Cloud computing: an effective model for the dematerialisation of Italian public administration

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\section*{Abstract}

Cloud Computing is the new technology introducing new economic and social challenges for the ICT sector. The interest in Cloud Computing has been rapidly growing since the last two years. Not only companies, but also institutions and research bodies start to see how useful it can be for their activities to use the different services offered today by Cloud Computing infrastructures. Within the context of dematerialisation, as stated by the Italian law of 7 August 1990, n. 241 and D.Lgs. 12/1993 n. 93, it is required to the Public Administration to reuse computer programs or their parts, developed on behalf and at the expense of the same or other administrations”. However, over time have not yet been achieved considerable results in terms of software reuse. The Cloud model can help to develop efficient economic results for the PA. Indeed, the Cloud Computing infrastructure eliminates the problems related to the portability and it can be enabled for multi-tenancy, to be used by different institutions, producing relevant time and costs savings. The Public Administration is undergoing a profound transformation oriented towards the citizens’ satisfaction. Within this context, the paper is aimed at raising awareness of the Italian Public Administration on the rationalisation of resources and reduction of administrative costs. In order to identify the Cloud Computing model to be adopted within the Italian PA, we explore the actual Cloud Market, pricing strategies and SLAs.

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\textit{Keywords:} Cloud Computing, Dematerialisation, PA, Pricing, SLAs

\section*{1. Introduction}

While some authors argued that Cloud Computing is a new technology, many others stems that the only real novelty of Cloud platforms is related to their pay-per-use business model, especially regarding the capability to generate economies of scale. Currently, not only the companies, but also several Public Administrations in Europe have start to understand how useful the different services provided by Cloud Computing platforms can be.

Within this evolving context, the European Commission, through the “Digital Agenda for Europe 2020” is expanding the fields and the potential development of this model. The main objectives of the “Digital Agenda 2020”\textsuperscript{2} are:

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- to increase the participation of citizens and consumers in the digital society
- to ensure widespread access to high speed broadband for the entire European population
- to achieve the goal of creating a fully interconnected society
- to increase the skills of the digital society
- to implement new regulations in order to ensure the development of a single, open and competitive digital market.

With reference to the Cloud Computing infrastructure, the Digital Agenda 2020 requires the European Commission to implement the open standards for increasing the interoperability and deployment of these platforms. Moreover, the Digital Agenda 2020 supports the relevance of the Cloud infrastructure to encourage innovation and develop new energy models. In this regard, it is important to emphasize the great possibilities offered by these infrastructures in terms of software reuse. Through the Cloud infrastructure, it is possible to achieve the objectives mentioned in article 68 of CAD supporting: “The Public Administration in the preparation or acquisition of computer programs, adopts IT solutions, modular whenever possible, based on functional systems disclosed in accordance with article 70, which ensure interoperability and application cooperation, and enable the representation of data and documents in multiple formats, including at least one open-ended, unless there are motivated and exceptional needs”.

The new values guiding the Public Administration are transparency, efficiency and participation. The complete realization of this process can only be achieved through an effective increasing in quality of services, listening and engagement of citizens. Besides, today there is the urgent need to reduce the administrative costs, in order to achieve important economic objectives in the short term. The Italian Public Administration is facing enormous challenges in order to build a long term strategy capable of delivering the benefits required from the government and citizens, evaluating and reducing the potential regulatory, economic and environmental risks. As regards the Public Administration, the benefits generated by Cloud Computing refer mainly:

- to the capability of having a larger amount of applications and services conveyed as “commodity” through a pay-per-use model
- to the ability to move to other Cloud Computing providers at any time, and so benefit from the high flexibility and freedom
- to the possibility to have simple interfaces.

In economic terms, the greatest benefits are related to service cost’s reductions, which are also more transparent. The services are also valued in terms of quality of performances and develop a competitive market formed by several providers motivated to continuously innovate and improve the value of applications and services offered. Cloud Computing can also produce significant benefits for citizens in terms of increased accessibility and availability of documents, data access for people with disabilities, ability to participate in public calls without acquiring any software or license. In this perspective, the Cloud Computing infrastructures can indeed act as a winning solution for an effective renewal of Public Administration, wishing to actively participate in the development process of open and transparent governance. The transformation process will not be instantaneous. The results of this technological challenge can only be achieved through a strong and consistent long-term Roadmap to be developed in collaboration between three major players: the Public Administration, citizens and the IT industry (providing secure and comprehensive services tailored according to the evolving needs of the Public Administration).

2 http://ec.europa.eu/digital-agenda/
The most relevant criticisms related to the Cloud Computing infrastructure are specifically concerned with legal issues in terms of data security, privacy, identification and access of users, copyright and Intellectual Property. The Italian government, the IT industry and the Public Administration should launch intensive effort to modify the legislation on Cloud Computing, but also to achieve a common policy in order to secure access and transfer of sensitive and personal data of citizens and customers. There is an urgent need to consider contractual issues with the Cloud provider and potential impact of ICT infrastructures and services. The Cloud provider has to guarantee interoperability between different Public Administration systems, data portability in case of transfer to another provider and interoperability within Cloud and simple infrastructures. For the Public Administrations should be developed shared governance models and interoperability standards for Cloud management interfaces and data formats conveyed within the Cloud infrastructure. The new emerging paradigm of the Public Administration, that many authors called as “g-Cloud”, should be implemented and managed through a common and coherent strategy that must be aligned to the type of data processing required by the users and interactions needed for each Administration using Cloud infrastructures. The higher benefits developed by Cloud Computing can be increased by the development of the “network”. Indeed, the Public Administrations by creating consortia can use a consolidated service, generating significant economies of scale and increasing resource efficiency.

2. Italian Cloud initiatives for the public sector

According to the Global Cloud Computing Scorecard (Business Software Alliance, 2012), which drafted a global ranking of countries prepared to deploy and use Cloud technologies, Italy in 2012 was the third in Europe and the sixth in the World. Japan, USA, France, Germany and Australia are in the first places of the Global Cloud Computing Scorecard. The research was based on several indicators, mainly related to the quality of infrastructures and effectiveness of the Italian legislations in terms of Cloud Computing cybercrime and privacy security. According to the report: “Italy has a modern electronic signature law, though difficulties with implementation. It also has modern electronic commerce laws, and Italy is committed to international standards and interoperability”.

A negative element of the Italian government for the full adoption of Cloud technologies is constituted by the slow bureaucracy, for instance the legislation on the digital signature while is in line with the international standards often encountering problems in its application.

The Italian favourable conditions for Cloud technologies are adequately exploited, as revealed by an IDC report, which has taken a sample of 1118 firms with more than 50 employees and noted that 25.4% of them have already adopted one or more Cloud technologies. Unfortunately, in terms of adoption of Cloud Computing technologies for the Public Administration, we have no positive data. Indeed, Italy is in delay in adopting infrastructures, platforms and applications residing on the network rather than on corporate servers. In addition to the physiological delay related to the decision, there is also the lack of central governance. Compared with the growing attention that the US federal government is devoting to the optimization of technological resources, and the adoption of Cloud Computing technologies in Northern Europe, in Italy the PA is far behind. Except for the use of Twitter by the cities of Rome and Turin, and for the use of Google Maps and Google Transit by the Tuscan Region to facilitate the movements of citizens, the Italian government has not yet developed a unified project involving the use of Cloud Computing solutions.

The Italian Cloud and ICT as a Service Observatory of the Politecnico Institute of Milan (Corso M., Mainetti S., Piva A., 2012), analysed in 2012 the evolution of Cloud Computing in Italy, through an empirical research involving 35 Public Administration. In-house companies validated the results of the surveys. According to the Observatory, Cloud could be very useful for the Italian Government:

- to reduce costs and to move to a new IT paradigm
- to lower the critical mass of investments and skills required
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- to allow the small Governments to access and benefit from a widespread digitisation.

However, the analysis of the current technological situation of Italian Governments shows a fragmented infrastructure and mainly inefficiently handled. Looking at the current Data Centre scenario, an important source of cost and complexity is involved in managing the IT infrastructure, as the central Government has 1033 Data Centres, plus 3000 Data Centres of local Governments and Health. The hardware of these Data Centres is managed unevenly and is used only for a fraction of their potential, with a use of the virtualisation techniques only for a 25% of their potential. Furthermore, on this hardware there are mostly legacy applications, written in outdated languages and expensive to maintain. Consequently, the IT spending although not high in absolute terms, is inefficient and hiding management costs approximately per 1 billion Euros a year for human resources management and the energy expenditure is estimated at 270-300 million Euros.

However, the Italian Observatory outlines the possibility for a transformational process of the Italian Government which is composed by the following steps:

- rationalisation of the infrastructure
- reduction of energy consumption of Governmental Data Centres
- reduction of servers’ cost through a rationalisation of the hardware.

According to this research, by following the scenario of rationalisation and considering these three main aspects, in five years, the Italian Government could achieve a saving of 3.7 billion Euros. Moreover, if the local Governments will start to use the virtualisation techniques more widely, they will overcome the 1 server – 1 application paradigm and the benefit could grow to 5.6 billion Euros. The process of rationalisation of resources through the Cloud infrastructure will require a set of actions, including the rationalisation of the infrastructure (Data Centres) to guarantee medium-term returns fairly easy to quantify, removing the scepticism and pushing the Government actors to the action.

However in Italy, during the 2012, several positive initiatives were initiated for the adoption of g-Cloud infrastructures. For instance, one best practice is related to the Health sector, where the debate is more active. Indeed, several Local Health Authorities (ASL) tested online payments solutions and adopted Cloud technologies (ULSS of Asolo). Many authors support that the slow adoption of Cloud Computing technologies by the Italian government is related to a lack of the legislation. The Global Cloud Computing Scorecard has shown that this is not the real reason. In Europe and above all in Italy, where the competition between private providers is not yet as developed as in the USA, it is needed to avoid the constitution of a monopoly in the provision of Cloud Computing services.

In this sense, in May 2012, the Italian guarantor for the protection of personal data has drawn the vademecum: “Cloud Computing, proteggere i dati per non cadere dalle nuvole” (Garante per la protezione dei dati personali, 2012), a short guide for companies and the Public Administration, in order to reflect on several relevant legal, economic and technological issues on the adoption of Cloud Computing infrastructures and to promote a correct use of computing services. The vademecum provides an analysis of the International legal framework, reaffirming the urgent need to update the legislation, particularly in reference to the adoption of distributed computing services and data storage. In order to spread the full potential of Clouds, the Italian government will create an updated and integrated national legislation for the correct processing and transfer of personal data outside the European Union. The Italian Government supports the need to specifically assess costs, risks and benefits of Cloud Computing.

3 https://www.ulssasolo.ven.it/
technologies in order to ensure data security. To this end, the Italian Government provides a set of guidelines that private companies and the Public Administration need to adopt and integrate into their Cloud Computing strategies.

At the same time, also DigitPA (DigitPA, 2012) has published a set of recommendations and proposals on the use of Cloud Computing technologies in the Italian Public Administration. DigitPA is actively contributing to the development of European initiatives, with specific reference to the implementation of European strategies at national level through the Digital Agenda 2020. DigitPA lists several potential risks in the Cloud and provides a set of risk management tools identified by ENISA⁴, the Cloud Security Alliance and the US Federal Government. Only by addressing the previous guidelines and recommendations, the Italian Public Administration and private companies can achieve a common policy strategy, in order to secure access and transfer of sensitive and personal data of citizens and customers. After the publication of the Vademecum, in August 2012, the Italian Region of Sardinia was chosen to become a national model in the field of ICT innovation and Digital Agenda (European Union, 2013). Sardinia is the first Italian Public Administration that implemented a node on a Cloud Computing platform to create economies of scale, reduce costs and reset the timing of delivery of government services for citizens and companies. The data centre will allow Sardinia to play a leading role in the national g-Cloud implementation plan and at the same time to strengthen its strategic plan concerning the efficiency and modernisation of the school. This process will be achieved through a digital creation project based on an optic fibre infrastructure connecting the island through broadband networks and validating all the g-Cloud services of the Region. The objective of this procedure is to find a common ground between local and central government.

Within this context, the Computer and Information Service of the Province of Perugia were nominated for the national e-Gov 2012 award. The main objective of this service was to initiate a safe and useful dematerialisation process through the digital signature of resolutions and ordinances. The Province of Perugia has also set up software for the publication of open data defined by the recent Italian “Development Decree”. In this perspective, it is interesting the application of the “All In One Touch” that will overcome the permanence of the workplace through Cloud Computing technologies and will allow the production of documents through the use of smart phones and tablets. In terms of future development of the service, the scope will be to replace the licensed software with open source software, in order to produce huge cost savings and greater efficiency.

3. Analysis of the g-Cloud Computing market and actors

According to Gartner, the cloud-based services will reach $4.2 Billion Euros in 2016. The global Cloud Computing market is expected to grow at a 30% CAGR⁵ reaching $270 billion Euros in 2020, concludes the latest research report covering the Cloud Computing products, technologies and services for the global market. In the opinion of Market Research Media (2012) that provides a long term forecast, with reference to the g-Cloud Computing, it will grow at 6.7% CAGR, by generating $118 Billion Euros in revenues over 2015-2020. With reference to the US Federal Cloud Computing strategy, the Government foresees a 16% CAGR over the period 2013-2018 and the US Cloud market will reach $47 Billion Euros. These data confirm the economic relevance of Cloud Computing technologies, also for Governments to reduce the operational costs.

Cloud Computing will certainly play a relevant role for the future of the Information Technology, and consequently of IT investments. Richard Stallman (2008) of the Free Software Foundation defines Cloud Computing as a marketing campaign, underestimating the economic and organisational benefits related to this technology.

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⁴ www.enisa.eu
⁵ Compound Annual Growth Rate
Currently, the economic crisis has caused the reduction of huge investments aimed at creating new services or at transferring the knowledge required to manage Cloud services. A research of the School of Management of Politecnico of Milan (Linea EDP, 2011) states that in Italy there is still not a widely accepted organizational culture about Cloud Computing, however the interest is becoming greater. The slow growth of production does not allow Italy to have a balance in the international commerce, where is losing the power, also as exporter.

Moreover, according to the CEBR (Centre for economics and business research, 2010), research, the growth of the internal demand will still be weak, under 1% until 2015. Within this negative scenario, Cloud Computing can be a relevant driver for investments, in order to help national economy. The research from CEBR also supports that Cloud Computing benefits from 2010 to 2015 can produce an increase of 1,76% of the Italian gross domestic product.

According to a research of the “Cloud & ICT as a service observatory” (Scuola del Politecnico di Milano, 2013) the Cloud market in Italy in 2012 was accounted for 443 millions Euro (2,5% of the total IT expenditure), with an increasing of 25% per year. The research was based on a sample of 131 big companies and 660 SMEs. The main driver for the adoption of Cloud in Italy will be constituted by the private Cloud for 36,7% within the IT departments, followed by the Hybrid Cloud (34,4%). The business world will mainly adopt public Cloud. According to the forecast, Italy will reach 23,3% of the economic benefits in 2015. Private Clouds will produce the greater benefits, 54,4% of costs saving by 2015. Hybrid Clouds will generate the higher earnings, 31,7% by 2015. Public Clouds will contribute only for 12,9%. IaaS is accounted for 120 millions Euros, SaaS 65 million Euros and PaaS 10 million Euros. Alessandro Riva\(^6\) supports that in Italy Cloud is mainly adopted by big companies (67% of big companies already adopted Cloud solutions, of whom 56% uses at least one Cloud service and 11% is experimenting Cloud. The 25% of big companies is interested in adopting Cloud services and only 8% is not expecting to use it in the next future. Cloud services adopted are mainly related to email, Unified Communication e Collaboration (UCC), human resources management, exchange of documents. However, there is a growing interest for Enterprise Resource Planning (ERP) services and business intelligence. Within companies under 250 employees, only 22% states of having developed Cloud services, 2% is going to introduce them, 76% do not use it. Nevertheless, according to Mariano Corso, Responsible of the Scientific Observatory, the adoption of Public Clouds significantly reduced Total Cost of Ownership (TCO) from 10 and to 20% of the total TCO. Cloud Computing can produce by 2015 a saving of 450 million Euros for the Italian market, according to the current adoption level.

A research (Nextvalue, 2013) supports that companies are interested in adopting Cloud services, but the current economic crisis is the main issue for 84% of Italian companies to not adopting Cloud. In Italy, the higher adoption of Cloud services is related to SaaS (27%) and IaaS 10%, against 38% in Europe. The adoption of SaaS is 54% for Business Intelligence services, 36% for Business Process Management (BPM), 22% for Unified Communication and Collaboration (UCC), 17% for Enterprise Resource Planning (ERP) and Customer Relationship Management (CRM). E-mail services accounted only for 6% and this is related to privacy and security concerns. With reference to PaaS services, 64% use operational applications and only 6% is using PaaS for developing applications, against 40% of Europe. Furthermore, Europe trusts Hybrid Cloud technologies (61%), against Italy (13%). Indeed, Italy prefers to use Private Clouds (72%).

Anderson\(^7\) states that in 2013 the worldwide investments in Cloud Computing will account for 131 billion dollars and in 2016 they will be 677 billion dollars, of which 310 billion dollars only for advertising. Cloud Business Process Services (BPaaS) is the second biggest sector that will grow (28% of the global market), then SaaS 14,7%, IaaS 5,5%, Cloud management security services 2,8% and PaaS al 1%. According to the Observatory of the Politecnico of

\(^6\) Responsible of the Observatory Cloud & ICT as a Service  
\(^7\) Research Director of Gartner USA.
Milan\(^8\), the Cloud market is still confined: less than a quarter of SMEs have seized the opportunities offered by Cloud technologies. The Cloud Computing market in 2012 was equal to 2.5\% of the total IT expenditure in Italy. Cloud technologies are still adopted mainly by private companies that benefit from the scalability of the service (57\%), the reduction of data centre and application systems complexity management (55\%), greater flexibility and timeliness in meeting the demands of the Business Line (41\%), the continuity of the service, safety and reliability of the systems (37\%), measurability and controllability of costs (37\%), the ability to constantly use updated functionalities (35\%). The adoption of cloud is slowed by the immaturity of supply and services (35\%), followed by problems related to regulatory compliance (31\%), the difficulty in quantifying the costs and benefits arising from the as a Service model delivery (31\%). According to Matt Eastwood\(^9\), speaker at the Idc Cloud Symposium in Milan (May 15, 2012) Cloud Computing can really help Italian government and companies “by transforming the data centre and providing access to resources and services that a single company cannot develop and manage alone. Italy is the perfect scenario for Cloud Computing, as it is composed by a huge number of SMEs facing relevant IT budget constraints and without the required competencies for internally managing all the solutions needed by the companies”. Taking into account these relevant considerations, for the future of Europe, the European Commission is currently developing the European Cloud Partnership (Neelie Kroes, 2012), aimed at fostering the development of a single European market for Cloud services, based on the same requirements and standards, and promoting the procurement of Cloud services by the public sector.

4. G-Cloud Pricing Strategies for the Italian PA

Cloud Computing also developed pricing models’ innovations. According to the volume of clients and to their capability to buy Cloud services, there are three different Cloud pricing models. The first is called flat Rate, is linear, the client pays a fixed amount (monthly/weekly or per hour) for the services provided, independently from the time or the actual amount of resources used. Usually, with the Flat Rate model, the client benefits from a fixed amount of storage. The Flat Rate model was used since 1999 in the United States. Clients of this model want to know the exact monthly (or weekly or per hour) costs, regardless of the effective usage. This model will not constitute an obstacle to ADSL broadband access, instead it may even increase its widespread through the "always on" model, a type of offer allowing the client to always browse regardless of time and resources used. The second model is called PAYG (pay as you go) provides a payment for the access time to the service, for Internet traffic, storage and instances of Computing effectively used. The PAYG model is becoming more popular as it increases the long-term investments in immediate solutions, in which the client pays only for the effective usage and most importantly, only when he needed. This model create several benefits: no start-up costs needed no maintenance costs or updating of software. The idea of the PAYG model was born in 2006, from a joint project of Redmond and Intel to encourage the computer literacy of developing countries through the use of Cloud Computing technologies. The third model is called MIXTURE and is based on a fixed monthly fee and on an "extra" fee for the actual usage of resources, which it is a reduced rate taking into account hours outside of the peak of usage. The following table shows the pricing models of the most relevant Cloud providers. As showed in the table, the biggest Cloud Computing Providers prefer the Flat Rate model, as the users would like to know in advance the monthly cost; in fact they are not interested in the effective usage of the Cloud resource. However, in the last year, the PAYG and MIXTURE model have improved

\(^8\) Ibidem
\(^9\) Vice-president of the group Enterprise Platform & Datacenter Trends of Idc.
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their potential and worldwide customers are even more interested in experiencing new pricing models, different from the FLAT rate model.

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### Table 1 Cloud Computing pricing models

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<th>FLAT RATE</th>
<th>PAYG</th>
<th>MIXTURE</th>
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<tbody>
<tr>
<td>IBM Smart Cloud</td>
<td>RACKSPACE</td>
<td>AMAZON</td>
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<td>Google Drive</td>
<td>CISCO Cloud Intelligent Network</td>
<td>WINDOWS AZURE</td>
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<td>ORACLE Cloud Services</td>
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<td>Salesforce.com</td>
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5. Service Level Agreements for the Italian Public Administration

Despite the potential risks (service disruption or interruption, service breakdown and potential loss of personal data), Cloud services are the best cost-effective solution to perform tasks more efficiently, although there is still not a specific regulation and during the contractual phase the use of Cloud infrastructure is included in the category of “Service Contracts” governed by the Civil Code (Articles 1655 et seq.).

DigitPA and ENISA, recommend to develop a precise assessment of the contractual rules and to insert a clause related to the "contractual claim” (a requirement that the Civil Code provides for the contract itself) for the effective realization of the contract. The Public Administration should also outline the characteristics required by the service in the contract, whose statements must pursue several objectives aimed at protecting the PA by all the potential risks related to standard Cloud contracts. It is important to include in the contract also the penalties for the violation of quality standards and the obligations of the Cloud provider.

In order to overcome the incompleteness of the regulatory framework on Cloud Computing, and since one of the major obstacles to the Cloud market is the lack of transparency of security practices by providers, the PA should evaluate the Cloud services in a framework (to identify if the Cloud provider satisfies the requirements of Cloud services). The PA should also adopt only technologies that ensure the continuous monitoring of compliance with the user requirements and the terms of the contract.

The Public Administration should always consider signing contracts with Cloud Providers that take into account Service Level Agreements (SLAs). The non-compliance with what has been agreed between the parties creates consequences for the Cloud provider, such as for example the termination of the contract and the compensation for damages. The objective of the SLAs is to define the rules of service delivery and the parameters for monitoring the level of quality effectively offered, as well as the relationships between the parties. However, currently, SLAs are still not sufficient to protect against disruptions of Clouds operations for the PA and the availability of a service, which is measured around 99%, never complete and absolute. Moreover, in Italy there are no rules requiring the Cloud provider to subscribe to the SLAs. Some Cloud contracts provide elementary SLAs for a limited time period. Therefore, it is important to develop a comprehensive analysis of the potential risks and exactly define the indicators of the SLAs by using a clear and transparent language. The PA should include in the contract the need to carry out audits on their own or on behalf of third parties. The contract should enclose detailed penalty clauses. The PA should
also include the possibility of withdrawals from the Cloud contract, in order to avoid the "lock in" issues, which would prevent switching to other suppliers. Such platforms must become more reliable, so the Public Administration can trust Cloud Providers. The assessment of security management is relevant and must be carried out through tools allowing the PA to: assess the risk of using a Cloud service, compare several Cloud alternatives, identify appropriate protection mechanisms, and support the creation of adequate SLAs and KPIs to monitor contracts’ execution.

6. Conclusions

The Italian Public Administration has receded in the use of computer technologies (World Wide Web Foundation, 2012): it has more than a thousand of little data centres, consolidated and integrated with each other, that with respect to Cloud technologies involve a relevant number of employees (Istituto Bruno Leoni, 2013). The use of cloud computing may allow, on the one hand, the reduction of public spending, and on the other hand a greater transparency and involvement of citizens and stakeholders of the Italian Public Administration. It is therefore necessary to reorganize the processes to increase productivity and improving the performance of public services by reducing also costs. In addition, Cloud services represent an effective and inexpensive way to enable e-Government services to be efficient, transparent and to improve participation, sharing and interoperability, in order to better meet the needs of citizens. In small Public Administrations it is difficult to implement IT infrastructures, because of the long leading times and the complex processes related to the acquisition of the infrastructural components. Cloud solves these issues as reduces the need to build and manage the IT infrastructure internally and the time of acquisition of the technology (Digit PA, 2012). Politecnico of Milan has estimated that the digitization and dematerialization of the Italian PA in the future can generate a 10% increase in staff productivity and simplify the relationships among the PA, enterprises and citizens for a total savings of 25 billion Euros (Aceti T., 2013). With reference to the open data, the Cloud allows a greater access to information via the web, for both PA and citizens, develops a simplification of the procedures for accessing online services and improves communication among the administrations (national and local) and citizens.

In addition, to improve the use of information is essential to implement Cloud platforms including interoperable and integrated databases of different Public Administrations through the adoption of a "community cloud" in which there are some centralized services delivered to several institutions of the central PA. This process allows the decentralized Public Administrations to benefit from an integrated database that can share and exchange information (Corso M., Mainetti S., Piva A., 2012). In conclusion, the Italian Public Administration before migrating data on the Cloud should carry out an evaluation of risks and benefits of the characteristics of the platform, both from the legal and economic point of view. The PA must take into account that some of these problems could be reduced by choosing a reliable supplier. The Italian Public Administration should be able to prevent and control the potential legal and economic risks related to Cloud infrastructures also through a careful analysis of SLAs to be implemented. Through the Cloud the PA would be able to provide public services more efficiently and to meet social needs in several fields, from education services to e-Government and e-Health.

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