

EVALUATION OF ASP SYSTEM USED IN HUNGARIAN LOCAL GOVERNMENTS FROM THE FINAL USERS' POINT OF VIEW

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Abstract

The Hungarian public administration has been gone through a modernization process in the last one decade. One major step of this process was the introduction of ASP (Application Service Provider) model to local governments, in which they use an integrated system for their services connected to a central program. Although the main purpose of ASP system is to support and make municipal workers' everyday job easier, the question emerges whether final users, public administration employees think the same. To find out the experiences of using ASP system from the final users' point of view, we have made a survey among municipal employees in the Bodroghöz region.

17 local governments belong to the examined region, and all the employees working in public administration will be interviewed.

In our survey we are looking for answers to such research questions as how much ASP system is user friendly, does it really mean less work, or on the contrary maybe it means additional administration for users, it is technically sufficiently supported, and so on.

In our survey we have been using the method of questionnaires mainly containing closed questions and classification scales, but we also leave the possibility to tell opinions in the form of open questions. After collecting all the filled questionnaires, answers will be analyzed and summarized and main conclusions will be drawn.

In our paper we would like to share our experiences of introducing an integrated central system from the final users' point of view, which may have relevance to other decision makers by summarizing advantages and disadvantages not only of a new system, but also the implementation process.

Points for practitioners

In our research the management point of view has got an important role. Our survey was rather regarding practical than theoretical issues. We have made an examination how a dramatic change in municipal employees' work circumstances affects their everyday work, how their attitude to changes can be managed. The classical methods of change management can be applied in public administration as well. The preparation of changes to stakeholders

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is a crucial question. Since the success of all changing processes depend on the attitude of the involved, information on the necessity and on the process of change should be shared even on the lowest level of hierarchy. In our case a new IT system has been implemented to all municipal offices, and it has turned out that the main reason of contrariness has derived from the fear and lack of self-confidence of employees. The lack of self-confidence was due to their low level of IT skills and competence. Although trainings were insured to educate employees for using the system, it improved their IT competences only a little bit. When significant changes are planned to carry out affecting any of the main organizational characteristics, the needs and the level of relevant competences of those who are located on the operative level should be identified, and competence development has to be started before the changing process starts, so the risk and extent of contrariness can be minimalized.

Keywords: Application Service Provider system, change management, digitalization, e-governance, public administration

1. Introduction

The homepage of the ASP center starts with the following sentences, which can be regarded as a mission statement. “A basic condition of modern public management is that the government and through it local governments insure more and more services to its citizens in electronic form. The ASP application service takes the burden of construction and maintenance of IT infrastructure and the connected services needed to this off municipalities. This development is a milestone on the way to establish a real service state. The Application Service Provider (ASP) model and its introduction to local governments’ practices is a success story in the renewing process of the Hungarian public administration, and it can serve as a best practice in the EU, which fact is proven by several feedbacks. The ISA2 program of the European Committee (Interoperability solutions for public administrations, businesses and citizens) asked the Ministry of Interior of Hungary to make a material on the ASP model both in Hungarian and English languages to publish it on the professional blog of the ISA2 program. The ASP program was also introduced to Polish and Croatian delegations in the Ministry of Interior, and several other countries are interested in this good practice of Hungarian digitalization of local governments.

“The goal of the Municipality ASP is to provide modern, integrated and cost-effective state of the art IT solutions in SaaS model for local governments, fostering standardized internal operation and a common platform-based provision of local e-Government services to citizens and businesses.” (Dán, 2018)

The Application Service Provider model means a new business and at the same time a technology construction. Within the frame of ASP application users use administrative and other software supporting their everyday work that they link via internet to the server with operating data bases and programs located at the service provider. On client side simply a browser program have to run and need internet connection.

As we can see the implementation of the ASP system was a national program with an outstanding importance, but to its successful launch local governments were also needed as partners. Since the access to the model has been mandatory, the question was not to join or not, but for its success the attitude of municipalities had a great role. Since every organization is determined by its members, this attitude conceptualized in their behavior. Although

the operation of the ASP system seems very simple, municipal office employees did not welcome the idea to change to another software. We conceptualized questions regarding the satisfaction with the operation and structure of the system, but from the answers the attitude toward the changing process can be followed, as well. Whether employees' fear of the new system was real or it may be due to the changing process itself with all of its difficulties and inconvenience stands in the focus of our research.

2. The operation principal of ASP

The essence of ASP service is that local governments do not buy several different software for the support of their operational processes and install these on the personal computers, but they rent an integrated service from a central and remote service provider. ASP is a cloud based service. "The advantage of the ASP model is that the user can access the software as a service provided by a remote service provider online via a simple web browser. This model can be technologically and economically advantageous also for municipalities to support the wide range of their functions."(Dán, 2018).

Before the introduction of ASP system municipalities used several different types of software as IT tools for their operational processes, and the level of digitalization of local governments also varied on a wide range. Until bigger and economically stronger municipalities could afford a higher level of digitalization in their administration processes, until then municipalities with less population and smaller offices stucked on a very poor level of digitalization. As a consequence of the different digitalization level of municipalities, citizens got a very different quality of public administration, the possibilities for e-governance showed a very diverse picture. "Based on this experience, the Government has come to the conclusion that local government IT developments have to continue in a more centralised way."

The ASP model can be considered as a kind of outsourcing. In case of ASP user municipalities use a software application with the connecting hardware and operation services, therefore users perform administration and professional tasks themselves, while other connecting tasks such as data storage, data backup, software update, application and server infrastructure operation and maintenance is outsourced. ASP service is not only an application rental, but it takes the burden off the municipalities of such as software operation, legal compliance, installation of updates and provides also a HelpDesk service.

The introduction of ASP system to local governments was realized in several steps, in the first step it started as a pilot project called "Establishing a Municipality ASP center" involving 55 voluntarily municipalities, to which later other 39 municipalities joined between 2012 and 2016.

After the successful pilot program the Government had decided to extend the use of ASP system at national level on mandatory basis. Of course the legal background was also established to this by announcing the Government Decree No. 257/2016. (VIII. 31.) on the Municipality ASP, on 1 January 2017. Thanks to the mandatory nature of the introduction of ASP system, by now 93% percent of local governments has joined to the central service, which is an outstanding number even on European level.

The following management systems are part of the ASP system currently:

- Framework system and operational support systems
- Financial management system
- Local tax management system
- Property cadastre system
- Industrial and commercial management system
- Document management system
- Inheritance registration system
- Online form management tool
- Local government e-administration single point of contact portal
- Municipality portal service (optional service for publishing a local government website cost-efficiently)

3. The advantages of ASP system for municipalities

The main advantage of the ASP system is that it helps local governments' officers with an integrated electric solution, where there is a strong integration between the different management systems. The system helps connecting data originating from different sources, there are several control mechanisms built in the system to help avoiding mistakes, and data security is ensured by a special authentication, where officers use their personal e-ID to login and reach their municipalities' data. ASP system also has benefits on the side of the local government, not only on the level of officers, since its usage is free for local public administration and it does have a low hardware requirements. ASP ensures a continuous modern technology as well as a secure operation and up to date legal compliances. Management information system is also part of the ASP system, which makes it possible for even small municipalities to make decisions based on facts, which later can become part of their organizational culture. It is not a question whether ASP has real advantages in the strategic decision making as well as in internal operational processes of local governments, but those who use the system are not decision makers, they treat ASP from a different point of view.

As we can see ASP system has several advantages both on local, as well as on national level, but in our paper we are looking for answers for such questions as whether officers, as final users how experienced the change, does the introduction of ASP really has made their everyday work easier, how hard was the change-over, how prepared was the implementation process.

4. The research methodology

Orsolya Hogya, the co-author of this publication is a Mayor of a small village called Nagyrozvágy in Hungary. She has followed through the whole implementation process and has experienced the effects of the introduction of ASP system on her own colleagues. Her experiences were one of the main driving forces to carry out this research among a wider sample and draw the consequences of introducing a new system to public administration. We were interested in finding out whether this centralized process how much took into consideration the final users' point

of view, the final users of the system how much satisfied are with the different characteristics of the system, whether the usage of ASP really has made their everyday work easier in their own opinion.

To carry out the research first we have determined the sample of local governments, whose officers would be included in the survey. We have chosen the Bodrogköz region of North-Hungary, where 17 municipalities belong to the statistical region among them Nagyrozvágy. Since one of the authors has personal experiences in one of the municipalities, the survey was carried out in that given region. The examined region belongs to districts to be developed with a complex program in Hungary based on its economic and social situation. Mainly small villages form this region, therefore according to the 2011. évi CLXXXIX. law about local governments in Hungary, not all of them has their own municipal offices. Local governments with less than 2000 inhabitants have to form common municipal offices, where at least 2000 people belong to the given region concerning their public cases.



Location of the examined region in Hungary

According to this in the region of examination we can find common municipal offices in Rics, Cigánd, Pácin, Karcsa, Cigánd, Bodroghalom, and Tiszakarád. On the other hand though the law makes it possible to establish local offices as well, which belong organizationally to the given common municipal office. In our survey all officers of the local offices were asked about the given topic. In order to find out the opinions of the officers of the ASP system we used the method of questionnaires, in which we applied both closed and open questions. We have compiled an online questionnaire with several closed questions regarding the perceived quality of the different characteristics of ASP using a 10 point classification scale, meanwhile after each question we have left space to express in words their personal experiences regarding using the system. The structure of questions followed the logic of implementation process, first we gathered information about the implementation process itself, then about the education connected to the learning of the new system, then the main functions of the ASP system were detected, and then the advantages or disadvantages of the new system were asked to be defined. The main objective of our research was to examine how final users have perceived such a comprehensive, a top to bottom initiative, a process in which municipal workers were the mainly affected group of people.

We have prepared an online questioner, since its filling does not take too much time. Individuals involved in the survey are mostly overloaded, so we needed to choose a method for data collection very simple and easily handled. As a result of the online survey 32 officers out of 37 filled in the questionnaire, which means a 86,4% ratio of filling. In our paper we will use “she” for regarding to employees of municipal offices, since the big majority of workers are woman. In the examined sample this ratio is significant, therefore the conclusions drawn from the given answers can be handle as the opinion of the majority in the region. To analyze the answers we applied the

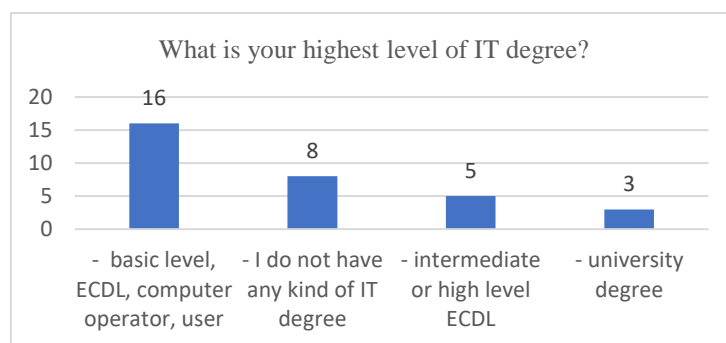
descriptive summary of the results, which are presented in the following. Some of the questions were analyzed separately while others have been handled together because of the relationships of the nature of the individual questions.

5. Results

The first two questions were concerned with some personal data, first we asked the age of the user and his or her highest degree of IT knowledge. This information has fundamental importance, since the level of IT competence has basic relevance of changing to and using a new informatic system. Nowadays the biggest challenge of municipal and in general public workers is to face and handle the challenges of the turbulently changing technical environment and expectations. The competence and skills required to carry out the everyday work properly is shifting more and more toward a digital direction.¹ (Németh, 2021).

34 % of the respondents are over 50 years old with a long period of service in public administration. The age and the length of service is important considering their motivation for learning, participating in competence development trainings. Experiences show that lifelong learning is a characteristic of rather young employees, while the older public servants do not really like participating in further trainings, and the new methods of learning techniques are far from them. We also have to see that in case of those who are not motivated to participate in further education routinization is very frequent, a “that’s how we are used to it” point of view decreases efficiency. (Keló, 2021). Usually the older generation of municipal workers have a great experience on their specialized field, but digitalization faces them with new challenges. During the last decade they have learned using informational systems, since it was necessary for their job, but it was based mainly on self-education, and officers have not acquired IT knowledge on professional level. Before ASP system local governments used several different programs and IT solutions, and older workers had learned to use them. When the introduction of ASP model was announced a big part of municipal workers have showed an opposite behavior, some of them even quit their job. Complaints and fear of the new system was voiced, ASP system was seen as a threat to their well accustomed everyday work and routine.

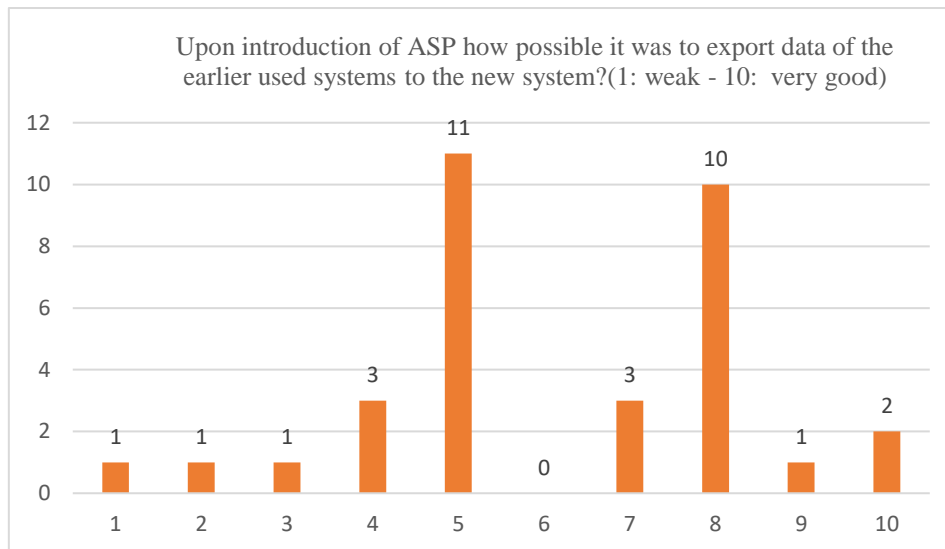
25% of the respondents do not have any kind of IT degree, and another 50% have only basic level of IT knowledge. The introduction of a new IT system requires a certain level of IT competence from the involved, so it is understandable that municipal workers regarded to ASP system as a dreaded monster. ASP system contains several logical connection different from the earlier used programs, and without IT background it was hard to understand them at first. Younger officers felt it much easier to change to the new system, mainly because they have a higher level of IT skills and they are more flexible to adapt to changes.



Concerning the hardness to switch to the new ASP system many officers felt that it was complicated. 36,4 per cent of the respondents valued the difficulty of change to ASP model between 7 and 8 on a 10 point classification scale. On the other hand 12% experienced the change over to be easy. One respondent says” that it seems like ASP was made for computer scientists” not for simple users, which made the change over very long and difficult. This opinion and impression correlates to our earlier statement that most of the officers are lacking those IT competences which are necessary to the introduction of such a new system. Users think that basic default settings should have been done much easier with clear instructions and some clicks without the help of external experts. Most of the users think that the structure of ASP much more complex is than the programs used before, therefore the change over was very hard. The earlier used programs were much more simple and easier than ASP. It clearly turns out from the answers that the “fear from the new” was the determining feeling at the beginning, but later on the advantages of the new system made the users forget the initial difficulties. It is not a surprising answer for those who know the organizational culture of such governmental offices that those who were new entries to the municipal office has found the start not complicated, because they did not have time to get used to old things. Municipal offices are typical examples of Handy’s role culture of organizational culture types, where specialization is the determining force of work processes, and this type of organizational culture does not like external changes, but rather prefer the good old ways of doing things. We can conceptualize that the existing IT level of workers and the organizational culture of municipal offices mainly determined the perceived difficulties of the change over to the new system in the introduction phase of the implementation process.

Many respondents have found the introduction of the ASP system very complicated because of the different structure of ASP and other earlier used programs, and from the next question it turns out how significant this difference is perceived according to the opinion of final users. On a 10 point scale 18,2 per cent of the users gave a 10 point on the discrepancy of system structure, while other 42% evaluated the difference with a point bigger than 5. Although the ASP system is very different in structure from the earlier used programs this complication is due to the complexity and integrity of the new system. A relevant part of the final users welcome the new structure of ASP, since it is an integrated system with many built in automatization therefore with less possibilities of making mistakes, and new and very useful functions are integrated to the system,

The introduction of a new system always raises the question how to save data from the former data base, how easy is to ensure the continuity of given processes, how possible is to export data from one system to another. In case of some management systems it was possible to transfer data completely, while in case of other systems data transfer was partial, therefore it was needed to record data manually. For example in case of the Financial management system the opening had to be maid manually. It has turned out from the answers that in some municipal offices before the introduction of ASP model they did not use any informatic program to support some processes, the new model forced them to digitalize all of their processes. In this case the dissatisfaction of the workers in the initial phase of introduction is understandable, since it meant a big amount of additional work for them.

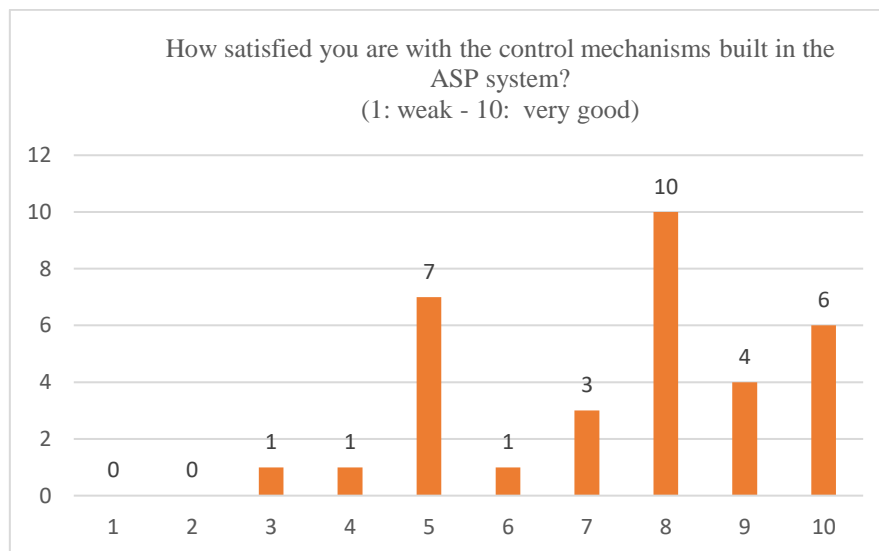


The main advantage of ASP system is the integration of different management systems. The exportation of data from one management system to another makes the everyday work easier, since the inner logic of the system helps to reveal connections and coherences between different processes and fields. According to the answers given to the next question the final users also experience this advantage of the system in their work. Answering the question “What do you think about the logical connection of the different management systems of ASP?” only 6 per cent of respondents has given a low point, while the other 94% of the officers valued this characteristic of the system to be excellent. The main objective of the government was to make municipal officers’ everyday work easier with the introduction of Application Service Provider model, which according to the experiences and opinions of the involved has been fulfilled. Very often municipal offices meet central expectations on a different level, and this system eliminates the possibility of making mistakes. Central decision makers have clearly articulated their expectations toward municipal offices regarding the form and content of data provision, but in absence of an uniformed system several mistakes have occurred. ASP system eliminates the possibility of erring, and thanks to the integrity of the system and the logical connections built in the system now everyone “speaks the same language”. The ASP system with its structure can serve as a guideline for local governments to handle public cases and as well to compile with legal requirements. One of the respondents said “ it is very useful, that in the Etriusz application when making data provision it shows which items have been accounted for the given line”. The system allows users to look through these logical connections, which helps officers to improve their job as well as their knowledge on fields where they have some absences.

The next question was strongly connected to the previous one, since it looks for the answer whether these logical connections makes the work of municipal workers really easier. The answers are concurrently yes. The main benefit of the ASP system based on the opinion of final users is that it saves time for them. Thanks to the different data export form one management system to the other, data do not need to be recorded again, which means relevant time saving. For example a document recorded in the Local tax management system immediately is documented in the Document management system without opening a new work process, or outgoing documents depending on the forwarding method are transferred to the appropriate menu of the Document management system, from where they can be mailed with one click. Time saving derives from not only data transferring from one management system to another, but also from the decreasing number of mistakes. The workers do not have to spend plenty of

their times with finding mistakes, or even when they make mistake it is easier and takes much less time to find the problem.

The next question was dealing with the control mechanism built in the ASP system. A big benefit of electronic systems is the control function, which makes it possible for the users to eliminate the possibility of errors. The majority of users are very satisfied with this function of the system, since it helps to avoid uncertainty. The system do not allow the users to record wrong data, the it sends warning messages if a task cannot be executed or it is cannot be interpreted. Control mechanism gives confidence to users because work processes are examined through predefined rules. A mentioned problem of the ASP's control mechanism is that it uses error codes, and in some cases the user's manual does not contain a given error code. In this case an email is needed to be send to the Center where IT experts help to solve the problem. Naturally it takes time and until the help arrives the given work process is suspended sometimes for days. Practice and the improvement of IT skills of individuals can help to come over this problem on long term.

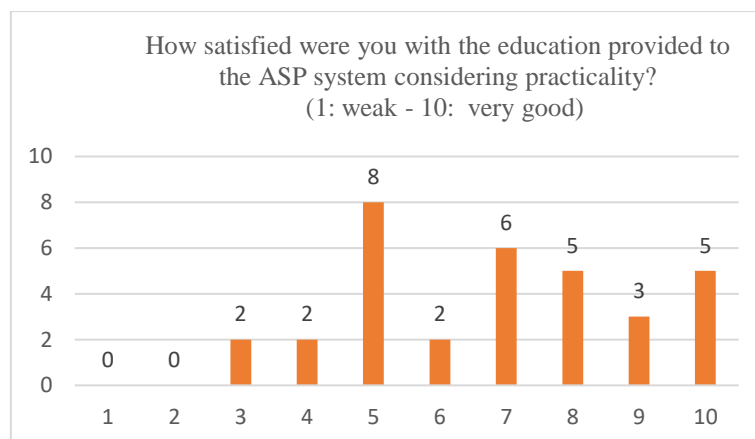


In the next step we would have liked to get an answer for the question whether municipalities had the appropriate and convenient IT infrastructure to install and use the ASP system. To enter the system municipal workers need to use eID cards for user authentication, local government employees can only access the Municipality ASP's applications by using their own electronic identity card. Those who did not have electronic ID before, needed to renew the old identification cards. To use eID for authentication card readers were needed to be purchased, which do not have a significant cost. A major problem was though the existing condition of the computer park, and the bandwidth of the internet. Smaller municipal offices usually do not have sufficient resources to modernize their IT infrastructure, therefore they use old, outdated computers. Since ASP is an online system and usually many employees use it in the same time a proper internet bandwidth is required otherwise problems may occur originating from the bad internet access. In normal cases ASP system installation do not assume any special IT support. More respondents have mentioned the existence of a computer scientist colleague as a crucial condition of installing and operating the system. Several municipalities cannot afford hiring an IT expert, in a lucky case one of the administrators have an IT degree. All of the users agree though than once the system has been installed, no special IT expert is needed to run the system.

The ASP system was a centrally developed system and for municipalities it were mandatory to join to the system. The implementation of the Municipality ASP presented a big task for employees of local governments. The Government has given all help to municipalities to handle this complex task system through the Hungarian State Treasury. Among several roles of the State Treasury one of the most important was to organize the education of employees of joined municipalities. In each connection cycle the data collection of applicants for trainings took place first, then they got access to the e-learning material of each management system. In the second half of the year the attendance education were realized, where workers got the chance to meet the system in practice. According to the statistics of the Hungarian State Treasury the following training data van be shown so far and training is continuous with the accession of new municipalities.

| <i>Registered students in the e-learning system</i> | | | |
|---|---------------|---------------|---------------|
| | 2017 | 2018 | Total |
| <i>Total</i> | 19.407 | 20.791 | 40.198 |

The State Treasury was responsible for the preparation of the training thematic, the e-learning material, and it conducted the examinations. The treasury continuously have measured the satisfaction of students, which reflected a high level of satisfaction among the future users. In our survey we also asked the municipal workers about the quality and relevance of trainings. Regarding the intelligibility of the trainings 18,2 % of the asked persons gave the highest score, and almost 65 per cent of the respondents gave a high score reflecting their satisfaction with the provided education. The instructors were said to be very well prepared, they have used practical examples to prepare employees for the future use of the system. On the other hand though some users would have felt the necessity of more training days, and almost all agreed that the trainings helped to get the basic information on the usage of the ASP system, but in practice to use the system it was very hard and the everyday usage of the system helped them to learn the ASP properly. About the complexity of the trainings the picture is quite diverse, some respondents said that it was comprehensive and all management systems were introduced, while others' opinion was that it has left a sense of absence. Considering the attitude and the helpfulness of the colleagues of the Treasury everyone is satisfied on a maximum level.

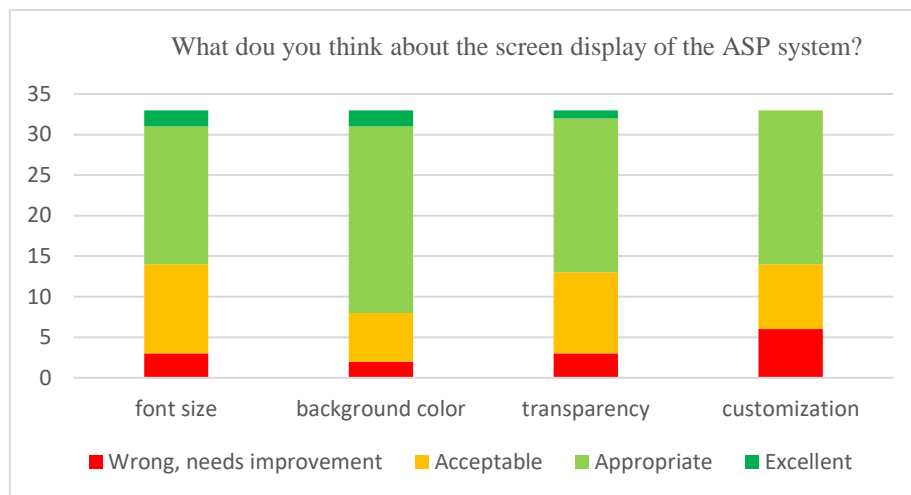


When asking about the practical nature of the trainings we can find rather very positive answers. During the trainings each student had a computer to practice the usage of the system, and the instructors were there to give help. In the answer of some respondents an earlier statement of ours is proven, that some workers of the municipal offices have low motivation for education and competence development. “During the everyday work who has time to participate in trainings?!” All together we can state that the results of the satisfaction survey made by the State Treasury are consistent with the experiences and opinions of the municipal workers.

The next group of questions were dealing with the user friendliness character of the ASP system. Concerning the menu system the answers of the respondents were quite congruent. On the classification scale with a few exceptions everyone has given a high score for the evaluation of the menu’s quality. Based on the given answers the menu system of the ASP is easily transparent and operable, therefore users can quickly proceed with their work. Regarding the Document management system it has been mentioned that there are several functions of the menu which are not used and is referred to as being unnecessary. It raises the question whether these functions are really unnecessary or for the users it not clear what their role and function is. It has been also mentioned that there are many continuous improvements in the system, therefore a habitual work process is transferred to another menu, and it takes time to search for them. In small municipal offices it is not rare that one administrator has to work in several different management systems because of the related job positions, and she do not have enough time study all the management systems. It can be a problem, but it is not the deficiency of the integrated ASP system, but rather an organizational and operational problem of the local government.

When examining the help function of the ASP system both advantages and disadvantages have been named by the final users. Some of the employees do not use it at all, they rather ask the IT expert colleague. It is possible that they are those workers who do not have or have a very low level of IT skills, and independently cannot interpret the instructions written in the help function. On the other hand many municipal workers have found the help function useful, they judge the descriptions and explanations in the function to be precisely detailed and understandable. Although several colleagues have mentioned that they get help from other sources rather than the help function, for instance from the document library of the Application Center, or from the employees of the Hungarian State Treasury, or there are Facebook groups for ASP users, where people using the system can share experiences and discuss relevant and practical questions and issues.

After the questions regarding the structure and functionality of the system we started to deal with user conveniences. Municipal employees spend their whole working day in front of the monitor, so the characteristics of the screen display cannot be negligible. We were curious about the users experiences regarding font size, background color, transparency and customization. It was surprising that almost no one, or only 1 or 2 persons evaluated these factors to be excellent. Most of the respondents related to these characteristics as rather acceptable, and many of them said they need improvement. The main complaints were about the font size which is judged to be too small, and the background color is grey, which makes hard to recognize the different contents. Customization is almost impossible in the system. The formation of user experience (UX) means that using a system gives relevant information in a manageable form and makes the screen display practicable. Improving user experience do not takes large-scale input and expenditure, and at the same time it can increase user’s satisfaction significantly. Taking into consideration the feedbacks of final users, the quality of these characteristics of the ASP system can easily be improved.



Data security is a crucial issue of all IT systems and services as well as the ASP application software. The National Infocommunications Service Company Ltd. has been in charge of development and operation of the ASP system. NISZ is the leading ICT provider in the public sector in Hungary, the company operates critical IT networks of the Hungarian state as well as the Public Services Portal, the Citizens' and the Corporate Mailbox.

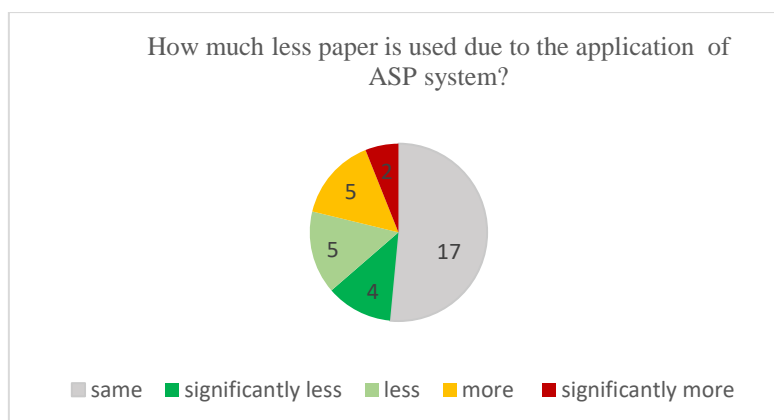
On client side to enter the system a multi-step identification process is needed to go through. Beyond giving the user name and password personal eID has to be used to make identification authorization of the users. Personal data is secured thanks to the identification process, and 70 per cent of respondents agree with this statement. Although sometimes the E- personal client does not work and to enter the system the pair of user name and password is enough. In this case data security is uncertain.

Since Application Service Provider system is a cloud-based application software the loss of data is impossible. Earlier the programs municipal offices had been used were not online based, and a big problem was data loss. Very often employees did not have made a security copy of data, so it often occurred that important data had been lost.

A main task for local governments was to create IT security conditions such as preparing IT security regulations in the phase of accession. Concerning the ASP system security risk of municipal offices has had to be treated as priority. Municipal offices use their own IT infrastructure applying ASP system therefore the security of client side systems determines the security of the whole municipal ASP system to a great extent. For municipal offices uniform safety compliances are determined, which minimize the security risk on client side. The Hungarian State Treasury has compiled a very detailed list of instructions and requirements municipal offices have to fulfill in order to ensure system security. There are several basic tasks conceptualized on organizational level for instance preparation of regulations on IT security, risk analysis, process continuity planning, human security taking into consideration human factors, drawing up physical security measures. As we can see data security is ensured by national laws and detailed enforcement measures. As it turns out from the answers given to the question concerning security final users deal with the surface of security issues. Its main reason could be that they are not the ones who were responsible to fulfill central requirements and measures concerning ensuring data security, rather the notaries have been in charge of this task, and in the lack of significant IT knowledge they deal with practical issues connected to their everyday job like in the case of security identification authorization.

When using ASP system in everyday work several different types of problems may have occurred. In the next question we were to find out the characteristics of these problems and their frequencies of occurrence. One major problem experienced by the users was connected to the login to the system. They have mentioned that very often the card readers do not work, which could be due to chip problems. Login to the system sometimes takes almost half an hour in the morning, which could be a reason of overloading of the system. Another problem mentioned was the different error codes, which solution takes time or need external help. Usually these error codes mean system error, but in a short time they are fixed. Another problem field that was named is the delay of data transfer within or between the different management system, which mainly occurs in the Document management system, feedbacks of the mailing function arrive late. Summarizing the problems occurring in the ASP system we can say that some of them derive from the technical infrastructure, while other groups of problems may connect to the system itself. Since ASP system is a relatively new application software with continuous improvements these problems cannot say to be significant, and do not cause serious disruption in the everyday work of municipal offices.

Nowadays environmental sustainability is a crucial aspect of all economic and non-economic activities and processes both in the European Union as well as in Hungary. All innovations have to take into consideration their impact on the environment prominently, all developments have to try to minimize negative effects on the environment. We would have assumed that Application Service Provider model as a new and innovative system with a complex and integrated operation brings into focus environmental sustainability and would come with less paper usage, but based on the answers of final users given to the question dealing with the amount of paper usage it shows the different. 51,5 per cent of the responders believe that the application of ASP system comes with the same amount of paper consumption than the earlier used programs. Around 21% of the users judge paper usage to be more than before, while the same number of workers think it to be less. The main reason of not saving paper is that almost all recorded data are printed, since the Hungarian State Treasury requires them also in paper format. Mainly those who work in the Document management system use the same amount of paper. The documents have to be printed since they are stored in the municipal offices archives in paper format as well. Although Hungary has been developed significantly considering digitalization and e-governance and several public cases can be managed electronically, the culture change has not followed digitalization at the same pace. Attitude toward paper lessness is not yet a generic characteristic of Hungarian society. Although in municipal offices office gate service is used which is an online administrative platform, proofs of posting and download confirmations are printed.



The last question was an open type question leaving space for final users to express their opinion on proposals for system improvement. Here are some suggestions quoted: “It could have been compatible with more Internet browser”. “The system should have been made more simple and transparent. The new developments are more and more complicated”. “ My suggestion is that if something works well and was built up with simple steps, do not get more complicated with the different updates”. It turns out from the answers that final users’ main aspects are concerned with user experiences. They do not think on strategic level, for instance it is not an issue for them whether all municipal fields are covered by the ASP system or not, but it is not even their responsibility. A main characteristic of the municipal office employees is that their tasks are very specialized, they focus on their special field. Although the different management systems are integrated, the tasks belonging to the given management fields are special with a position built on them. Employees cannot think integrated, only focusing on their own specialized field. The roots of this division of labor could be searched for even in the organizational culture which has a long history in public administration.

6. Conclusions

The introduction of municipal Application Service Provider model to Hungarian local governments is a success story even on international level. It is a program extending to the whole country, all municipalities have been involved in the introduction and it has been carried out in a relatively short time. The application software has made it possible to make a significant step toward establishing interoperable digital public services at all levels of public administration. The introduction of the new system was mandatory for all municipalities, and this centrally organized and pushed mechanism get the reaction out of municipal workers exactly what all change processes would have get. The employees of municipal offices has gone through a typical change process with all of its phases. Organizational changes are all those changes which occur in the important characteristics of an organization. These organizational characteristics can be the organizational strategy, organizational structure, applied technologies or methods, and organizational culture. (Kiniczki, Williams, 2012). In the case of introduction of ASP system we see a typical example of change in the applied technology, which is a form of organizational change. A big majority of people do not relate to these changes on a positive way, although to carry out changes successfully the commitment of at least half of the workers is needed. (Kotter, 1999) In order to overcome oppositions first the reasons of oppositions have to be identified. From the survey which has been carried out among municipal workers we get answers for issues of how they felt about the change of the applied technology, what was their experiences in the introduction phase of the new process, and what are their opinions about the system now using it, whether it is a help for them in their everyday work. Through the answers we can follow a typical change process with all of its characteristics.

It is declared that many employees of municipal offices do not have a high level of IT competence and skills. Since many workers have been employed in the office for decades, the rapid and turbulent change of technology and especially information technology environment have posed a challenge to them. In order to make their job they have acquired a basic knowledge to use the different applications and software, but it is rather a memorizing process than a competence development. In their case the main reason of contrariness toward the ASP system was their lack of self-confidence which is deriving from their low level of IT skills. They were afraid that they would

not be able to meet the new expectations set by the new ASP system, even some older colleagues left their jobs because of the big challenge. It was interesting reading the answers of one responders, who always referred to his or her IT expert colleague in all questions. When the last open question was asked about the proposals for improvement of the system the answer was “ I have no idea, I could not even interpret the questions of this questioner, my IT expert colleague helped me to answer the questions”.

Another source of contrariness could have been in our case convenience, sticking to the usual things. People usually insist to the usual work environment, to norms, to daily routines, changes take them out of their comfort zone (Farkas 2004, Daft 2010, Buchanan-Huczynski 1997). Organizational culture of municipal offices represent a typical example of Handy’s task culture, where specialization is determining principle in work processes, and the inflexible organizational structure and culture can hardly adjust to changes.

As initial contrariness and fear gradually has been resolved the advantages of the new system has come to surface. From the survey it turns out that a significant majority is satisfied with the system, emphasizing the advantages of the integrity and logical structure of the ASP system, the control mechanisms built in the system, and in general all functions make every day work of the municipal offices’ employees much easier. The Government has given all support to local governments through the Hungarian State Treasury to make the transfer to the ASP system smooth as possible, and help to overcome the initial fear of change. As it turns out from the answers the trainings connected to the ASP system organized by the Treasury was helpful, all the colleagues of the Treasury involved in the ASP process are in a strong work connection with municipal workers in order to use ASP system properly and efficiently. Rather negative opinions characterized the users experiences of the ASP system, mainly mentioning the problems of the screen display.

Taking into consideration the opinions of the final users of ASP system we can draw the conclusion, that the feared initial phase of implementation has been followed by a phase of normalization, when using the system everyone has experienced its advantages. Since it can be considered as still a new system continuous improvements are made on it based on the feedback of users.

The ASP system has made it possible to uniform public services in Hungary, and municipal offices has got a tool which gives a great support to standardize their internal operation.

And whether are there any directions where ASP system can be further developed? According to some experts the range of participants involved in the ASP model can be wider broaden. Currently only a part of financial bodies of local governmental sector use ASP system as a supporting tool of their task performance, therefore data reports, statistics and analysis provide visibility not for the whole local government sector, but only for a significant part of it. It is an option to consider to provide the possibility of access to the ASP system for all financial bodies of local government sector, which has a number of 899 financial bodies of local government subsector not joined to the Application Service Provider model so far-

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