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THE TAKE-UP IMPORTANCE OF ICT ENABLED SERVICES IN CRISIS TIME, AN EVALUATION OF E-BANKING, INTERNET CONFERENCING AND E-PUBLIC SERVICES

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Abstract: *The world is facing a global financial and economic crisis, the deepest and the widest spread since the Great Depression of 1930. Individuals, companies and governments alike are forced to take active measures to counteract the severe consequences of the crisis, if they want to emerge stronger from this difficult period. There are strong beliefs among policy makers around the world, European Union included, that the Information and Communication Technologies are a very important pillar in the recovery from the crisis. This paper aims at evaluating the e-banking services, internet enabled conferencing solutions and electronic public services as categories of ICT enabled services that represent powerful and practical solutions, especially in time of crisis, with significant advantages at individual, company and government level.*

Key words: *e-banking, internet conferencing, e-public services, crisis, EU policies.*

1. Introduction

In the business world, it is commonly accepted that time means money. As time is a limited resource, a company has to find ways to efficiently use the time of its employees, the time they dedicate to the company during the working hours, to maximize the productivity and the profits of the company. But time is also valuable for the individual at a personal level, as in the periods of time an individual can dedicate to his family, to his hobbies, to his health. More time for the activities the individual chooses to do and enjoys doing, as opposed to the ones he has to do – like the efforts in providing the basics for living, means gains in what might be called the quality of life.

A study that observed the distribution of time spent by the average worker in 2005 as compared to 1986, concluded that the time spent with the family on a work day decreased by 18%, and the activity that is most overtaking is work [1]. Regardless of the reasons, people are spending more time working, and less time with their family and other chosen activities.

The current global financial and economic crisis represents a threat to the

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well-being of the individuals and companies alike. The banks adopted a defensive stance and credit conditions got more and more strict and limitative. As both businesses and individuals reduced consumption, the production of goods and services dropped, turnovers decreased, companies were forced to let go part of their labor force, so unemployment increased and is estimated to keep rising [2, 3]. Because of the shrinkage of the global markets, there is an ongoing pressure on cutting down costs at the company level in order to maintain a minimum level of profitability. At an individual level, the pressure is on maintaining a job, and preserving, as best possible, a certain attained quality of life.

The information and communication technologies are seen as playing an important role in the recovery from this crisis. This paper is focusing on evaluating the e-Banking, internet conferencing and the public e-Services as some of the most important ICT enabled services that could help, especially in this difficult economic situation, by saving time, saving money, and lead to a better quality of life.

2. The Advantages of E-Banking as Compared to the Traditional Banking System

The terms e-Banking, online banking or internet banking refer to the use of the Internet to remote banking services, such as transferring funds or creating and closing deposit accounts [4, 5, 6]. For the online banking to exist, there are two major requirements that have to be met, the first being the access to these services, which means the infrastructure, hardware and applications that banks have to create and maintain and make available to companies and individuals. The second one is the take-up, the adoption of these services from the users mentioned above, problem that is centered around the security issue and the trust that the users can confer to this channel [7]. The users fear that, by using online banking, they expose themselves to privacy, security and financial risks, such as hackers gaining access to their usernames, passwords and so to their accounts and, ultimately, leading to possible identity theft, misuse of the system or transactional errors, that could cause monetary loss but also could have a powerful psychological and social impact. Another threat is associated with the usability and performance of the system, with difficultly to use web-sites, slow interaction due to low bandwidths, breakdowns of the system that could again be associated with monetary loss [8].

Once these issues are overtaken – and studies revealed the fact that the majority of the e-Banking users trust the system and did not have unpleasant experiences, as opposed to the ones that don't use it because they perceive it as distrustful [9] – there are many advantages of using the e-Banking as compared to the traditional banking system.

On the client side, the e-Banking means that the time and space are no longer significant, the users being able to access the banking services day and night, from any location that offers an internet connection. Considering the crowding of today's big cities, and the traffic problems, e-Banking could represent an important way of saving time by simply not having to go to the bank, and do the operations from the personal computer. The online banking also means reduced transactional costs, most probably, on one side due to the fact that the average Internet user expects services to be delivered through the Internet at low or no costs at all, and tries to impose that to all services delivered through the Internet, and on the other side because the banks are interested in incentivize the online banking. For the

banks, the online channel means less employees dealing with customers and operating transactions, which leads to cost reductions, or more employees focusing on value generating advanced services, through training and requalification as they are freed from front office tasks. Another advantage comes with the paperless work, meaning costs cut both on the client's and the bank's side with paper, printing and general office supplies, but also less room for errors in operating transactions as they are done electronically, without manual handling and retyping [10, 11].

Romania has a high development level when it comes to the availability of the online banking services, with 35 of the 38 commercial banks having a licence to offer online services at the beginning of 2009 [12], a ratio of over 60% of banks that offer online services in Europe in 2008 [13]. Besides, Romania has a good dynamics, with transaction value growing more than tenfold from 2003 to 2008, and users increasing from just 18 thousand to more than 3 millions [14, 15] (Fig.1, Fig.2) in the same period, meaning that the users are getting through the risks, and gathering the benefits of the online banking.

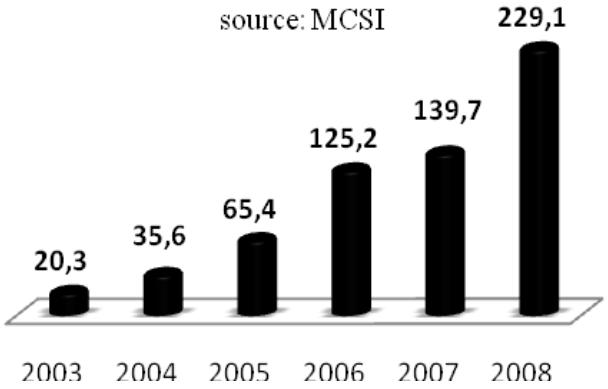

Fig. 1. *Transaction value in billion EUROs equivalent for distant access paying instruments*

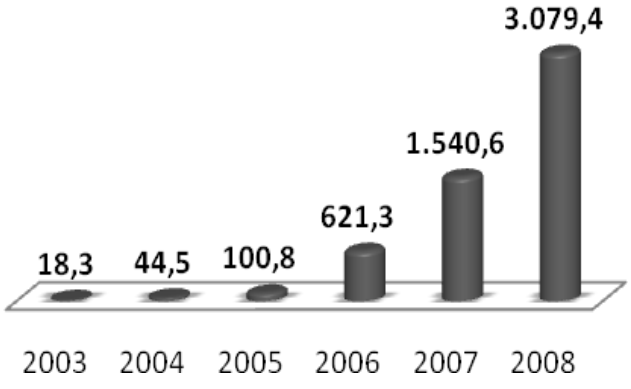

Fig. 2. *Number of users (in thousands) for distant access paying instruments*

Source: MCSI

3. Evaluation of Internet Enabled Conferencing Tools

In today's dynamic world, there are constant efforts on the companies' side to keep together all the essential parts of the organization, the core functionalities and competencies, the most important people. Good communication, that allows the flow of the right information to the right individuals, is a key aspect in achieving the integration and control needed in the organization. Good communication requires good collaboration skills and tools.

Meetings are a very important part of everyday business world. With clients and suppliers, or within the organization, meetings represent one of the essential instruments that allow a company to maintain the information flow inside the company and with the outside environment. And, although the face-to-face meetings are still the most successful, the internet enabled conferencing tools are alternatives to be considered.

Conferencing can be done, with the support of the internet, in many ways, through text, audio, video or combined, and also with extra functionalities. One of the simplest ways of conferencing is the Instant Messaging (IM) system, such as the popular Yahoo or MSN services. The IM service, at its roots and beginnings, allows 2 or more people to exchange text messages that are seen by all members of the respective conference, or "chat room". They can also send to each other files, in the form of documents, images or even video files, that can be accessed outside the chat room. Another type of online conferencing is the audio conferencing, where one of the most popular free services is Skype, a service that simply replaces the traditional phone calls to the internet calls that have the great advantage that, aside the internet connection costs, it does not imply any additional costs to the users, irrespective of the distance between the participants. In web conferencing, a third category of internet enabled conferencing tool, participants can view slide presentations, speak to each other through text messages, and work together on documents inside the conference room. There is a presenter, that can share his desktop or his application with the others, allowing everybody to see what he can see. The web conferencing also comes with the possibility to offer audio and video capabilities, so the participants can all see and hear the presenter, but not each-other [16, 17]. Video conferencing can be placed at the top of the conferencing techniques, due to the fact that is the most interactive, allowing all members of the conference room to see each other so it is the closest to the real face-to-face meetings (Fig.3). Speaking of the video conference, the ultimate conferencing tool available would be tele-presence. Tele-presence is a de-luxe version of the video conferencing, with each video location being a special designed room, all having the same type of furniture, wall colors, room heights, directional acoustics and lighting, packed with special high performance video conferencing equipment, conferring the closest sensation to being in the same room for people that could actually be in several locations around the world [18].

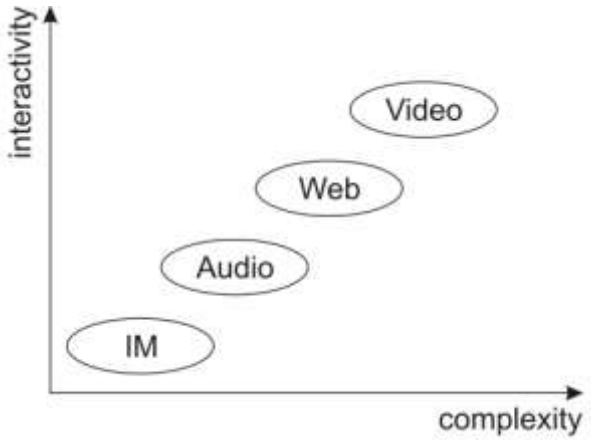

Fig. 3. *Complexity and interactivity in internet enabled conferencing technologies*

Adopted: Davis, A. W., Weinstein, I. M.: The Business case for Video Conferencing, March 2005, Wainhouse Research

The tele-presence is the ultimate solution in conferencing, but it comes with a price, more specifically hundreds of thousands of dollars, or Euros, per tele-presence room [19]. But, on today's market, there are solutions for all budgets. There are lower-cost video conferencing solutions that could cost tens of thousands [20, 21], but also, thanks to the new on-demand, SAAS model, there is the possibility to access multi-user web conferencing services, with audio and video at just several hundred dollars per month [22, 23], and the participants can see each-other, interact and work together as if they were in the same place, even if the "sensation" is not the one offered by a tele-presence system. The widespread of the internet, the constant rise of connection speeds, the decrease in internet tariffs, and the more and more affordable equipments like the PC's, notebooks and webcams, were the factors that made possible the convenient low-cost conferencing systems. Due to the above mentioned factors, there are even free services, like the Yahoo and MSN IM systems and Skype, with somewhat limited functionalities - for example not allowing the participants in multi-user conferences to see each other but just the moderator, and with no guarantees regarding the quality of the services, but offering an excellent tool for communication, especially for small businesses.

The two obvious reasons in favor of audio-video-web conferencing tools are the costs reductions, and time savings. To attend a meeting it usually means that one or more participants have to travel, whether from one side of a city to another, or to one region of the globe to another. If it is in the same town, the cost in time could be a few hours, but if the meeting implies traveling to another country, could mean a few days, attracting, flight, hotel, taxi, meal costs. All these costs can be eliminated when a meeting is set to take place through a conferencing system. Having to travel could also generate fatigue, and loss of productivity for the period of time the individuals are traveling. Even more, traveling affects the private life, because the time spent with the family decreases. So, if costs reduction and time

saving are the two tangible benefits, the increased quality of personal life and the higher efficiency and productivity are some of the intangible advantages to using conferencing systems. Another less tangible advantage is the opportunity to maintain a closer relation with the partners or the team, especially if it is an international team in multiple locations, by being able to communicate more often, with good interaction capabilities. Closer relations mean more sales, or higher purchase prices, or better team coordination and results, that could, in turn, provide faster response to the market or shorter innovation cycles. Conferencing tools could also offer the opportunity to coordinate dispersed teams, that could work in the location that best suits both company and individual interests [24, 25]. At the same time, the use of conferencing tools and systems could have a greater goal, above the individual or corporate level, by helping the "green" efforts in keeping the planet clean. In a 2009 speech, EU Commissioner Viviane Reding estimated that if the ICT enabled conferencing tools were to replace 20% of the business trips in Europe, more than 22 million tons of CO2 could be saved per year [26], the equivalent of the absorption power of approximately 5,5 billion grown trees (Fig.4) [27].

The importance and take-up of the conferencing tools are shown also through the figures. While the web conferencing market was estimated at above 1 billion $ in 2009 [28], the video conferencing market is expected to rise, from a little more than 1 billion $ in 2006, to more than 4 billion $ in 2014 [29, 30].

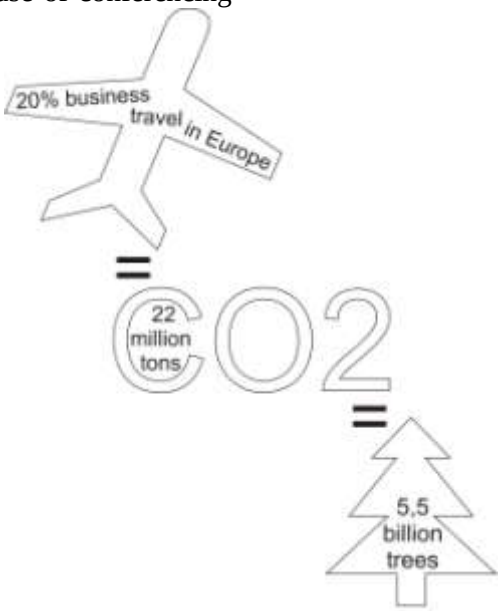

Fig. 4. *Business travel CO2 creation vs tree absorption power*

And the technologies of video conferencing are still evolving. One issue that is in need of a solution is the "eye contact" problem found in video conferencing meetings, where the participants look in the direction of the screen to see the other users from the distant location, while the camera is located above or below the screen, so it will almost always give the impression that

your partner is not looking at you, and not paying all the attention needed [31]. To advance further, researchers are trying to bring 3D technologies into the conferencing techniques, so that the reality "feel" of the live face-to-face meetings can be as closely reproduced as possible [32].

4. The Substantial Benefits of Public Eservices

Public eServices, or e-Government services, represent public services that have the internet support, so taxes can be paid through the internet, permits could be obtained the same way and public libraries would digitize their content, all for the benefits of individuals, companies and society as a whole. In Europe, the Public eServices became part of a e-Government strategy, being divided in 20 main basic services that were projected to be fully offered online, initially measured on a 4 level scale, from information availability, to one-way interaction and then two-way interaction, and climbing to the transactional stage, where full online availability was reached [33]. From 2007, a fifth level was introduced, targetisation, changing the role of the government services into a pro-active one [34].

Public eServices offer substantial benefits, for the provider – the government agencies, and the clients – companies and individuals. The cost of offering the public services through the web was calculated to be 100 times less compared to face-to-face interaction, and 10 times better than telephone interaction. The difference in costs is very important, so the government should do the best to set in place the framework, the infrastructure and also promote this kind of service delivery to the general population and companies. By offering the services through the web, similar to the eBanking, an important part of the workforce that used to be at the front office dealing directly with the citizens, becomes free of routine and low value tasks, and could be directed to new projects and higher value added assignments. But also, by reaching a high level of sophistication for a majority of the Public eServices, some of the government employees could no longer be needed, and unemployment could rise. In turn, same high levels of sophistication and the 24/7 access provided represent time saved for individuals and companies [35], that no longer have to go to the local government agency, to wait in a line, and even have to come back a second or third time if they do not have all the necessary papers in order to solve a certain issue. By saving time companies gain in efficiency, productivity and even growth [36], and could absorb more workforce, and equilibrate the unemployment increase in the public sector. Looking again at the government level, and considering the government system as a large company, a developed integrated electronic platform would, as in the case of the company, eliminate the information silos, make the information flow without barriers through the entire government system, to where it is needed, eliminating redundancies and by that cutting costs and reduce errors [37].

The electronic public services are not without faults and weak sides. It is indeed very important for the governments to provide access to as many services as possible, but there is a belief that just by creating the services, the users will come. Studies and researchers said it is not so, users are generally traditionalists, and prefer to be faithful to "the old ways", because they know how to do it, they are familiar with that system, and often they lack the preference or expertise for the digital channel [38]. The public services must be created, must have a good accessibility, but also have to be promoted, online and offline, people have to be told

in many ways that these services exist, and how they can be used, and what are their advantages. These services need a high degree of usability, because it is not a niche product, it is a services oriented at the general population, and the average citizens might only have low and limited web and computer developed skills. Another valid issue, found in most electronic services, is the security and trust problem. As the eServices demand and store more personal information, as these services are more and more integrated, there is a high perceived risk that these information might get in the wrong hands, and according to some theories, even the government itself could, in extreme circumstances, use these information to directly or indirectly harm the citizens in some way [39].

Electronic public services are expensive. They have to be reliable, to have a high degree of scalability, to offer good interaction speed to a large number of simultaneous end-users and back-office operators. The advent of the web 2.0 is apparently changing these concepts. The traditional approach of developing a service, with full deployment scale, backed by large funding, and then waiting for the users to access it appears more and more obsolete. Instead, EU governments believe that with little, insignificant amounts of money, but with the right people with the right skills and a large "quantity" of passion, better projects can be developed faster. And instead of fully developing these projects, to regional or national accessibility levels, the projects should be launched as soon as possible, in an early beta state, and keep upgrading them according to users' feedback. In this manner, lots of projects can be developed, with small financial efforts. From these projects, only a few could prove successful, but the monetary and time loss would be insignificant. The ones that do prove to be worthy, could be further developed, to achieve the desired levels of accessibility and usability [40].

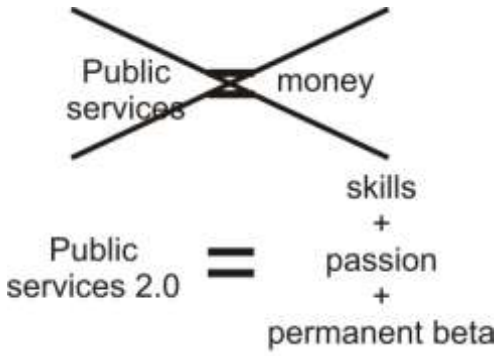

Fig. 5. *Web 2.0 in Public services*

5. Overview and Discussions

There are other ICT enabled services and tools that have already proved their benefits. One simple example is the e-mail, that replaced an important part of the distant communication needs, with just a fraction of the costs of the traditional methods. But while e-mail technology help by reducing direct costs, the average mail inbox is flooded by needed but mostly unneeded mail, misdirected, junk, spam mails. So, the average knowledge worker spends an important part of his workday to deal with the often huge amounts of relevant and irrelevant data that come

through the e-mail, wasting valuable time and energy that could be put elsewhere.

The world faces a deep crisis, one of the greatest of the last 100 years [41]. Measures are and will continue to be taken at individual, company and government levels. The focus is on reducing costs, and increasing efficiency and productivity. It is very important, especially in times of crisis, to optimize one's use of time. The 3 services presented in this paper, e-Banking, Public eServices and Internet enabled conferencing all share one advantage: time saved. As stated in an annual activity review of the Romanian Communication and Information Society Ministry, the priority is the citizen's time [42]. It is in fact time saved in the government agencies, in companies and for individuals. This time saved means money savings at all levels. Also, this time saved has a direct connection to the number of effective working hours and thus leading to greater efficiency in the case of companies and public administration. At an individual's personal level, the time saved could represent higher levels of life quality, less stress and frustration. At the society level as a whole, these services could mean less traveling, and by that less traffic, less CO2 thrown into the atmosphere and a greener planet (Fig.6).

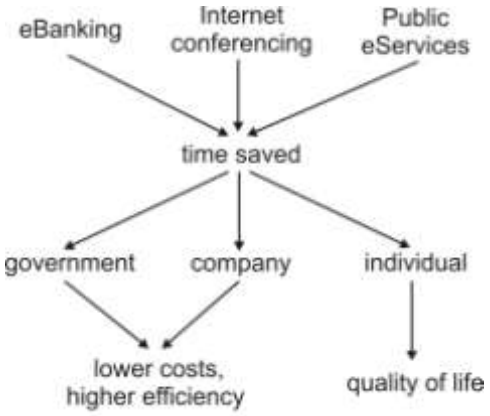

Fig. 6. *Time saved and benefits through ICT at individual, company and government level*

The use of these services does not require high costs. The e-Banking has already been developed, in most countries, by the banks, because they found it to yield great benefits for themselves. Because of that, the users, individuals, companies or government agencies, all are incentivized especially through lower costs in using the service. The Public eServices are also cost effective to the provider, and cost virtually nothing for the users, being companies, individuals or other government agencies. These services need only an internet connection and no additional programs to be installed on the users computers or devices. In the case of the conferencing tools, it is a little different, because here there is always some kind of program to be used, but there are tools that cost nothing. The conferencing is now used worldwide to keep in contact with friends and family, to meet with colleagues and business partners, and to participate in trainings and learning programs in the private or public sectors.

To be able to fully exploit these services, the general ICT requirements are to be considered: access, usage and ability. To the access issue, and considering the rich environment that characterizes today's

Internet, the EU responded with the Broadband Strategy, with the aim of full EU broadband coverage by 2010 [43]. In 2008, the coverage already reached 92,5%. But in terms of penetration, the same year recorded a 49% level of household broadband penetration [44], and increasing to 56% in 2009. According to Eurostat, Romania, for example, had a good dynamics, going from 13% in 2008 to almost the double at 24% in 2009, while still remaining last among EU countries [45].

Household broadband access, 2009, % *Table* 1

Romania	24
Bulgaria	26
Greece	33
Italy	39
Slovakia	42
Portugal	46
Cyprus	47
Czech Republic	49
Latvia	50
Lithuania	50
Spain	51
Hungary	51
Poland	51
Ireland	54
EU 27	56
Slovenia	56
France	57
Austria	58
Estonia	62
Belgium	63
Malta	63
Germany	65
United Kingdom	69
Luxembourg	71
Finland	74
Denmark	76
Netherlands	77
Norway	78
Sweden	79
Iceland	87

Source: eurostat

For companies, the percentage is much higher, with an average of 83% in 2009, but Romania, again last, with 41%, and decreasing from 2008, is lagging behind the majority of EU countries[46]. In terms of internet usage ability, in 2007 the EU27

average for high internet skills was 8%, 23% for medium skills and 29% for low internet usage skills. Romanian users were again last in EU, except for the low internet skills, were they surpassed Bulgarians and equaled the Portuguese performance [47].

It has been found that companies with higher IT capabilities have higher eServices levels of use [48]. As already stated earlier in this paper, although the infrastructure and availability of services is essential, it is not sufficient, and efforts must be put into learning programs and promoting the services. Again, it is important that electronic services oriented to the general public to be easy to found and use, because of those percentages mentioned above.

6. Conclusions

As the world is constantly learning from its experience, it is moving closer to what it is called a social market economy, offering freedom but, at the same time, control while positioning the citizen at the very core of the economy. The actual crisis is a warning about the sectors that fell out of control, and the path that should be taken, to ensure greater stability and to protect the interests of the global citizen. ICT are tools, but powerful ones, capable of making a difference in the new economy, especially in crisis time. The benefits of the services presented in this paper, among many others, could represent an answer to the question many companies and governments probably ask themselves, whether it is beneficial or not to invest in ICT in times of recession and crisis.

Notes

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