White Paper

Data Centre Solutions

Successfully Delivering E-Government Services to Citizens

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1. EXECUTIVE SUMMARY

In Central and Eastern Europe, basically each large or mid-size municipality and city office has its own IT department or IT specialist(s), at least in a part time position. However, the large majority of small cities and villages with less than 10-15,000 inhabitants have no real IT specialist(s) onboard.

This leads to a heterogeneous and decentralized IT landscape, with high turnover and artisanal internal processes and documentation of the work performed internally. IT specialists in local municipalities are seen as critical for their respective organizations, but very often they have no real power.

At the same time, the local governments are facing several pain points such as high unemployment rates with high costs and the demographic factor leading to a reduced number of workforce. In addition, the digitalization of files and documents has just started; at the moment, almost all documents are still in paper versions in 90% of the municipalities in Eastern Europe.

Moreover, there is some opposition to the introduction of new technologies, especially at municipal level. Finally, the need to create and reorganize business/administration processes and for a better cooperation between state and local authorities in order to work more efficiently requires a more centralized approach towards the organization of IT departments and data centers. This would also help avoid redundant investments into local IT solutions and services.

Cloud solutions and data centers could help to reduce costs and thus generate financial resources for further innovations into e-government

solutions. In fact, cloud strategies are part of a general IT strategy on a national level at least in some Eastern EU countries. States like Greece, Slovakia or Hungary do have specific cloud development plans as part of their national IT strategy, and Romania is on its way to build a central system that is supposed to be shared with local authorities, too. But on a municipal or city level, initiatives like centralizing IT services as cloud computing for several municipalities are pretty rare. Why is that?

The most commonly mentioned reasons not to make use of the cloud solutions delivered by a regional or national data center are the lack of relevant regulation, restrictive legislation, data security, fear of loss of autonomy and decision-making power, and the lack of digital education among the potential users of cloud-based systems. So there are some efforts of persuasion to be made in order to bring arguments to the government authorities on different levels to centralize their IT approach. And there are quite some good examples in other EU states.

In Western European countries, the use of private cloud services in the public sector is by far more developed. The most usage derives from the existence of local data centers that have been set up during the last decades. But still the process is in progress. Most cloud solutions provided are private, but there are also hybrid solutions especially for services where data protection is not highly relevant. Examples from Germany, UK and Italy show various approaches to address the topic.

So what are the most relevant things to have in mind, when setting up a data center based on cloud solutions for multiple governmental institutions? First, the setup of data centers and the use of cloud computing require leadership skills: have a strong leadership attitude, keep all the participants involved informed and be transparent at any time in the change management process. In addition, the persons in

charge must balance out between the risks and potential benefits and establish centers of competence as milestones and expertise hubs for other units.

The IT players in Eastern European states might also benefit from their experience in other countries, if this only means not to do the same mistakes as others. In addition, they could make use of EU funds.

But so far, the use of EU funds to support the use of cloud computing for government services to the citizens and companies has not yet been frequent. The reason is that communes can get support to purchase hardware and software (CAPEX) but not to finance long-term spending on cloud-based services from an independent data center.

Thus, there is a clear call for action to the EU Commission to overthink their financial model and a clear support for OPEX for Central and Eastern European states.

2. INTRODUCTION

The purpose of this white paper is to point out the main challenges of these countries in the process of setting up a data center approach to deliver governmental services towards citizens and companies.

This white paper was founded on more than 15 years of PAC continuous market research in CEE and many dedicated interviews conducted with key IT decision makers in three to five municipalities by significant country in this region. During the last two months, about 20 interviews were done in Croatia, the Czech Republic, Greece, Hungary, Poland, Romania, and Slovakia, 90% of them with the IT Directors or the IT team leaders.

The goal is to point out the most important trends that are influencing the organization, portfolio, processes, and, of course, the IT systems of local administrations in some countries in Eastern Europe.

We give a number of examples from Western European countries providing insights into how they approach the setup of local/regional data centers to support municipalities in their IT use.

Further on, we give recommendations about what to think of when setting up a project to centralize the use of IT for multiple municipalities.

At the end of the paper, PAC will present Deutsche Telekom as a highly relevant business partner for the local administrations, being able to support the setup of data centers based on Cloud solutions, as the company has already proven in the DCOM project carried out in Slovakia.

3. STRUCTURE, PAIN POINTS AND TRENDS IN LOCAL ADMINISTRATIONS IN EASTERN EUROPE

3.1 Structure of responsibilities particularly regarding IT

On a local level, in most CEE states, municipalities with less than 10-15,000 inhabitants have no IT department, nor specialized IT specialists.

In large and mid-size municipalities, the IT specialists are seen as critical for their respective organizations, but very often they have no real power.

Most of the time, their role is split in just two parts: one is to maintain the current IT systems up and running, and the second is to make sure the external suppliers (very often just the software companies which have previously provided the specific applications) update the systems according to the SLAs in place.

> *Only 30 to 40% of our small IT staff is dedicated to a bit higher added-value services (such as system administration, application maintenance), the rest being involved mainly in hardware replacement and configuration, data entry or physical network changes according to the users' needs.*
>
> IT Director of a Polish mid-size municipality

In terms of more strategic roles, the internal IT departments or teams usually make proposals and suggestions for IT investments (software,

hardware and projects), while municipalities, city offices and the local governments' designated ministries make the final decisions on purchasing and implementing new systems or even develop new business or organizational models.

This leads to a very heterogeneous IT landscape in the countries and makes it more difficult to concentrate services in a data center or within a shared services concept.

3.2 Overall pain points

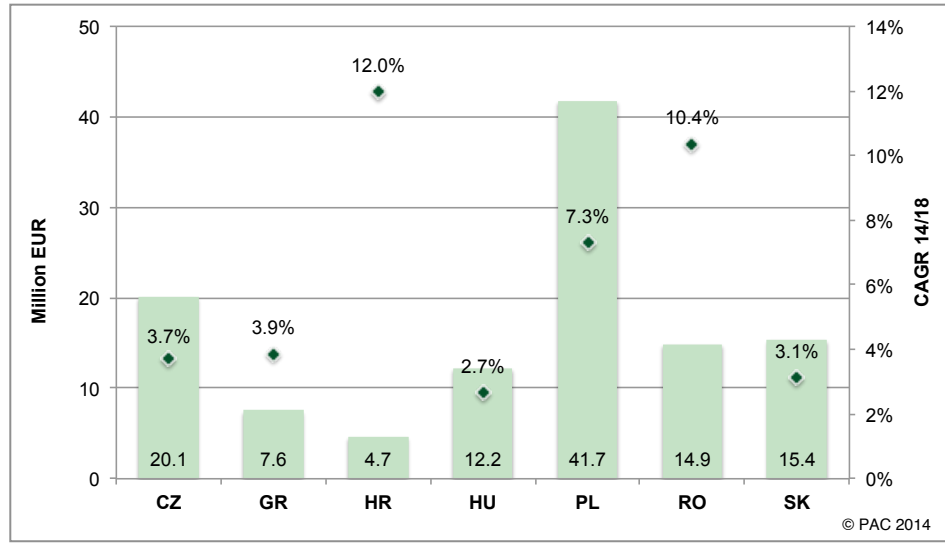
- The financial crisis leads to tight budgets in the public sector in general.
- There are high unemployment rates in most Eastern European states. Most countries had an unemployment rate of above 10% at the end of 2013, with only two exceptions: the Czech Republic and Romania (source: Eurostat).
- Saving and controlling costs is still the major issue in most Eastern European states at nearly all levels.
- Demographic factor: About one third of the employees in the public sector is older than 50 years and will retire step by step over the next decade. These employees are most likely not to be replaced by new ones and thus the need for system automation is very high.
- This also means that the human resources have to be better managed in order to raise efficiency, which also includes training

for the remaining staff to be able to manage and even use modern, internet/cloud-based IT systems.

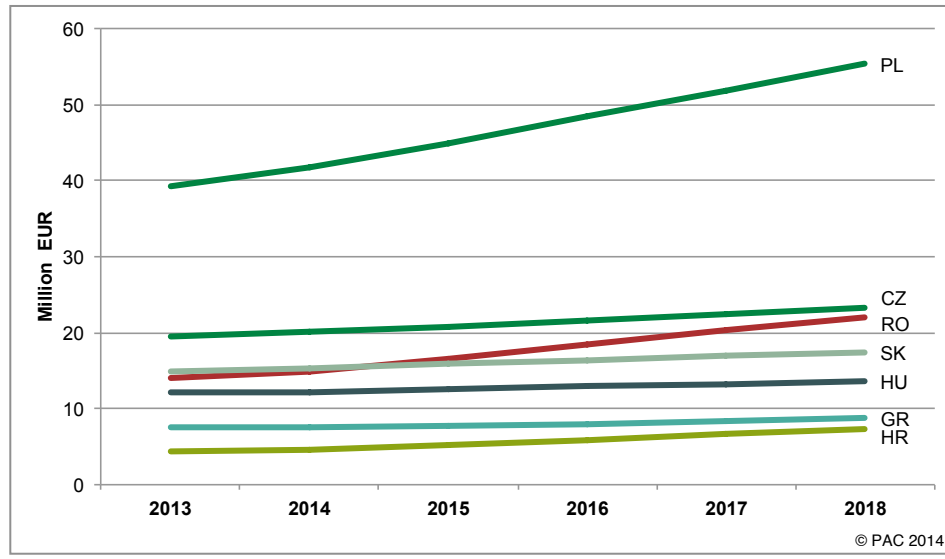
- There is some opposition to the introduction of new technologies, especially on a municipal level. This also has to do with the responsibility of each municipality. However, the employees and the responsible IT managers on a local level state in our interviews that there is no way back and that they have to adapt to these changes.
- The digitalization of files and documents has only started; at the moment almost all documents are still in paper versions in 90% of the municipalities in Eastern Europe.
- Regarding the need for better cooperation between the state and the local authorities in order to work more efficiently, e.g. regarding standards, workflow or system integration, the main issue are the heterogeneous IT landscapes within the public institutions.
- The bid invitation process to follow by the local administrations for IT delivery needs to be reformed. It is very complicated and also not flexible enough, especially when it comes to adapting projects to the latest technological requirements.
- Also the EU most of the time supports municipalities to do investments on CAPEX basis, but merely on OPEX basis: more OPEX based funds and investments would be a good way in order to help set up a centralized use of IT by the data centers.

3.3 Local trends in some Eastern European countries

Overall in Eastern Europe the growth rates in local municipalities with regards to software and IT services (SITS) are much higher than in Western Europe, as there are quite a lot of topics on the IT list of the CIOs and IT managers.



1. SITS spending in municipalities in 2014 and compound average growth rates (CAGR) in selected Eastern European countries



2. SITS volume increase in dedicated Eastern European countries until 2018

The most relevant trends and topics are:

- Most government institutions have a high need to create and reorganize business processes in order to work more efficiently, not only in the financial field or in HR management. This requires harmonizing the IT landscape: the integration of isolated solutions, applications and systems to avoid data redundancy.
- Archiving and digitalizing information requires ECM solutions and workflow management systems.
- Consolidation and enhancement of citizen portals are needed to provide citizens and businesses with information, improve processes, increase transactions via portals and minimize costs, e.g. by the use of CRM solutions.

- It is necessary to externalize IT, in order to increase efficiency, flexibility and technological know-how – increasingly not only resulting in more project services but also in cloud activities or the setup of cloud centers in the public sector.
- Outsourcing has proven very difficult: there is a clear trend towards selective outsourcing, rather than complete outsourcing deals.

> *We are unable to hire and keep our IT specialists and we strongly believe that the outsourcing of IT support services, including application maintenance, is the only solution for our city hall.*
>
> IT Director of a Romanian mid-size municipality

- Integration of e-government solutions is key.
- E-procurement via Internet provides saving potential for goods and services spent by local authorities.
- HR management is becoming more and more significant: redesigning processes, better trained staff and the trend towards staff management according to business management rules are increasingly hot topics.
- There is a higher need for mobile devices and applications: e.g. for the police.

- IT security systems are playing a major role because data security has a much higher importance in the last years in order to protect locally held data.
- Networking and network integration of regional, central and local public institutions supports better information exchange.
- Broadband availability has to be ensured everywhere.

4. STATE OF THE USE OF IT AND TRENDS WITH REGARD TO CLOUD SERVICES

As mentioned above, in most Eastern European states, basically each municipality and city office has its own IT department or IT specialist(s).

This leads to a heterogeneous and decentralized IT landscape, with high turnover and artisanal internal processes and documentation of the work performed internally.

4.1 Overall status quo of IT use

IT Responsibilities at local municipalities

Country	Level of responsibility on local administration
Czech Rep.	The municipalities can use central communication infrastructure and information systems, but the operative IT work is carried out by the local IT departments.
Croatia	Big municipalities and towns very often already have an established IT section of their own. But other municipalities make use of the services of the Office for e-Croatia. The project was defined as one of the government's top priorities in the central IT strategy 2009 - 2012.
Greece	After the last administrative reform, there are just 325 municipalities in Greece and each of them tries to manage its own IT needs with a few people employed by the city halls. The central administration offers access to basic services (such as e-mail server), but all the rest is managed locally.
Hungary	Local authorities at any level can make decisions concerning their own IT systems and solutions. But an EU-funded project to build an ASP solution is only in progress now.
Poland	Multiple levels of local administration and each city hall is entitled to make a decision concerning the IT solutions and systems it will use. Even inside a city, the IT department of the City Hall does not automatically work for other subordinated institutions and it does not share IT resources (people, networking, data center etc.).
Romania	Various levels of local administration and each level can make its own decision on IT investments. So every city hall has the right (and the obligation!) to make a decision concerning IT solutions. There is a high discrepancy between large, medium and small cities, and even between different cities of similar sizes. The e-Romania project failed dramatically, the current results of the investments are of low quality and have no relevance for the main local needs.
Slovakia	Several levels of local administration; each level is entitled to make its own decisions concerning IT solutions. In the last years, the Association of Cities and Villages of Slovakia has developed the Common Data Center of Cities and Villages project, with the help of EU funds. All the municipalities could be part of the project and use cloud services regarding their municipal agendas.

3. Level of responsibility of municipalities in various Eastern EU states

The responsibility for IT, including IT-related projects, lies at various levels of public administration. Usually, there is a ministry or agency responsible for the so-called “national IT strategy”, but the execution plan on a local level has always failed.

Regarding the IT investments, the internal IT departments mostly make proposals and suggestions for new software, hardware, networking, and IT projects, while the municipalities, city offices, and/or regional governments make final decisions regarding the needed budgets and the suppliers for the purchase and implementation phases.

It is also worth mentioning that virtually all local municipalities do not have accurate, transparent IT budgets with all the IT-related spending; however, they have a preapproved IT budget for maintenance/support (for hardware, software and networking) and accidentally replacements of too old systems (hardware and software).

In most of the cases, there is not a clear recognition and separation between capital investments (in new hardware, software, networking, etc.) and operating expenditure; cash is the king, as everything is counted in cash spending.

At the same time, all the employees dedicated to IT are regular city hall employees and all the office space and utilities used by the IT specialists and the IT-related needs belong to the city hall and they have never been separated from a financial perspective in an independent budget. This situation generates an impossible measurement of the real, overall IT spending of a local municipality and makes them less excited about outsourcing in general, or the use of cloud computing in particular.

4.2 Insights into specific IT trends in selected countries

Shared data centers and cloud computing as part of the IT strategy

Cloud solutions and data centers could help reduce costs and thus generate financial resources for further innovations into e-government solutions.

Generally in Eastern Europe there are hardly any cloud computing-specific strategies that can be used as guidelines for the public sector as well as for the setup and use of shared data centers.

If they exist, cloud strategies are part of a general IT strategy on a national level. States like Slovakia or Hungary do have specific cloud development plans as part of their national IT strategy. Greece seems well advanced with its EU-supported G-Cloud (e-Government and e-Science cloud initiatives) strategy coordinated by GRNET (The Greek Research and Technology Network). Romania is on its way to building a central system that is supposed to be shared with local authorities, too.

On a municipal or city level, initiatives like centralizing IT services in forms of cloud computing for several municipalities are pretty rare. However, locally, there are large or mid-sized cities that have built virtualized systems and are going to make an increasing use of a kind of private cloud architecture.

Most Eastern European countries have decentralized their data center landscape and are proud of it. Central government institutions and regional and local public administrations have individual data centers on site.

In Croatia (Office for e-Croatia), in Hungary (ASP solution), and in Greece (G-Cloud initiative), there are initiatives to create centralized data centers.

4.3 Constraints and barriers to public sector use of data centers and cloud computing services

The mostly mentioned reasons for not making use of cloud solutions delivered by a sort of regional or national data center are a lack of relevant regulation, restrictive legislation, data security, fear to lose autonomy and decision-making power, and the lack of digital education among the potential users of cloud-based systems.

It is also worth mentioning that the bureaucracy around EU funding has been frequently listed as a barrier to converting to (private) cloud computing architectures, which needs significant upfront investments.

The EU funds a portion of purchased products (hardware, software licenses, networking equipment) to ensure a minimal infrastructure and internet access in a given country; therefore, the public sector has deemed that the costs are lower when they purchase and own hardware rather than renting it or just making us of it, as is the case of the cloud. Other barriers mentioned are:

> *Cloud computing is definitely an option that will be evaluated in the context of the Smart City project we are in the process of submitting for EU funds. The major issue is related to data and communication security.*
>
> IT Director of a Romanian upper mid-size municipality and the IT Director of a smaller municipality in Croatia

- The financial crisis also hampered investing into cloud solutions
- There is a strong relationship between the government and the IT vendors reluctant to switch from the traditional model
- Service-level agreements are not trusted
- Wariness over issues related to interoperability between legacy and new systems and transfer of data to the new system
- Too much standardization, generating a lack of flexibility related to local habits and processes
- The maintenance and support fees from the company managing the cloud systems are very high and there is no possibility to step out of the system if unsatisfied with the services
- From the IT managers' (or from an equivalent) perspective, there is a fear that they will lose power and control over the local IT and will become mere operators of a virtual system
- There are not enough success stories in similar organizations in the same country (it is always mentioned that they do not trust success stories in other countries, claiming that every country has its own particular IT culture, level of education, trust etc.)

"We have thought about opening the access to our data center for other companies that are subordinate to the city hall, but the legal and financial setup would have been too complicated and the reluctance to share data and to use external infrastructure is still very, very high. On top of that,

> *there is no agreement regarding the communication network, SLAs, external providers etc.*
>
> IT Director of a Polish upper mid-size municipality

At the moment, there are no specific laws to facilitate and define the use of cloud computing services in the public sector.

4.4 Types of service models used

Currently, the Eastern European countries are preparing to implement or have already implemented cloud computing service projects with a central approach. However, there is no single trend of the type of cloud service models selected for the implementation. Projects are aimed towards services that must be provided by the government sector.

Therefore, for the moment, in most of the local Eastern European municipalities, there is no adoption of cloud computing. Nevertheless, the first virtualization projects are ongoing, but just in certain large cities, with a quite sizeable IT department.

4.5 Comparison to the use of cloud services in Western European countries

In Western European countries, the use of private cloud services in the public sector is by far more developed. The most usage derives from the existence of local data centers that have been set up during the last decades. But the process is still ongoing. Most of the cloud solutions

provided are private, but there are also hybrid solutions, especially for services where data protection is not highly relevant.

Germany

In Germany, for instance, about 20% of the overall services to the government sector are carried out through local and regional data centers. There are about 150 data centers. They are organized in different organizational and legal structures. The biggest share of them, about 30%, consists of the so-called “associations of communes”. They result from a pooling of IT components and competencies from different municipalities and deliver the requested application-related and infrastructure-related services to the associated communes. But there are also local IT organizations hived from the decentralized IT departments of a city, such as data centers of the different municipalities developing solutions that are suitable mainly for local and regional administrations. They have implemented government solutions ERP software and host these applications for local authorities. But they increasingly ask for external help to set up internal cloud solutions for municipalities.

Due to consolidation, these institutions are becoming increasingly powerful. At the moment, more staff is hired than released. There is also a clear trend towards more centralized IT data centers or shared services centers on a local level. Due to the demographic change and also to old systems that need to be replaced anyway, centralized services are increasingly required.

The trend towards the consolidation of data centers can also be seen in VITAKO (Bundes-Arbeitsgemeinschaft der Kommunalen IT-Dienstleister e.V. – the federal working group of the municipal IT services providers).

This organization comprises 56 regional IT services providers from 14 federal states (out of 16) with 500,000 desktops and more than 10,000 local authorities (out of 12,600). The enormous power of data centers in Germany has an impact on the competitive landscape.

The project “Government Green Cloud Labor” (http://www.ggc-lab.de/) did some research among 27 of the VITAKO data centers, which have expert knowledge with regard to cloud computing. Most of them (85%) state that using cloud solutions has a positive effect on their business with municipalities.

Another ongoing trend is that, due to high IT costs, several municipalities in the same region share software applications bought and used together and hosted by one municipality for the others. As a consequence, investments are cheaper and more efficient. This is one factor that will dampen growth rates for application software in the years to come.

United Kingdom

The UK government implemented the Government Cloud (G-Cloud), providing a cloud-computing network for basically all the British public authorities. The services will cover all service levels from PaaS over IaaS to SaaS and even an e-Government application store for SaaS (Cloudbook, 2013).

In the UK, a shared services model was set up just 1.5 years ago. LGSS is a local government shared services joint venture between Northamptonshire County Council, Cambridge County Council and Fujitsu. The mooted agreement with Norwich City Council will involve the

provision of IT, finance and revenues and benefits services for a five-year period. If it goes ahead, the move would represent one of the few examples where a local government shared services vehicle has expanded beyond its regional boundaries.

Savings of GBP 120 million are targeted with the launch of UK government's G-Cloud. Alan Waters, deputy leader of Norwich City Council, is keen on stressing that the council is not outsourcing these services, but that instead it is delegating them to another public sector agency to deliver "better value for money for Norwich residents". The reality of the situation is that if the deal goes through, the council will no longer directly employ the c110 staff, who will form a "branch office" for LGSS in Norwich.

The potential Norwich contract shows that LGSS is working for both its founders and its clients and offers a real alternative to the private sector suppliers.

Italy

In Italy, at the end of September 2013, the OPEN City Platform Project was selected as a national MIUR bid based on the European Regional Development Fund for Smart Cities and Communities and Social Innovation. The project aims to produce a prototype for an open federated cloud computing infrastructure for public administrations. The regions covered are Emilia Romagna, Marche and Toscana. About 9 million citizens are in the scope of the services delivered. It covers PaaS, IaaS and SaaS solutions. The budget for this project is EUR 19.4 million. Key challenges are:

- Integrated distributed monitoring and billing;
- Modeling of cloud applications;
- Integration of PaaS components;
- Open data solutions;
- Ease application porting to cloud;

4.6 The use of EU funds and support so far, especially for cloud solutions

In Eastern Europe, the use of EU funds to support the building of government services to the citizens and companies is not frequent yet. The reason is that the communes can get support to buy hardware and software (CAPEX) but not to finance long-term spending on cloud-based services from an independent data center.

By analyzing how EU funds are allocated in this domain, it appears that the best way to capitalize on this facility for a long-term use of IT-as-a-service is the association of as many beneficiaries (local municipalities, small cities and towns) as possible in an organization (Special Purpose Vehicle) which can ask for EU money in order to build an optimized data center (infrastructure and related software and services needed in the building phase) that will then be able to offer IT-as-a-service for a low price to their members.

In order to fill in the gap between Eastern and Western European countries, the EU cohesion funds should target primarily the final needs for better services, increasing transparency and flexibility and improving reporting and information exchange for communities which will never

have the vision, the openness, the education and the resources (financial and human) required for an individual approach of IT services providers to setup the right systems for their own use.

Such financing should come at the same time as the intensive training for future users of such systems, users that are the current employees of city halls, usually aged people, conservative, reluctant and afraid when it comes to the use of latest technologies, non-tangible systems, online services etc.

It is known that the EU countries of the region have been unable to use the full amounts of money agreed with the Brussels authorities. So, it is rather a question of education and political commitment to direct part of the 2015-2020 funds into the building systems that will serve these countries (and especially their poorest communities) in the long-term to accelerate the modernization of the local administration, which will generate more efficiency, more transparency and higher citizens' satisfaction.

5. SETUP OF INNOVATIVE DATA CENTER SOLUTIONS TO SUPPORT E-GOVERNMENT SERVICES

In the previous chapters, we have seen a number of examples from other countries and also constraints against the use of shared data centers and cloud solutions.

We would like to give a number of recommendations on the approach to set up data centers that provide cloud solutions.

Setting up cloud computing through a data center requires a consistent approach, as defined by a carefully created strategy. Shared data centers providing cloud solutions offer a great opportunity to optimize the use of ICT infrastructure by the local public administration. It is not just a new technology or service, but a new way for the governmental institutions to purchase and use IT solutions and infrastructure. Therefore, it requires a clearly defined, created and adopted strategic approach.

> *We would not be against a national cloud computing approach for the local administration, but this is something to be defined, supported and financed centrally, as we have no resources locally and the legal framework is not well defined, yet.*
>
> IT Director of a Greek mid-size to small municipality

The solutions involving cloud computing should not be only an area of interest for IT. The natural tendency is to treat cloud computing as a topic related solely to the area of IT. Therefore, determining the manner of potential use and planning the implementation are usually assigned to

entities responsible for the information systems of public sector entities. But the implementation of cloud-based solutions and especially the setup of data centers often requires the involvement of other departments responsible for key processes as well as potential IT providers.

The setup of data centers and the use of cloud computing require leadership skills

The centralization of the IT departments and the use of cloud computing are associated with significant changes in the organization, which go beyond changes in the IT budget, such as changes in the way of carrying out key processes and tasks, as well as in the structure and size of the IT workforce. Most public administrations are rather unwilling to take and face such challenges. An effective method of change management is to promote the change by the key influencers of the organization. In the situation of most Eastern European countries, this might be a leader from central or regional government, outside the local administration, carrying out a central plan to set up a data center for many (all) local administrations. As soon as a high-level official directly communicates the need for change, employees at various levels of public administration will treat the change with less concern and as a result show more commitment. At any time it is highly important to keep being transparent and effectively communicating during the change process. In addition, the users' needs should always remain on focus, when going through the organizational changes in order to keep them involved in the process.

Balance out between the risks and potential benefits

The setup of commonly used data centers through the use of new IT technologies and solutions is associated with risks such as around data protection and information system security. The various persons in charge involved in the implementation of new technologies and solutions must be aware of these new risks and prevent them through an appropriate risk management within the strategy. Those risks should not discourage the planners during the centralization of the IT services in a data center from analyzing and implementing IT solutions based on cloud computing.

Establish centers of competence

When conducting complex changes, a proper management of knowledge and experience within the organization is highly important. For instance, an administration entity starting with the implementation of centralized IT solutions and services is usually the first one to set standards and, for instance, to certify IT providers. This created knowledge can later be used by other departments and entities, which do not need to start from the beginning. One way to achieve this goal is to set up a dedicated advisory body, which has an overview of all expertise within the newly created organization.

For government administrations that are planning to set up a centralized approach of using cloud solutions, it would be helpful to build a forum for their collaboration with IT providers. The main goals are to understand their capabilities, to identify the IT solutions and services fitting the administrations' needs and to help them develop solutions according to the required standards. IT would also be helpful to learn from other

industries that are more advanced in creating data centers and shared services departments with a focus on private cloud use.

The IT providers in Eastern European member states might also benefit from the experience of other countries, if this only means not to make the same mistakes as others. The collaboration with other countries might also help, with formulating needs to the European Commission when it comes to the effective use of funds.

6. CASE STUDY: DCOM

As previously presented by PAC and clearly stated by 90% of the interviewed people from CEE local municipalities, the region lacks of cloud computing success stories in the local administration area.

In this context, there is of very high importance the Slovak experience of the most comprehensive cloud computing project in the region, called DCOM.

PAC believes that based on the DCOM success, there will be easier to show the benefits of such an approach, the positive changes in the local administrations' processes and efficiency, as well as the higher citizens' satisfaction.

6.1 Project Aim and Objective

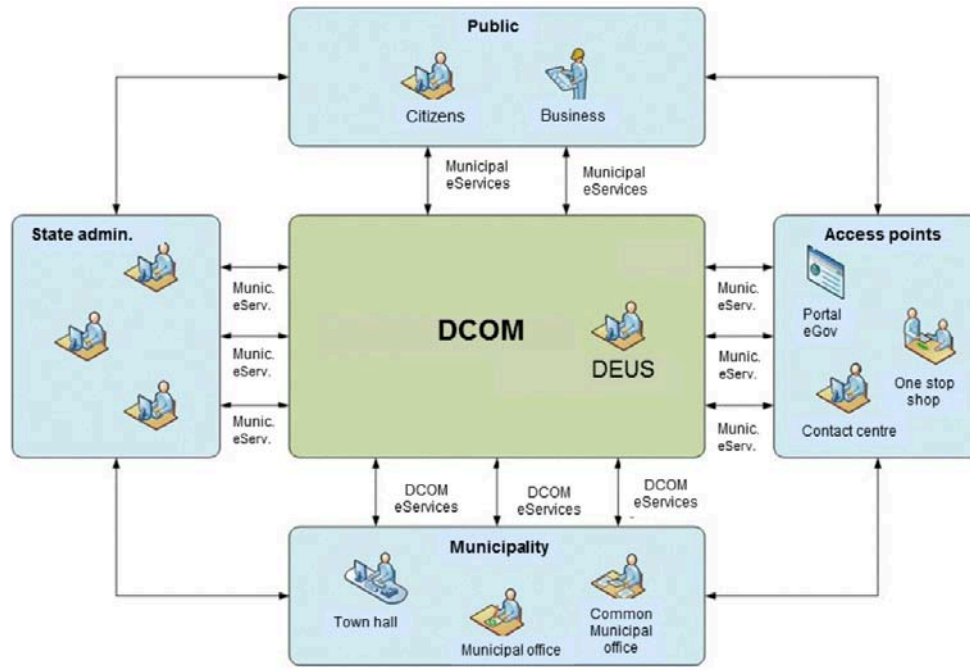
DCOM (Data Center of Municipalities) project aim is to change the current state of providing government services to a level significantly decreasing the administrative burden for citizens, entrepreneurs and government, including workers performing particular actions.

The DCOM project objective is to build a Data Centre of the villages and towns, which will provide municipal councils with the necessary applications as a service, ensure their integration with the public administration information systems (PAIS), and also mediate access of general public to government eServices.

In order to optimize the costs and offer the best user experience, the applications used today by municipalities will be integrated into the new platform and, over them, it will be build an integration platform for connecting PAIS and offering eServices to citizens and businesses.

DCOM solution will be finally available to all segments of villages and towns, but the most interesting segment is the one of municipalities with more than 500 inhabitants and less than 20 000 inhabitants, while under the conservative assumption of its usability reaches 1,057 villages with about 1.9 million inhabitants.

6.2 Operational Model



6.3 Main Services

- Municipal e-services to the public (eGov services)
- Electronic services for the internal agenda
- Electronic services for the interaction with the government

6.4 Main Direct Benefits

- ✓ Allows municipalities to ensure digital fulfillment of the requirements for the provision of services to their “clients” (citizens and businesses)
- ✓ Enhances the quality of administration of villages and towns through instantaneous access to data, optimized processes and the related IT support
- ✓ Legalizes the use of software used by most of the Slovak municipalities
- ✓ Helps providing electronic services at the level of villages and small towns
- ✓ Simplifies and accelerates the public services delivery
- ✓ Simplifies the process of handling the administration of the other providers
- ✓ Assures the IT support for unification - creates conditions for higher substitutability and efficient use of human resources in the government.
- ✓ Ensures the local government access to technology, which would not be affordable for small communities in the absence of DCOM
- ✓ Creates the conditions for process integration and standardization of solutions used by towns and villages
- ✓ Reduces the cost of providing electronic services
- ✓ Reduces the time spent on administration of systems and processes

7. CONCLUSION

As seen in the interviews and in further information available from Eastern European countries, the use of data centers and shared services with a cloud approach are not yet widely present. Some EU countries like Croatia, Greece, Hungary, or Slovakia have already set up or are in the process of setting up central data centers or at least the possibility for local municipalities to make use of cloud solutions. However, most countries have not yet started a structured approach towards a central use of IT on any government level.

There are several constraints towards the setup and use of central cloud solutions like the lack of knowledge on SLAs, the effects of the financial crisis or concerns on the process of organizational change management. A major issue mentioned is that the EU funds are not properly designed to help financing the whole process from a decentralized use of IT towards a data centric way. Thus, investments are being made based on CAPEX, but not in terms of operational costs.

Not in the least, in order to help the Eastern European member states reduce their debts, it is absolutely necessary to help them set up a central and effective approach towards the use of IT and deliver the best government services.

If the European Union would like to effectively support Eastern European countries with managing their IT agenda with the main goal to deliver an efficient IT support to the governments, they would need to rethink their fund policy towards a long-term OPEX based support.

This will definitely help the countries stay or even become more competitive through an optimal support of the citizens and the companies with all the relevant governmental services.

> *We are too small to have the resources for a transformation of our local IT, but State- and/or EU-financed new cloud computing architecture would definitely make our life easier and our services a lot better. However, we have no power or influence for that, but we would be happy to participate in such a project.*
>
> IT Director of a Romanian mid-size to small municipality

Analyst view

Cloud computing could fundamentally change the approach organizations take in how they utilize their IT resources. It may also change the way in which organizations operate and communicate with the outside world.

Perceptions surrounding cloud computing have started to change – from a method enabling cost reduction to a solution stimulating innovation and considerably improving an organization's efficiency.

At the moment, most public organizations purchase and own software and hardware, which is and will continue to be a considerable capital expenditure. Cloud computing enables such organizations to access resources that could be needed at any given time, significantly eliminating issues associated with capacity, purchasing, and maintenance of an IT infrastructure or data processing centers.

In order to reap all the benefits related to transition to a cloud computing-based solution, however, requires a change in the perception of the IT role in the functioning of public administration. Capitalizing upon the opportunities that cloud computing offers appears particularly important for public administration due to: the complexity and scale of the organization, organizational distribution, potential IT resources redundancy and duplication of IT functions, as well as the need for greater cooperation and information exchange between individual public administration units.

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