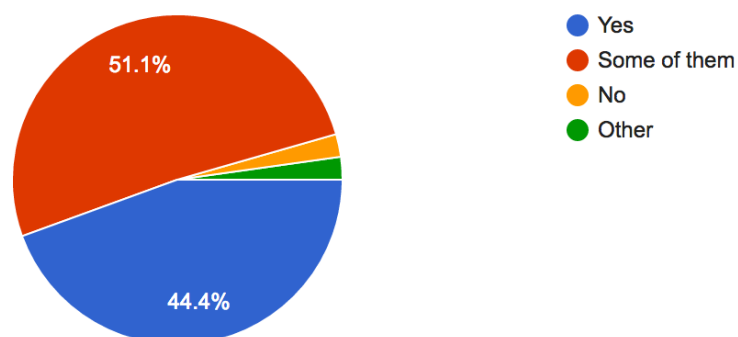


Figure 23: List of IaaS providers available

3.2 Managed Security Services

Although, typically security and ease of use are opposite powers, the results from the survey suggest that the integration of the Managed Security Services in the STRATEGIC platform has made it possible to introduce advanced security protection without compromising the ease of use.

In a scale of 1 to 5, how easy is it to use the security services provided by STRATEGIC?

(45 responses)

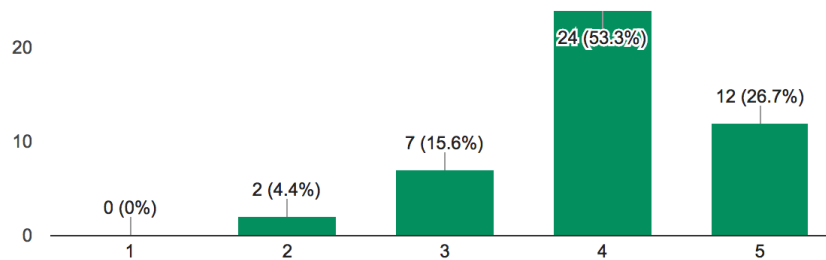


Figure 24: Ease of use of the security services

In a scale of 1 to 5, how would you rate the existing features that STRATEGIC security services offer?

(46 responses)

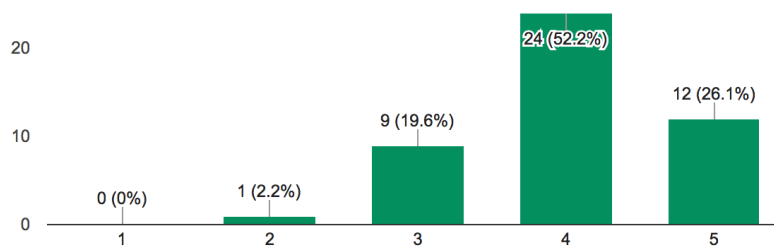


Figure 25: Evaluation of the features of the security services

Do the existing features of the security services meet your requirements?

(46 responses)

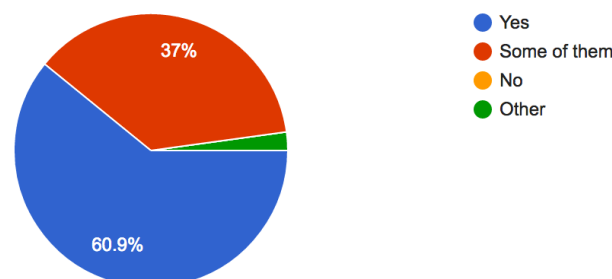


Figure 26: List of features offered by the security services

3.3 Deployment of services through STRATEGIC Service Store

As expected, deployment of services through the STRATEGIC Service Store has been reported as easy to use, although there was a ~20% of the participants who were just moderately satisfied.

In a scale of 1 to 5, how easy do you think is the deployment of an application through the STRATEGIC Service Store?

(46 responses)

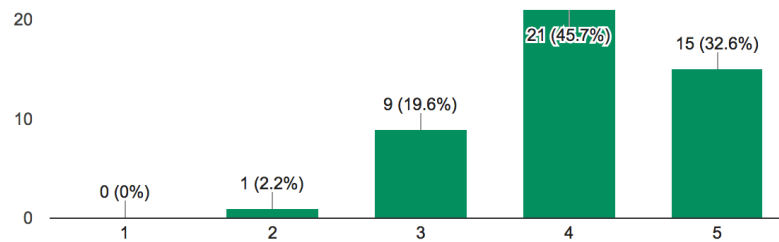


Figure 27: Ease of application deployment through the STRATEGIC Service Store

In a scale of 1 to 5, how would you rate the flexibility during application deployment through STRATEGIC Service Store?

(46 responses)

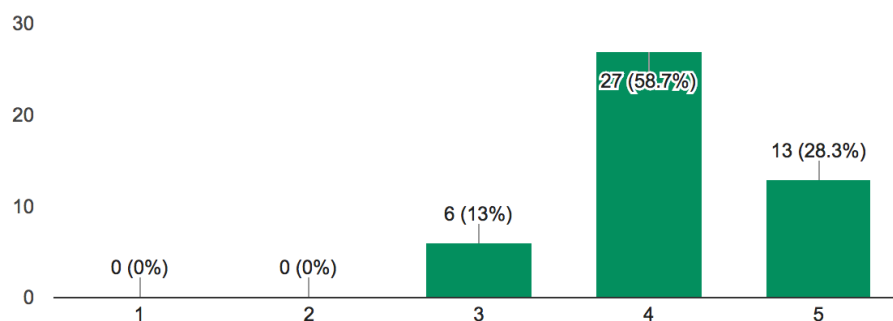


Figure 28: Flexibility in application deployment

Do the features offered on application deployment meet your requirements?

(45 responses)

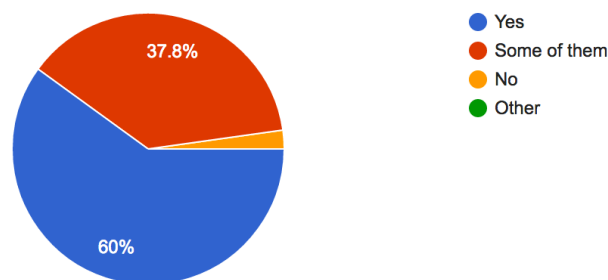


Figure 29: List of features offered on application deployment

3.4 Application packaging

The application packaging has been proven to be difficult for most of the users. First of all, the number of the people that replied in this section has been significantly less than in the previous sections. This might be related to the complexity that application packaging has, but it might be also related to the fact that few respondents did identified themselves as Cloud Application Providers.

In a scale of 1 to 5, how easy do you find the packaging of an application for STRATEGIC Service Store?

(6 responses)

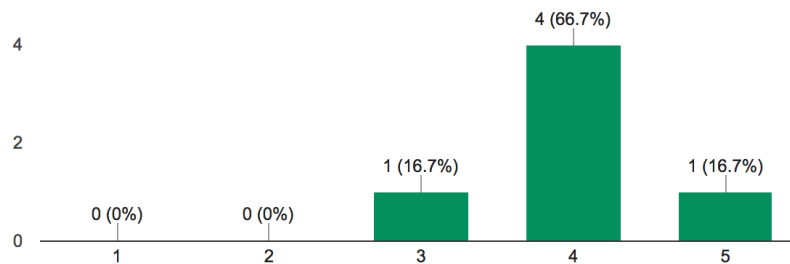


Figure 30: Ease of application packaging

In a scale of 1 to 5, how would you rate the flexibility of application packaging in STRATEGIC?

(6 responses)

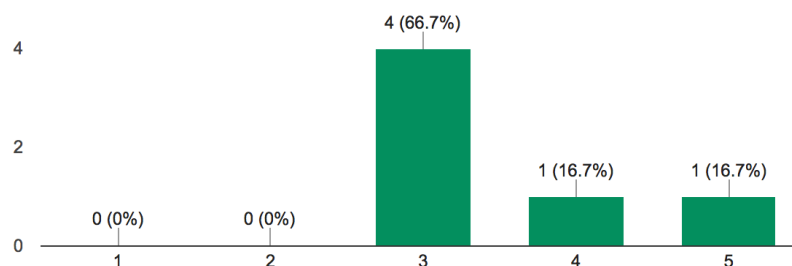


Figure 31: Flexibility in application packaging

Do the existing features of application packaging meet your requirements?

(6 responses)

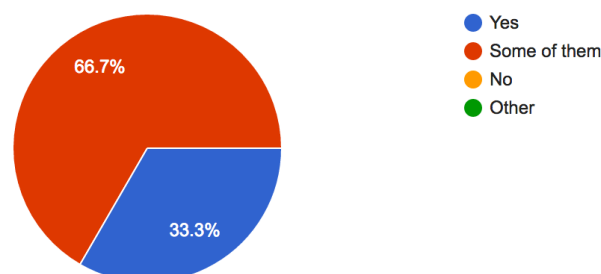


Figure 32: List of feature of application packaging

3.5 Monitoring of applications

The feedback on the application monitoring has been very positive, verifying that this aspect is one of the strong offerings of the STRATEGIC platform.

In a scale of 1 to 5, how easy did you find the application monitoring through STRATEGIC Service Store?

(46 responses)

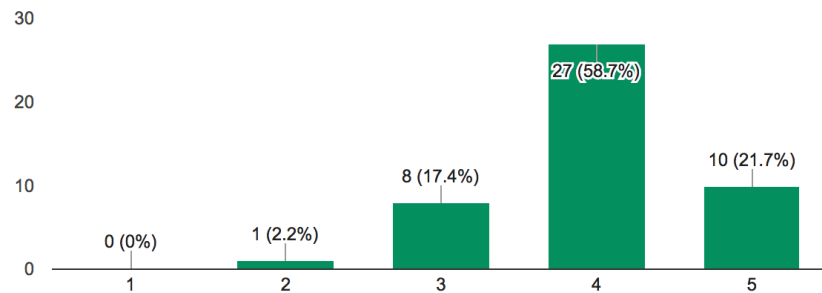


Figure 33: Ease of use of the application monitoring

In a scale of 1 to 5, how would you rate application monitoring in STRATEGIC?

(46 responses)

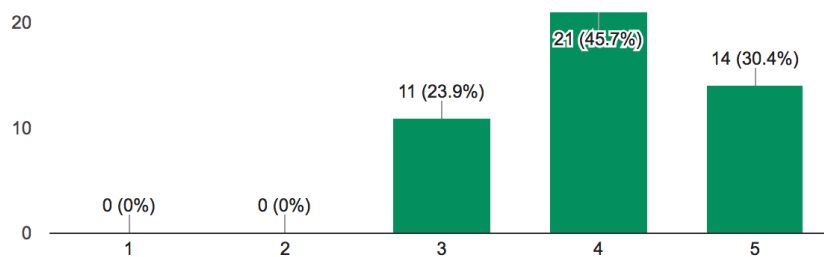


Figure 34: Ratings for the application monitoring in STRATEGIC

Do the existing features of application monitoring meet your requirements?

(46 responses)

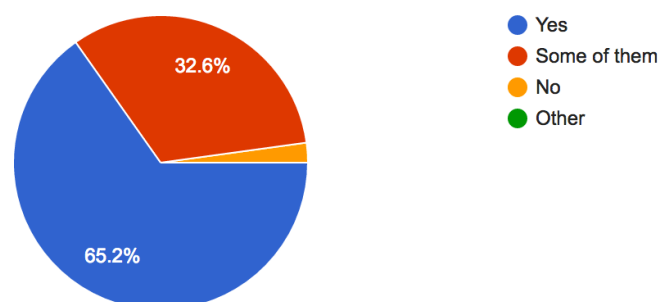


Figure 35: List of features available in the application monitoring

3.6 Integration with eIDs

The integration of eIDs was expected to be also one of the strong points of the STRATEGIC platform. Still, what we witness in is that there is very low interest in integration with eIDs. Given that the very few results give a positive note for the support of eIDs by STRATEGIC, we believe that the low interest is related to the fact that the rollouts of the eIDAS service in the Member States is still very low and thus public sector bodies, such as municipalities, do not have this yet in their radar as a pressing need.

Are you interested in using eID integration through STRATEGIC? (5 responses)

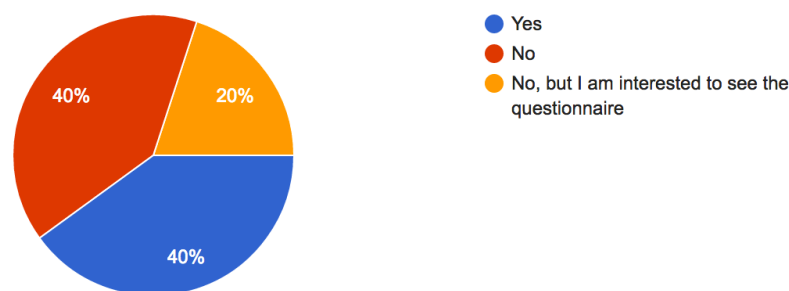


Figure 36: Interest in eIDs

In a scale of 1 to 5, how easy you think is to use eIDs integration to prepare an application for STRATEGIC Service Store?

(3 responses)

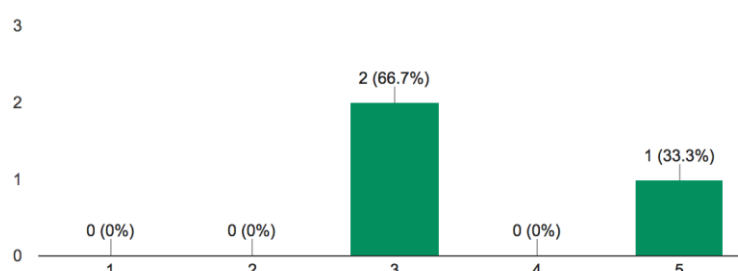


Figure 37: Ease of use of the eID integration

Do the existing features of eIDs integration meet your requirements?

(2 responses)

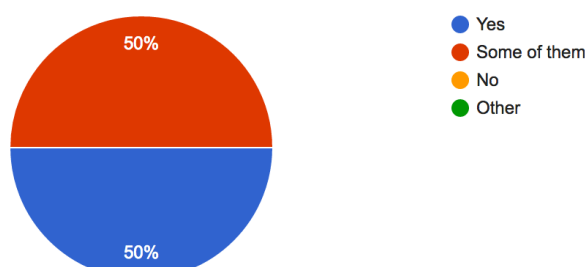


Figure 38: List of features of eIDs integration

3.7 Attribute exchange

Likewise, attribute exchange was one of the features that turned out to attract low interest from the participants. Again, we believe that this is due to the low update of the eIDAS services for the time being, although this is deemed to change in the next 2 years, as all Member States are requirements to have full deployments in place by September 2018. Having said this, the uptake of the actual functionality of "Attribute Exchange" might be even further delayed, as the current EU regulation that is in effected focuses only on the eID and cross-border authentication aspects. It is expected that attribute exchange will be also included in the near future.

Would you be interested in using the attribute exchange functionality of STRATEGIC?
(6 responses)

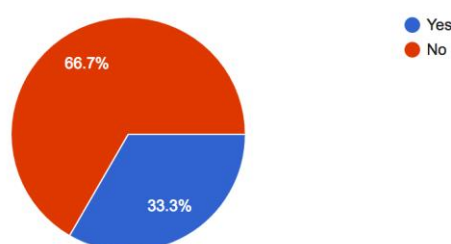


Figure 39: Interest in using the attribute exchange functionality

In a scale of 1 to 5, how easy is it to prepare an application with attribute exchange integration through STRATEGIC?
(2 responses)

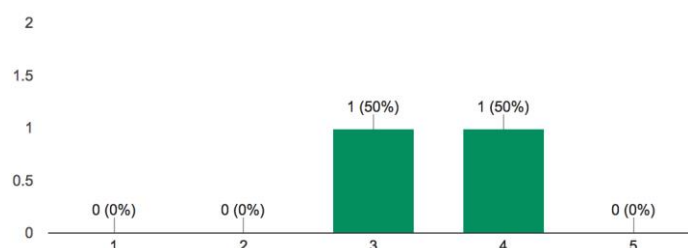


Figure 40: Ease of preparing an application with attribute exchange through STRATEGIC

In a scale of 1 to 5, how would you rate attribute exchange integration through STRATEGIC?
(2 responses)

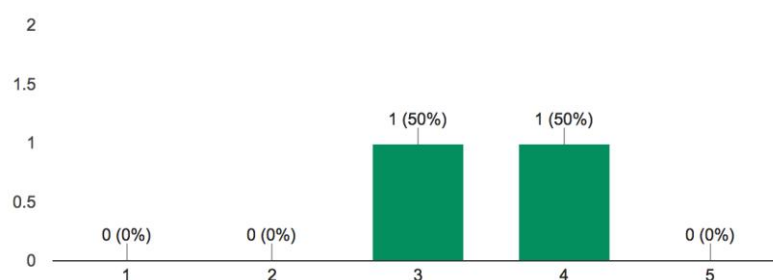


Figure 41: Rating of the attribute exchange integration through STRATEGIC

Do the existing features of attribute exchange integration meet your requirements?

(1 response)

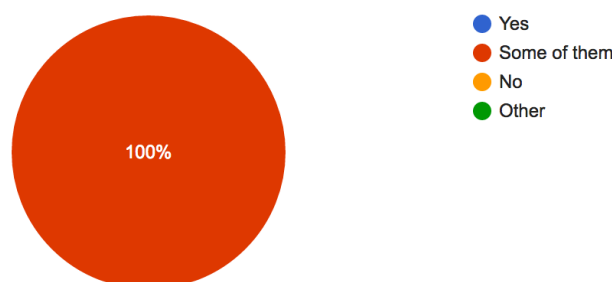


Figure 42: List of features of the attribute exchange integration

3.8 Regulatory requirements

One of the selling points of the STRATEGIC platform has been the ability to implement policies that closely follow the regulatory requirements of the public organizations by allowing the integration of private clouds, providing filtering of IaaS based on country and also by security services. This is confirmed by the very positive responses that we received regarding this point.

Will the STRATEGIC platform help you meet your regulatory requirements?

(45 responses)

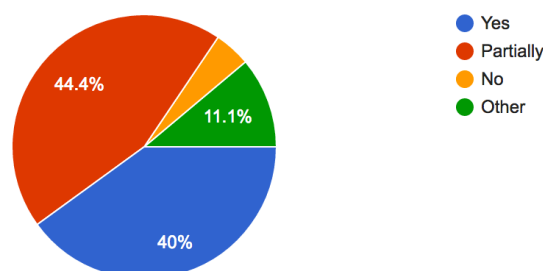


Figure 43: Compliance with regulatory requirements

3.9 Interest in the STRATEGIC platform

Overall, the participants in the survey seem to be very satisfied by the STRATEGIC offerings and most of them have declared their interest in using the STRATEGIC platform. Faster and easy to manage service deployments seem to be the main reasons for considering the use of the STRATEGIC platform by most of the participants of the survey.

Regarding the willingness of the users to pay for a service like the STRATEGIC platform, 35% responded affirmatively, 49% responded "maybe" and only 16% gave a negative response. This is a clear message that not only services like the STRATEGIC platform are attracting the interest of public bodies, but also that the ecosystem has significantly matured during the past years. Still, there is a lot of room for improvement. Finally, it is interesting to note that most of the respondents preferred the pay-per-use model, followed by the monthly and yearly subscription models.

How satisfied are you by the STRATEGIC offerings? (45 responses)

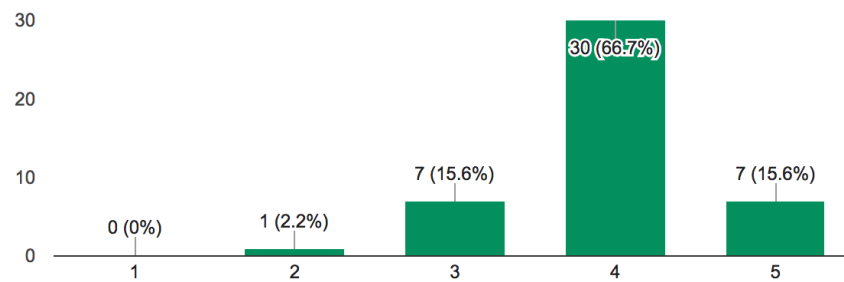


Figure 44: Level of satisfaction for the STRATEGIC offerings

Would you be interested in using the STRATEGIC platform? (46 responses)

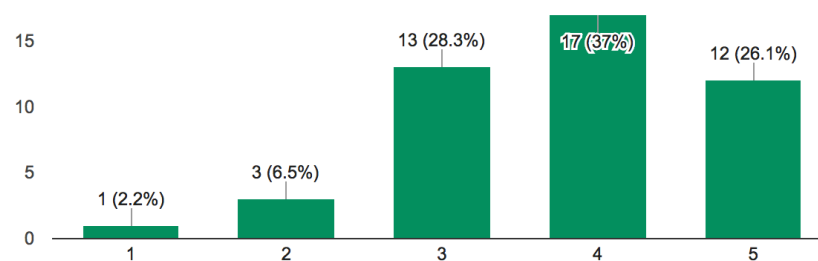


Figure 45: Interest in using the STRATEGIC platform

In what extent STRATEGIC could improve the quality of the services you offer (by reducing cost, faster deployment time, etc)?
(21 responses)

The majority of the respondents (38%) valued the **faster deployment times** as the point on which the STRATEGIC platform could have the most significant impact in their organizations. The 2nd most common response (14%) was the **reduced costs**, followed by **scalability** (10%) and **ease of operations** (10%).

In case you have used similar services before, to which extent has these services helped you improve your offered services?
(33 responses)

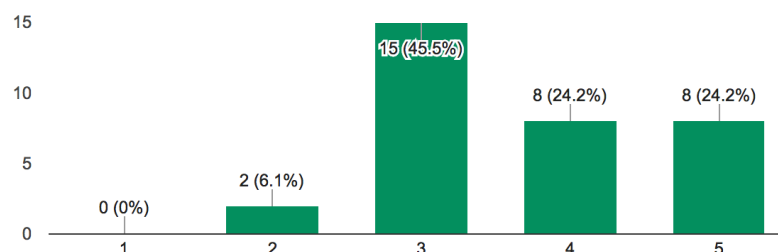


Figure 46: Improvement of offered by the use of similar service to the STRATEGIC Service Store

Would you be interested in paying for using a service like STRATEGIC?

(43 responses)

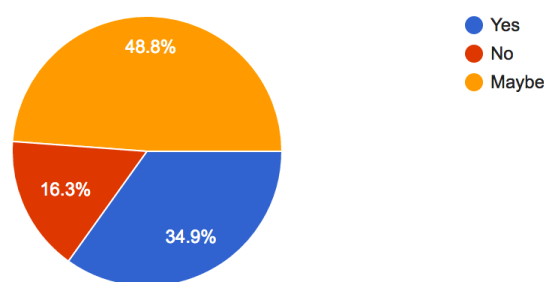


Figure 47: Willingness to pay for services like the STRATEGIC Service Store

If yes, in what form would you be willing to pay for the provided services (e.g. upfront, monthly subscription, usage-based)?

(32 responses)

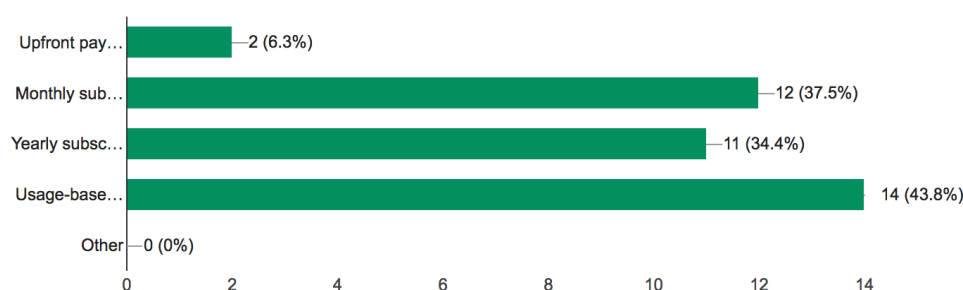


Figure 48: Preferred payment models

If yes, what is the amount of money you would be interested in paying for using a service like STRATEGIC?

(10 responses)

Depends on the volume. ~1 EUR / managed VM month
Amount related to the complexity of the deployed service
I do not know
Around up to 15% additional premium on top of budgeted costs for cloud services
10 to 15 of actual hosting cost
100\$/month
Needs individual assessment
4-5\$
It depends on the usage
200

Figure 49: Budget available for services like the STRATEGIC Service Store

4 Summary of challenges and lessons learnt

In this section, we present a summary of the challenges that we faced during the project, the experiences that we gained and the lessons that we have learnt. The section is split in two parts. In the first part, we present the views of the technical partners, while in the second part we present the views of the pilot partners.

4.1 Technical partners

From Atos perspective, STRATEGIC offers a valuable and complete solution which integrates key cloud features in one product: multi-provider, multi-tenant, strong security and data protection tools, among others, which are key technology enablers for public administrations usually not familiarised with those technologies. Moreover, partners demonstrated that the cross-border tools can be successfully implemented in cloud environments allowing the efficient and secure communication across borders. The reference implementation of the STRATEGIC platform has been carried out using a commercial solution, which provides a strong technology readiness level to the project; this has been quite positive and allowed us to incorporate the conduction of pilots earlier than expected within the project, but it has also brought some limitations to the consortium partners, which the use of open source solutions would have avoided, for example the usage of an API (originally planned but not yet provided within the commercial solution) to interact with the platform would have substantially helped technical partners to integrate assessment services at platform level. Despite this, we were able to demonstrate different ways to interact with the platform at different levels; horizontal security services have been integrated successfully at platform level through the use of the commercial API, while cross-border tools have been successfully integrated at cloud appliance level incorporated their functionalities within the Service Store. The integration of cross-border tools has provided to the STRATEGIC platform an additional value in terms of security and trust, easing the interoperable authentication in cross-border scenarios. Moreover, we have demonstrated how different functionalities can be integrated easily by public administrations in a cloud environment. In addition, it has been demonstrated through a proof of concept that it is also possible to assess the deployment of a cloud based service at platform level interacting directly with the monitoring service API as a 3rd party service

BT highlighted that the project associated technical partners with pilots in order to achieve a cloud migration experience. The technical partners were able to try application migration, and pilots were allowed to go through the migration and learn from the experience. The technical agenda of the project was decided during the first year of the project when BT was working with a multi-cloud service store and a CloudStack platform, while other partners focussed on Openstack and other technologies. Technical partners worked with their pilot partners but had fewer interaction between themselves. During the course of the project technology evolved. The industry introduced containers, and mobility became more prominent, and some major IT companies introduced landmark SaaS solutions which were impacting the IT landscape (e.g. Microsoft Azure, Oracle, SAP, Salesforce, etc.) and therefore the strategy of local governments. It is possible that more technology driven collaboration between the technical partners could have resulted in a better offer for pilots.

With regards to the engagement with the business we found that exploitation discussions were not as productive as they could have been. Although the project was not short of technical know-how, the communication between technical

partners and pilots at an exploitation level was diminished. This was most likely not helped by the fact that we were all interfacing with our respective stakeholders, instead of engaging them directly. In an ideal world, it would have been possible to have exploitation discussions happening more in the first year, and far less in the subsequent two years. It might have been possible to engage stakeholder early with some re-assurance that we were going to constantly re-align with their cloud strategy during the course of the programme.

On another note, **NICPB noted** that the technological solution of moving parts of the runtime (IaaS stacks) in-house to avoid regulatory blockers has turned out to be more of a burden and has consumed more resources than expected and delivered less of perceivable value. In our view the regulations at the moment are too protective when it comes to usage of cloud services running in a different EU country, which makes it close very difficult to deploy actual applications as part of the cloud project.

Another issue we see is the subpar innovation push coming from the public sector, most probably due to a non-agile budgetary nature of the sector. Although technical partners are the driving force for innovation, we see that it is very important that the public sector, who “owns” the problems to be solved, is empowered to make decisions that lead to changes in their processes. At the moment, the regulatory nature of selected use cases seems to be blocking many ideas for production systems.

Furthermore, an important **feedback from SILO** was that although the maturity of the Service Store, they found that trying to reach the market of municipalities in Greece was a rather challenging task. Certainly, the financial crisis contributed to this fact, as the resources of public administration was heavily restricted, so they focused more on the ways that STRATEGIC and Cloud adoption can be beneficial on cost limitation, as assessing the cost of cloud adoption is also part of the long-term IT strategy for each public organization. To this end, SILO has already contacted representatives from two municipalities that have already seen the platform in action and they currently working with them in order to offer them service deployment capabilities from the Service Store, along with hosting their IaaS cloud, for a free period of 4 months.

During the course of the STRATEGIC project, we have tried out a number of approaches and learnt from both successful and failed steps. All in all, all the technical partners have received a lot of experience in understanding the lifecycle of IT systems in the public sector.

An important lesson learnt is therefore that on a technical point of view the technical partners could have intensified collaboration in order to update their technical offer and re-align to the strategy of pilots during the course of the project. The other lesson is about engaging exploitation discussion early in the programme so as to obtain a stronger commitment from stakeholders.

Overall, STRATEGIC has brought very valuable experience in a highly active application migration market. This project has taught us what challenges need overcoming, and what aspects are clearly important. We are now better able to appreciate migration challenges and we gained some specific experience in migrating local government applications and data. We have seen that the ability to add security component is very important and this is an aspect that will be strengthened.

As URNS pointed out, something else which also became apparent through our interaction with the pilot partners and the external stakeholder at the local events

and workshops, was that in many public bodies, like the municipalities we are targeting, the migration towards and utilization of cloud services is low on their priority list as there are other non-IT related issues, which are more pressing and prevent them from focusing on a long-term IT strategy.

Marketplace-like solutions, such as the STRATEGIC Service Store, are certainly the way to go. And by marketplace we refer to not only the ones providing a type of service catalogue, like the UK Government G-Cloud/Digital Marketplace, but also providing real-time management of multiple cloud infrastructures and services and furthermore a wide selection of applications, which are relatively easy to configure and install, like with STRATEGIC. Furthermore, the monitoring and life-cycle management of the services and applications is also possible. STRATEGIC is thus well-positioned in terms of exploitable assets and solutions.

Finding suitable clients, in the public sector or beyond, is however another story. Organising a series of workshops around Europe, already gave us a good idea of the diverse and complex landscape of public bodies: there are different sizes, different maturity and with different internal structures and organisations. In some cases, usually in more technologically-advanced countries or in big cities, marketplace such as STRATEGIC are considered a good offering which is needed or will be needed in the near future. However, there are other countries or cities, even in the same country, where this is not the case, and it will take some time to reach the level where a solution such as STRATEGIC will be a real need. In such cases, there are more basic needs. Having a complete picture of the European landscape is very difficult, but the easy solution would be to start from the big cities in Europe, especially in technologically advanced countries.

An important issue that was raised during the workshops was that municipalities prefer to adopt standard or tested solutions. For this reason, the STRATEGIC pilots and the experiences gained play an important role when approaching other municipalities. Having an existing use case and the STRATEGIC solution adopted inside a municipality is thus vital and will act as a showcase for future installations.

4.2 Pilot partners

For Camden one of the crucial lessons learnt from the project was the misjudgement of the depth and complexity of some of the use cases. During the planning stages of the use cases members of Camden had to decide their roles within the project and set deadlines for the proposed tasks. However, the complexity of the task seemed to be underestimated, hence some delays with the deliverables. For example, the scripts had to be adjusted several times due to the different results produced on each virtual machine. Furthermore, if we are involved in similar projects in the future we would allocate more resources and time to testing applications.

What to offer to other stakeholders (possible commercialization)?

In anticipation of future projects Camden discussed which other applications should be deployed to the cloud. One of the technical lessons learnt from the project was that Tranzacct is a very complex that requires a lot of different software packages installed before be able to run successfully on a virtual machine. If we had known the extents of complexity beforehand then we may have selected an application with a small footprint and less technical requirements. Currently Tranzacct needs a minimum of SQL server2008, Internet Information Services 6, .NET Framework, ASP Management and a MVC Windows

update to be deployed and pre-installed before on running on a virtual machine in the cloud.

We also have a new upgraded version of the currently deployed application (Tranzacct) that could possibly replace the old version within the service store. However, this will only be developed and deployed if we continue work on projects with the service store in the future. In terms the most efficient ways to attract possible public administration bodies as customers we believe that Tranzacct is a good application to attract customers due to the nature of its administrative features and processes.

In regards to the usage of the Strategic Service Store, it seems to be able to successfully host/deploy applications in the cloud and configure virtual machine with a cloud environment. However, based on user feedback there seems to be slight performance issues which will be detailed in the recommendations section. The automation process of deploying applications on a can be very complex due to the script behaving different in multiple virtual machine environments.

Recommendations

In order to alleviate the stress on the technical support there should be a FAQs page with links to documents that could assist because currently there is only a webpage with an email request form.

In order to improve the user experience of the service store website the developers of the webpage could consider adding the option to choose additional applications that can be deployed onto the selected virtual machine. Currently the only way to do this is by capturing a server image with the applications you want pre-installed.

The performance speed and responsiveness can be improved; long loading speeds can cause users to re-click buttons with the webpage extending the overall loads time which results in a negative experience for the user.

The technical documentation could be improved and made more accessible for the service operators.

For Genoa, there are some aspects of this project that can be generalized and considered a valuable lesson learnt.

In terms of involvement of stakeholders we observed that it is easier when you can show something that has an appealing in one or more of the following aspects: depicts a scenario similar to those of the stakeholders, has some characteristics peculiar that differentiates what is shown from other product/services, it has a clear benefit in terms of costs compared to other product/services, it is inherently easy to understand, it is sufficiently widespread (only few like to be "innovators", most prefer a well-defined and already tested situation).

The above-mentioned aspects are not only common-sense requirements but emerge from what we collected on various activities.

Other lessons that emerged from our experience has to do with the work process that leaded us to some delay especially with regard to the private IaaS implementation and integration with the Service Store.

Especially during the last year there were many different stages and requirements changing related to the implementation of the IaaS. The initial idea

of an installation of Openstack JuJu by means of MaaS has been subsequently switched to a new Ubuntu and Openstack version with better features. That forced us and the technical partners to a restart.

Many little changes, adjustments and also new HW requirements have been asked among which, lately, the acquirement and installation of a new hard drive to take into account for the Cinder service and the acquirement of a new NIC in order to access the IaaS subnet from the Service Store that had to be integrated.

Usually the blame for the delays or difficulties in deploying software for Public Administrations is put on the lack of expertise of the Public Administrations or even of the efforts made. But this can't be the case for Genoa. Generalizing it can be said the medium-large cities have skilled personnel to carry on the required tasks with the necessary professionalism.

What has been apparent to us is that in spite of Genoa and SILO (the tech partner) have been working a lot, the continuous change in requirements and requests has been detrimental to the IaaS/Service Store deployment process. Note that this is neither a lack in expertise on both sides nor a lack in effort on both sides. The main lesson learnt is that in dealing with Public Administrations of medium-size like Genoa is that it is surely preferable, at least when possible, to draft a clear list of complete requirements (both in term of material resources and tasks to be accomplished) given in the least possible chunks instead of many little tasks. This is easily explained by considering that each task to be accomplished follows a first-in-first-out ticket queue processing by PA personnel. Also, regarding the material resources to acquire either a tender or some kind of internal agreement needs to be made and that requires time.

For MoSG, the main lessons learnt are around the following topics:

- Choice of corresponding IaaS
- Applications for the production phase (exploitation)
- What to offer to other stakeholders (possible commercialization)
- Usage of STRATEGIC service store

Choice of corresponding IaaS. During the second year of the STRATEGIC project, applications for MoSG have been deployed on the IaaS provided by the singular Logic (SiLO) – the technical partner of MoSG for the STRATEGIC project. In the third year, when the applications have been implemented in the production phase with real customer data, the IaaS has been provided by the corresponding provider from Serbia (Orion Telekom). However, during the implementation of the IaaS in the production phase (third year of the Project), there has been some difficulties that has to be resolved in order to make the applications properly installed and deployed. This process has raised an IaaS dilemma regarding which of the following options for the IaaS implementation is the most suitable for the public administration entity, such as Municipality of Stari Grad (MosG):

1. Purchasing own IaaS and maintaining it internally – in own premises
2. Purchasing own IaaS and maintaining it in the provider's premises
3. Renting VMs and install OpenStack and applications
4. Renting VMs with some cloud infrastructure and install applications

5. Renting physical machines and install OpenStack and applications

Based on experiences gained during the third year of the project, a prevalent opinion is that the options 2 and 5 are the most acceptable for some municipalities/public administration body like MoSG and should be further evaluated after the production phase.

Namely, it is experienced that, although it is very common that providers offer VMs, it is very difficult to establish cloud infrastructure based on them because of the lack of performances the VMs offer for establishing the IaaS which is powerful enough. Thus, providing physical machines or providing the already established cloud infrastructure are the most important requirements for the provider. A problem is that it is not so common especially in Serbia that hosting providers offer neither the cloud infrastructure nor physical machines. Thus, for municipalities/public administration bodies, possibly the most acceptable recommendation is the above-mentioned option 2.

Applications for the production phase (exploitation). Based on experiences gained in the STRATEGIC project, besides the current applications evaluated during the STRATEGIC project, recommendations are that new possibly more “killer” applications which could attract more customers should be considered and evaluated for possible exploitation phase. This process of evaluation market and finding the most attractive applications should be continuous.

What to offer to other stakeholders (possible commercialization)? After the project end, there should be further discussions in place related both to which applications should be exploited by the MoSG itself and which of them could be offer to other municipalities or public administration bodies. The mentioned discussions should include considerations of the possible exploitation and commercialization aspects that are related to:

- the choice of corresponding IaaS that should be used,
- most attractive applications that should be offered both to exploit and to commercialize,
- the role of the STRATEGIC platform in these processes and what are the most efficient ways to attract possible public administration bodies as customers.

Usage of STRATEGIC Service Store. Regarding the usage of the STRATEGIC Service Store, some feedbacks gained from the STRATEGIC project are: overall very general positive feedback, many applications could be chosen, easy to adapt and deploy applications, possible extensive configuration of security features, relatively slow UI, VPN connections could be more efficient, etc. However, a recommendation is that the service store should be the mandatory part of any cloud project for the public administration body no matter if this is implemented as the private, public or hybrid cloud. How exactly it should be deployed, whether in-house or outsourced and what technology should be used, should be further considered and evaluated. Also, possibly more efficient ways of secure connections to the service store, such as SSLVPN access or similar, should be further considered and evaluated.

5 Conclusions

The evaluation of the STRATEGIC platform by external stakeholders posed new challenges and required us to develop a different strategy from the one we used during the evaluation by the internal stakeholders. The experience from the internal evaluation was proven to be very valuable, especially regarding the proper design of the questionnaire.

In this iteration of the deliverable, the questionnaire remained central to gather the evaluation feedback from the stakeholders, but it was also complemented by targeted, informal, in-person interviews with stakeholders at local events and workshops organized by the STRATEGIC partners for the purposes of this evaluation. These activities have been crucially important as they gave us the ability to closely interact with the representatives from external stakeholder organizations and to establish new communication channels. The STRATEGIC SIG, has been the central communication channel for promoting the STRATEGIC platform. In addition, the partners have been active in mobilizing their own communication networks with key stakeholders, which has resulted in increased membership requests for the STRATEGIC SIG. The SIG now counts 48 members, from 32 organizations and 16 countries.

Overall, 21 local SIG events and workshops were organized in Greece, Estonia, Italy, Serbia, Spain and the UK, ranging from focused 1-1 meetings to hands-on workshops with 10-30 participants. Through the SIG events, the webinars and the effective communication management, we have managed to reach out to key external stakeholders and make them familiar with the STRATEGIC platform and its potential. This resulted in high quality feedback from all the participants that has helped a lot to extract key messages regarding the STRATEGIC platform. A summary of the main feedback received can be found in the points below:

- The STRATEGIC platform provides an easy to use and flexible offering that already meets the key requirements of most of the key stakeholders.
- The support of IaaS providers, the deployment of services and the monitoring of the application are very strong points of the STRATEGIC platform.
- The extension for Security Services, is also another unique offering of the STRATEGIC platform, which manages to provide, strong and seamless security protection without compromising the ease of use.
- Application packaging remains a daunting task, even though the STRATEGIC platform has taken great leaps in order to make it easier and flexible. Still, there is still a lot of room for improvement.
- Integrations with eIDs and the support for attribute exchange, are considered to be strong points of the platform, but the overall ecosystem is not mature enough for the adoption of these services. As eIDAS services are being delivered across the European Member States, these capabilities of the STRATEGIC platform will become more and more attractive.
- The ability of the STRATEGIC platform to adapt to the regulatory requirements of the public bodies is considered to be a major plus.
- The public bodies, cloud service and application providers we have been engaging with, clearly see the benefits from the use of service like that the STRATEGIC platform and the vast majority of them is willing or is considering of paying for getting such services.
- The most appealing and tangible benefits of the STRATEGIC offering for the public bodies seem to be (a) the faster deployment cycles that can be achieved through the STRATEGIC platform as they also lead to reduced

time to market; (b) the reduction on the overall costs for operating and using IT resources; (c) the scalability patterns that can be implemented by taking advantage of the elasticity the cloud offers and which is taken to the next level by the multi-cloud capabilities of the STRATEGIC platform; and the ease that the STRATEGIC platform provides for day to day operations, and which has direct impact to both the deployment speed and the operational costs.

- The fact that there was no clear pricing model for the STRATEGIC offerings had a negative impact to potential customers of such services. Concerns were voiced both by the pilot partners and by external stakeholders. This has been addressed in D8.3b [7].

6 References

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- [13] STRATEGIC Value Proposition video -
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