E-INVOICING AND E-GOVERNMENT – IMPACT ON BUSINESS PROCESSES

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Abstract
Electronic invoicing (eINV) presents a possibility to use information communication technology for both the automating and redesigning business processes. Therefore, several initiatives at European level have been raised in order to facilitate the eINV environment. From the 1st of January 2015, eINV has become compulsory for the Slovenian public sector and companies with a registered office in Slovenia providing public services. However, since not every “e-initiative” is successful, the paper examines the effect of using eINV on business process performance. The paper therefore analyses whether eINV is streamlining administrative procedures, enhancing security and cutting costs. Moreover, it also analyses whether business processes were merely automated or also redesigned. Even though at the moment the regulation only concerns public sector, it may also present a large incentive to eINV in the private sector and therefore it is important to outline both its advantages and its pitfalls.

Key words: e-Government, e-Invoicing, business processes
1. INTRODUCTION

Information communication technology (ICT) presents massive possibilities for organisations and a society. After all, it enables innovation in business models, optimisation in business processes, facilitates business networking and presents new unprecedented possibilities for the society. Eventually, ICT is recognised as one of the most important factors for organisational competitiveness and overall economic growth.

However, technology itself is not a sufficient factor for an organisational performance since only considering the strategic role of ICT and its integration into business processes may lead to comparative advantages. Nevertheless, business processes are so interwoven that the technology in the organisation cannot be distinguishable from the business processes and services that use that technology. Yet, organisations still often only automate existing business processes rather than use the ICT to completely redesign business processes. The latter is especially significant for e-government initiatives.

Electronic invoicing (eINV) presents additional possibility to use the ICT for both the automating and redesigning business processes. Therefore, several initiatives at the European level have been raised in order to facilitate the eINV environment. The first January 2015 was a milestone for Slovenia in the field of IT support to business operations. The Regulations provided that eINV is compulsory for the whole public sector. In addition, it is anticipated that also all other organisations outside the public sector will follow this initiative.

Therefore, all domestic suppliers of government and public administration have to submit only electronic invoices. Since not every “e-initiative” is successful, the purpose of this paper is to examine the effect of using eINV on the business process performance, to analyse whether business processes were merely automated or also redesigned and to outline the advantages and disadvantages of eINV. Transition to e-business requires vision and the organisations should not focus on paperless operations only, but should also rethink the processes.

The paper is divided into five main parts. It begins by examining the theoretical background on business processes, eGovernment and eINV. Second, the regulation of eINV in some other countries is described, followed by the introduction of eINV in Slovenia. In the fourth part, the impact of eINV on business and Public Administration is presented. In the last part concluding remarks with future research opportunities are outlined.
2. LITERATURE REVIEW

2.1. Business processes and business process management

Business Process Management (BPM) is set of organizational principles and methods intended to organize, manage and measure particular organization focusing on its business processes (Harmon, 2014). BPM was introduced more than 20 years ago; however understanding the concept still varies amongst academics and practitioners (Reiter, Stewart, Bruce, Bandara, & Rosemann, 2010). BPM generally refers to the improving, managing and controlling essential business processes” (Jeston & Nelis, 2006). Due to several failed projects in organisations the interest in BPM is growing in both practice and research (Houy, Fettke, & Loos, 2010). Business processes are becoming more and more important since they present a way to achieve and attain value for internal and external customers (Melão & Pidd, 2000).

BPM has been regularly ranked as one of the main priorities for top managers in organisations (Johnson & Lederer, 2010) since it can bring long-term competitive advantage (Gartner, 2006). The attractiveness of BPM enables a holistic approach to the organizational transformation since it includes methods from different fields including management, engineering, IT and thus enables a complete approach towards organizational renovation. A lot of research has shown that organizations can improve their performance by focusing on the process view and emphasizing business processes (Davenport, 1993; Sidorova & Isik, 2010; Skrinjar, Bosilj-Vuksic, & Indihar Stemberger, 2008).

BPM assumes that organizations have several core business processes that add value to customers, and different support processes that are invisible to external customers but important for performing organizational operations (Rummler & Brache, 1995). However, BPM as a quite new discipline still needs academic agreement upon conceptual framework (Møller, Maack, & Tan, 2008) and alignment with industry needs (Indulska, Green, Recker, & Rosemann, 2009).

Highly tied to BPM is process modelling or process representation particularly when redesigning processes since the main purpose of modelling is to facilitate understanding of business processes by involved users, and to support process management (Curtis, Kellner, & Over, 1992). The focus of process modelling is generally on costs, resource utilization or on the automation level where detailed specifications are needed (Decker, Dijkman, Dumas, & García-Bañuelos, 2010).

2.2. eGovernment

The essence of eGovernment is to radically change the ways and mechanisms of operating the administration and, as a result, the basic principles on which these mechanisms have been developing in the last few decades or even
centuries. Governments are trying to adopt concepts and managerial practices that are widely used in private companies (i.e. business process renovation) in order to reduce public spending, improve the quality of service, and cut business process execution times (Jones, Hackney, & Irani, 2007).

Although eGovernment has received much attention from the fields of academics and business, the success of eGovernment projects remains limited. Further, the literature reports that critical factors that enable citizens to adopt eGovernment are still to be confirmed (Shareef, Kumar, Kumar, & Dwivedi, 2011). In spite of this, many papers in leading research journals display a naive optimism by simply regarding IT as a good thing and ignoring the evidence of the definitional vagueness of the eGovernment concept, the oversimplification of eGovernment development processes within complex political and institutional environments, and the various methodological limitations that result in the widespread failure of eGovernment (Bannister & Connolly, 2015; Hardy & Williams, 2011).

Nevertheless, eGovernment implementation is only achievable if it is introduced together with the business renovation of the public administration and also private companies (Groznik, Kovačič, & Trkman, 2008). However, one of the main problems in eGovernment remains the renovation of internal business processes. Realization of the goals set by any e-initiative is less possible without business process modelling and renovation (Groznik & Trkman, 2009).

2.3. eInvoicing

E-Invoice is an invoice for the goods delivered or services performed issued to the debtor or recipient in electronic form and equivalently replaces an invoice in the paper form. Recipient of an e-invoice is a budgetary user or legal entity or individual person. An e-invoice is therefore considered as a document that contains mandatory elements regardless of how the document is originally called (invoice, credit note, debit note, advance payment invoice, payment request...).

3. REGULATION IN DIFFERENT COUNTRIES

According to the report of the International Market Overview & Forecast there are almost no changes in the last two years regarding International eINV market. A global situation of individual countries in the world in the field eINV is presented in the Figure below.
Slovenia is not among the first countries to introduce eINV, though eINV is still not settled in many countries. Founding the system in Slovenia is based on its own experience of the Public payment Administration (PPA) in Slovenia and the experience of foreign countries. However, there are substantive differences among countries where eINV is already settled. Therefore, an important task is to further regulate and arrange the exchange of eINV with other countries – making the system comparable.

3.1. Finland

Finland is a leader among European countries regarding eINV. The country started with eINV in 2003 with the B2B interface, while B2C interface was introduced in 2007. They started with a single simple standard called "Finvoice" which was improved in years. In Finland each company is connected into a network through one “intermediator” who maintains connections with others and enables to exchange information within this network. They also maintain unified content requirements in order to send and receive eINV over the network irrespective the source or destination format of the data.

Networked eINV model is based on bilateral agreements (standards and technical demands) between a network of declared e-invoice intermediators.
The use of eINV is relatively good in B2B segment but B2C still has a low penetration stage (Anon, 2013). The research has shown that banks should invest a lot of effort in order to convince consumers to use eINV. Individuals namely accept such changes only when it is required or they do not have any other, or where significant savings in comparison with conventional accounts are evident (Horvat, 2014). Therefore, it is evident that companies in Finland perceived the business benefits when shifting towards automated processes.

3.2. Denmark

In Denmark, the initiative for introducing eINV was done in the public sector. It was stated by the law that from the February 2005 all 44,000 organizations must issue invoices to the public sector in electronic format only. The public sector annually receives approximately 18 million accounts, so it was expected that the process of receiving invoices annually saves from 120 to 130 million eur. The eINV initiative was part of the project of public administration digitization, with the purpose to improve the efficiency and quality of public services including fewer errors, faster implementation and lower labour costs.

Issuing and receiving electronic documents within and with the public sector is based on generally accepted XML standard and Danish Standard OIOXML (Offentlig Information Online). Compulsory elements of eINV must consist of EAN - Location Number of public institutions, Number of requests for tender or contract, Contact number or reference and Internal account number.

Invoices are issued according to the information technology that is available, namely: (1) directly from the IT system via VAN network to the public sector, (2) using a web portal where with a username and password allows users to create invoices and electronic submission or (3) issuing invoices in paper form to the service provider scan, which converts it into e-form with all the required information and send to the relevant public institution. This service allows national and foreign organizations without appropriate information technology to cooperate with government institutions in Denmark.

3.3. Norway

The Norwegian public sector eINV project started in 2009. The infrastructure for eINV is based on the standardisation framework and specifications developed during the PEPPOL (Pan-European Public Procurement Online) project (Ciciriello, 2014).

According to PEPPOL the main success factors of the Norwegian approach to eINV are regulatory measures, EU-wide interoperability and connectivity through PEPPOL. In July 2011, it namely became mandatory for all
central government entities to receive invoices electronically in a standard format, while in July 2012 it became mandatory for central government entities to require their suppliers to invoice them electronically using a national implementation of the PEPPOL specifications (Ciciriello, 2014).

This approach is replicable outside the Norway since business processes and the technology that is implementing these processes are aligned with European-wide business requirements. Therefore a Member States can replicate the Norwegian realisation with a lower risk. Some of the countries already implementing the PEPPOL approach for eINV are: Austria, Denmark, France, Ireland, Italy, Netherlands, Poland and Sweden.

In the last years there is a 20 per cent annual growth in the use of eINV in EU. Nevertheless, the EU Digital Agenda has set itself the goal that by 2020 companies and individuals in the EU should gain maximum benefits from the e-business. Moreover, the reason for this growth is also in the increased use of e-procurement in the public sector within the EU which requests the use of eINV (Horvat, 2014).

3.4. Advantages of eINV

Advantages are quite similar in all countries that started with the eINV initiative. The main advantages refers to reduced paper consumption; more secure sending comparing to traditional methods; faster operation due to automated data exchange accounts; more transparent working with accounts and more control over the accounts; reduced number of errors because transcribing the data is not required; working with the accounts is fully automated including receiving invoices, posting in the document systems, posting the entries in the accounting system and preparing the payment journal. eINV also allows simple audit traceability. Moreover eINV enables lower operating expenses due to less paper consumption, less or no postal services and less manual work. Besides that, there is no need for large physical archives since documents are stored in electronic form. Any organisation can significantly improve, refine and upgrade its operations with the above advantages.

Some calculations suggest that the plain paper invoice cost a company up to 14 euros including the cost of equipment, labour and infrastructure, while the electronic invoice costs a company only 1 euro (Varga, 2014). Yet, selecting proper solutions for the issuing, receiving and storing e-invoices is of a great importance. Besides, additional investments for implementing eINV, various problems in the transition process that are making eINV more complex, should also be considered.
4. E-INVOICING IN SLOVENIA

4.1. Legal basis

In December 2013 a new Act on provision of payment services to budget users (ZOPSPU-A) was adopted. The novelty that was brought by it was that budgetary users will have to receive invoices and attachments only in electronic form. Consequently, all service or good providers for budget users will have to use eINV.

The new Act defined that the budget users can send and receive e-invoices only through the PPA. The PPA is therefore both an entry and exit point for the exchange of e-invoices with budget users. The new Act also defined the standards and terms of the exchange of eINV through a single point at the PPA including that (1) the exchange of e-invoices for budget users is carried out only through a web application PPAnet; (2) e-invoices must be in the form of mandatory eSLOG, which is a single standardized format for e-invoice in Slovenia; and (3) e-invoices are obliged to be signed with an digital signature.

4.2. Difficulties in the transition to the new system

Many organisations had problems because their focus while introducing the support for business with eINV was only on the developing solutions for eINV by Slovenian standards (eSLOG) and their transmission to the PPA. At the same time they forgot to three particularly important things to comprehensively solve the problem:

1. Dealing with e-invoices will be extended to all entities in the economy, to all enterprises as well as consumers. Experience of countries that introduced eINV before Slovenia indicates that such laws encouraged the entire industry to accelerate the transition to eINV. Companies should therefore provide the support of sending e-invoices to existing and prospective customers. Companies that have support for eINV tied to transmitting via PPA only, will shortly have to make additional changes.

2. The requirement for automating internal processes. Providers of ERP systems focused primarily on the e-invoicing module in their solutions forgetting that organisations have other procedures of receiving and issuing invoices. It is reasonable that organizations are introducing the system for closing and confirming invoices; however the solution should also cover those invoices that are received in a paper format. Therefore, if any organization should have a complete control and overview, a single uniform system for confirming invoices should be developed. Redesigning business processes may also be needed.

3. Archiving. Under the Law on Value Added Tax, each issued and received invoice must be kept ten calendar years, while some particular accounts should be kept even longer. Consequently every budget user had to
provide by law compatible electronic archive, establish by him or hired from one of the archive providers.

4.3. Issues with implementing eINV in Slovenia

Beside several advantages of eINV already presented there are also some disadvantages or problems related to eINV. The first issue refers to “The European eINV” since Slovenia will have to adapt its own standard (eSLOG) to EU requirements by 2017 which will present additional work and confusion for organizations. The issue is related to too simplified standard eSLOG since due to the desire to maximize ease of use for small businesses and entrepreneurs too simplistic form was chosen. Therefore, special features such as securities, different currencies... present an important issue. Moreover, foreign IT developers willing to adapt their solutions to the new laws and requirements, have problems since the instructions for using eSLOG are not in English. PPA did not provide the money for such a project. Additionally, eSLOG did not foresee entering various special items related to doing business abroad, which led to difficulties for exporters and importers.

In the beginning the portal for e-invoices at PPA was not available for users using Mac and Linux. The issue was solved in three months; however considering continuous business it presented inconvenience for many organizations.

4.4. Examples of good and bad practices

Primary School DBV (name is fictional) was prepared for eINV before 2015. DBV believes that eINV is much simpler than traditional invoicing and is also accelerating the processing of invoices. Besides, the software they are using is very simple to use, even for those who are not skilled in the use of computers, as caretaker, cooks and cleaners.

Prior to the introduction of eINV employees often went to the Secretariat, where the secretary had to look for the invoices in different folders. With the introduction of eINV they have better control over invoices waiting for validation, which means that they can timely remind certifiers.

With the transition to e-archiving they had to unify also some internal rules, since beside archiving procurement documentation and issued invoices DBV wanted to e-archive also the rest of the received mails and other business documents including payrolls. All these factors have contributed to automating processes and to easier and faster operations.

However, the transition to the eINV in certain municipalities caused quite a few problems and additional costs. Municipality “I” already spent 6,000
euros just for upgrading software programs, while computer replacements was also needed since not all were suitable for processing e-invoices.

Municipality “II” paid around 12,000 euros for purchasing new software, including installation, deployment and education. Software Maintenance is costing the municipality 190 eur per month, while they have to pay for archiving the documents additional 100 eur. The municipal administration did not have any particular problems of introducing eINV, but they do not understand why the state introduced a system for one segment only. As a municipality they receive invoices electronically, while several claims by other associations or public institutions are still in printed form. The same applies for all claims the Municipality “II” is sending to the government.

Poor instructions distracted employees in the municipality “III”. PPA had namely sent the wrong settings to IT developers. Moreover, PPA did not prepare any instructions for the practical examples, such as accepting a credit note, rejecting invoices, accepting invoices related to the previous years... For every issue they had to ask the support service at PPA where different consultant had different opinion. Besides, they expected that PPA would build in controls for checking the correctness of the invoices, but it was left to the sender (Vidrih, 2015).

5. E-INVOICING AND ITS IMPACT

5.1. The impact on business

In the market there is a flood of services and solutions that enable users issuing or receiving e-invoices. One of the main problems small farmers, craftsmen and entrepreneurs encountered in the beginning was issuing a small number of invoices per month and consequently not using IT. It is possible to authorize another person or organisation such as their accountants; however users that are defined as "small publishers" can enter only five e-invoices per month via PPA portal.

The majority of small or medium-sized enterprises in Slovenia is already using IT support for their business, so they only need to upgrade or adjust their software for e-invoices to comply with the standards eSLOG. It is estimated for the companies that sending or receiving from 1,000 to 10,000 invoices per year can reduce costs by using e-invoice by 10 to 15 cents per e-invoice. In Company A (dealing with the water supply) the cost of sending invoices was significantly reduced. The price of printed form was 0.4, while e-invoice cost them 0.04 euro (Vidrih, 2015).

Companies issuing a large amount of monthly invoices are striving towards full automation because they want to regulate the work of e-invoices in the document system, applications, or in the entire information system so that it will automatically do most of the work.
E-invoices have been adopted differently among the employees; however, mixed feelings are normal for any novelty. During the transition to the new systems a proper communication and demonstration of the added value in the eyes of the user is extremely important. Employees have recognized the benefits mainly in spending less time on each activity and reducing the number of errors due to manual input of data. Besides, e-invoicing significantly reduced administrative tasks.

However, organizations should standardized internal rules for work or redefine their procedures. Particularly in smaller companies a desire to standardize processes is evident since the entrepreneur does not want to deal with bureaucratic tasks, but to devote its time to his core business (Varga, 2015).

5.2. Adapting to the new system and changing business processes

All organizations issuing e-invoices had to arrange everything necessary to send and receive e-invoices and to agree with their customers regarding other ways of invoicing. E-business presents a great opportunity for each organization to rethink its business strategy and to make necessary organizational and procedural improvements. Companies that have successfully managed this turnaround will gain a competitive advantage since they will be more responsive to customer requirements on the local and global market. Nevertheless, e-business facilitates the automation of business processes and creates new innovative business models.

eINV is reducing the time needed to perform a traditional task and therefore accelerating the work. It would be reasonable to transfer these advantages to the whole supply chain. Extended exchange with partners, vendors, and customers is presenting an additional added value to the business.

5.3. Implications for the Public Administration

In the first two months after the introduction of eINV there was 609,000 invoices exchanged via PPA portal, of which 549,000 were given to budget users in accordance with the provision of payment services to budget users. This exchange was actively supported by the PPA, banks, and 43 providers of electronic channels. Quite a large number of issuers (13,117) registered via the PPA portal for issuing e-invoices, releasing 26,300 e-invoices.

Active use of the system also revealed some shortcomings which are trying to be continuously eliminated. Many e-invoices were also rejected by the recipients because they were not accompanied by the visualization; however, visualization is not legally mandatory appendix to the e-invoice. Moreover, in the
beginning organisations repeatedly send the same invoice several times given the fear that the procedure was not carried out regularly.

6. CONCLUSIONS

E-invoicing in Slovenia is only the beginning of a new era and presents a possibility to use IT for automating business processes. In the last decades there were several failed IT implementation projects and management often considered IT department merely as a support function, whose only goal was to automate business processes (Dos Santos & Sussman, 2000). As a result, companies often only automate existing business processes rather than using IT to redesign the business process (Kovačič, 2004). The same applies to many “e-initiatives”. Therefore, the paper examined the effect of introducing eINV in Slovenia on business process performance.

Since the eINV initiative in Slovenia was introduced only a few months ago, it is difficult to estimate the true impact on the business process performance. However, it is evident that the majority of organisations are using eINV merely to automate the existing processes without rethinking or redesigning them. The paper also considered financial consequences where savings will be evident in the longer period since many public organisations firstly needed additional investment in order to successfully implement eINV.

Nevertheless, all this investments are not a sufficient factor for improving organisational performance. Without properly integrating IT into business processes and constantly rethinking their efficiency, organizations will hardly obtain or retain comparative advantages and remain efficient. Therefore, future research and detailed case studies are needed in order to constantly monitor to what extent organizations are using IT to merely automate exiting processes and forgetting about their redesign.

REFERENCES


