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Integration of the Finnish National Tax Administration Systems with EU Recapitulative Statement Data

Raita Melasniemi[1] and Rauno Pirinen[2]
[1]*Finnish Tax Administration, Haapaniemenkatu, Helsinki, Finland*
[2]*LAUREA University of Applied Sciences, Vanha maantie, Espoo, Finland*

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Abstract: This study examined the European Union recapitulative statement data integration with the Finnish national tax domain. The main challenges identified in realizing international integration were communication, cooperation and distribution of information. In particular, the development of integration faced ontological challenges in terms of specifications and final definition. The results highlight the process model and mechanism for design digital system integration in distributed environments across national borders. The study also offers administrative implications.

1 INTRODUCTION

This study focuses on the integration of the European Union (EU) recapitulative statement data with the Finnish national tax applications and digital information system.

Recapitulative statement data comprise value-added tax (VAT) for businesses registered with the EU member states that provide intra-EU supplies to actors who are obligated to complete recapitulative statements. The statements list the aggregate value of goods and services supplied to VAT-registered customer elsewhere in the EU.

Economic operators submit recapitulative statement data to their member states authority, which is in charge of the VAT control and management system. Member states collect VAT information and store it in the value-added tax information exchange system (VIES) database [see: Appendix (DG TAXUD IT AO-03, 2012)].

The rationale underpinning this study is to learn the integration of such data and its challenges as well as contribute to the effectiveness of similar system integration and development.

Overall, the reasoning culminated from a new framework for administrative cooperation in the EU, which is related to proposals made by the European Commission in the past few years, and the implementation of the framework by the Council for administrative cooperation [note: Appendix (COM 722 final, 2012)].

Setting of new legislative instruments addresses the manner in which new tools and instruments are developed by the Commission and member states [see: June Communication in the Appendix (COM 351 final, 2012)], which highlights effective and comprehensive use by member states yet to be attained. The member states must ensure full and effective implementation and application of these instruments, particularly by engaging in an enhanced exchange of information.

In the Finnish tax environment, the amount of data collected from the taxpayers has increased in the past years. These enterprises are part of a group who have to provide a recapitulative statement and adhere to VAT control procedures. This setting is based on the Council Directive 2008/117/EC of 16 December 2008, amended from the Directive 2006/112/EC on the VAT common system, aimed at combating tax evasion related to intra-community transactions and obligations to declare services along with goods transposition in the member states beginning in 2010.

In addition, the time limit to declare intra community supplies in the recapitulative statement has been reduced from the calendar quarter to each calendar month within a period, not exceeding one month [Appendix (EUR Lex, 2008)].

Administrations are obligated to exchange increasing amounts of information and data and require companies to electronically submit the

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recapitulative statement. Therefore, there is growing need for increased information system integration within Finnish tax administration at the national level. While tax administration requires declarations from enterprises, the tax administrations' obligation is to exploit the data received.

Similar expansions can be noticed in line with this study. The same type of development and realisation work is being observed across Europe in tandem with such changes.

These changes strain and increase the administrative burden for taxpayers. Therefore, it is significant to use the collected data for tax control and audit purposes. Such data use is important to benefit compliant taxpayers. In terms of tax administration, this means developing tools to identify fraudsters and those who do not qualify for the settled rules. These tasks should be performed using appropriate technologies that equally cover the entire field of targeted taxpayers.

This study is based on activities and actions performed to fulfil requirements to operate in line with governmental viewpoints. The Finnish Tax Administration Information Systems are currently capable of collecting and exchanging data in line with concerned regulations.

There are additional obligations which can be improved using existing digital information systems. These aims warrant the national integration of information systems and increased global sharing of digital information.

At the macro level, this study was completed in compliance with the international research and development agenda. The study expanded and produced additional viewpoints from the students' workplace to the European Union's Common Information Sharing Environment's (EU CISE, 2020) research project and dissemination, the EU CISE 2020 research consortium and Finland's research agenda targets.

The study examines information sharing applications to foster cross-sectorial and cross-border collaboration between public authorities and the dissemination of the EU CISE 2020 initiative as well as the steps along the recapitulative statement data roadmap in the EU.

The macro-level work of interest entails the possible experimental environments encompassing innovative and collaborative services and processes between European authorities and actors and takes as reference, an extensive spectrum of factors in the field of European integrated services, arising from the European legal framework, collaborative studies and related pilot projects.

Expected advances of this study were addressed in an investigation of tax administrative and controlling processes and implications, such as technical, practical and administrative viewpoints.

The main finding of this study is a mechanism and realisation steps in information systems integration. The model contributes an improved an effective way to perform similar projects in distributed digital architecture and a multi-unit environment where several international parties and actors are involved.

2 METHODOLOGY

This study attempted to answer the following question: how can information systems related to the EU recapitulative statements data be designed, realised and evaluated?

More specific to this research, how can recapitulative statements data from EU member states be integrated with the Finnish national tax administrative systems?

The unit of analysis uses a realisation project that has been well documented and launched as a case study.

The rationale underlying this unit of analysis and study is to learn how EU recapitulative statement data can be nationally integrated and the entailed challenges as well as ways to improve the effectiveness of similar system integration developments.

The purpose of this study is in the realisation, design and evaluation of the Finnish national tax information systems.

The selection of the questions 'how' and 'why' led to the choice and use of descriptive methods, as described in (Robson, 2002). Therefore, and due to the nature of the present research question, a qualitative analysis, case study research approach (Yin, 2009) and design science theory and process (Gregor, 2002) were used as the research design.

This study includes a literature review and empirical research data, including documentation material (n = 188) and interviews (n = 6).

Investigated data collected were triangulated (Campbell and Fiske, 1959) and analysed, as advised in Miles and Huberman (1994).

From the methodological viewpoint, the present analysis is a case study with a design science research extension in the domain in which the EU recapitulative statements data can be integrated with national applications (Hevner and Chatterjee, 2010).

In this case, the rationale is the research and development project launched in response to the need

to develop a more efficient way to use collected and stored data for tax control and audit purposes [cf. methodology in Nunamaker and Briggs (2011)].

The important motives are to improve the efficiency of tax control, neutral treatment of customers and progressive use of collected data. Achieved impacts were estimated to harmonise customer service, improve tax control and tax auditing processes and reduce manual work and redirect tasks to the appropriate answerable taxation unit [cf. methodological in March and Smith (1995) and Markus et al., (2002)].

The integration development adopted by the tax auditing unit was based on the EU Regulation 904/2010 and its demands to improve administrative cooperation and tackle tax frauds.

In addition, the main methodological references reviewed were as follows: the case research strategy in Benbasat et al., (1987) and rigor in information systems positivist case research by Dubé and Paré (2003).

3 RESULTS

The first administrative implication of this study is that the participants of development work should be committed to being careful and has strong will to meet the objectives of parties involved in the international integration project.

The study also reveals that resources should be afforded and participants have professional skills and adequate knowledge and capabilities in the applied domain.

Further, the roles of the participants have to be clarified for all parties.

The importance and need of cooperation and information sharing have to be understood and realised in the project and research environment.

However, the main challenges in the integration project are communication, cooperation, trust sharing and information distribution.

Development mostly faces challenges in the specifications and final definition of integration. Here, these two ontology-related parts are strongly linked.

The study further revealed that pre-operational validation and balancing work pressure and workload in the project as well as steering cognitive settings reduces difficulties.

3.1 Project Issues

Issues experienced in the project could not have been solved solely with an understanding of the entire tax system or deeper testing. There were numerous issues which could not have been tested in advance, also known as preoperational validation, and some situations were only discovered after the implemented artefact was in use. This point reiterates the importance of technical specifications and control process methods.

In this case, the implications for development works vary by purpose of data. Differences in businesses lead to misunderstandings between parties. Other parties tend to value technical matters more than others. This causes weight differences between parties and varying levels of understanding regarding the entity of the project tasks.

One of the most challenging aspects seemed to be cooperation between business units, that is, better communication between business and information system professionals.

A review of the extant literature reveals a widespread agreement on the importance of user involvement in system development and maintenance; however, the level and quality of user involvement often remains inadequate.

Even though the environment was a mature collective, users found it difficult to express their needs'. At a different organisational level, but in a similar vein, misalignment between business and information systems is an ongoing source of frustration and inefficiency.

In this case, there are several participating parties from different system organisations and businesses, where communication becomes increasingly important. The roles of the parties should be clarified for all participants of the project. More specifically, the role describes the responsibilities and authorities of the actors.

In this case, it is recognised that, if the technical solutions and business unit's needs are in contradiction, there should a person who understands the technical and business side to guide both ends to a final solution. The end-user view and user-centred aspects should also be carefully considered.

Further evaluation shows that some parameters have already been re-evaluated and corrected to meet the requirements from the perspective of everyday use. These changes can be seen as a normal cycle in the development of the digital information system.

From the research data and the evaluation of the project perspective, it is evident that all decisions made regarding the implementations were not optimal. Thus, it is essential to account for diverse understandings when there are many operators and needs.

Preliminary integration work and information sharing should have been performed better throughout the project. Certain misunderstandings and lack of knowledge affected the final specifications and implemented solution.

3.2 Communication

Communication channels should undergo project organisation. The transparency of all prepared and implemented plans, decisions and actions should be available to all parties. The distribution of information is important to maintain uniformity and for further evaluation. From a communication perspective, the work flow for a successful project should be as follows:

Business representatives should communicate and identify the aims and final objectives and at the same time, the technical side should be aware of these aims to develop a sufficient understanding of the business.

A mutual consensus and trust has to be achieved before technical development. These aims should be clear and accordingly, technical plans and decisions should be made. The business and technical side have to evaluate final decisions. All concerned parties have to accept and subscribe to the plans.

Implementing the technical solution should be trouble-free and when the implementation is complete, the development lifecycle can proceed with the evaluation and re-specification when needed.

3.3 Documentation

During the case project, there was also a need for more accurate reasoning in the decision-making process for development. Decisions have and will always be questioned and therefore, there should accurate documentation and reasoning in place. Appropriate documentation can significantly help further evaluating purposes.

The importance regarding documenting reasoning and general reporting was highlighted by several interviewees. There appeared to be a need to improve project documentation for the entire project. Furthermore, through the research, it was realised that there was no exact consensus on the goals and aims during the development work.

Few other problems identified were confusion in the decision-making process and regarding roles as well as the mandate to perform certain actions. The evaluation showed that, in addition to communication, reporting was inadequate and should have been improved.

3.4 Proposed Model

The model and results answer the following question: how can information systems related to EU data be designed and evaluated?

An attempt to answer the question ‘How can EU data be integrated and digital information systems designed?’ facilitated the motivation underlying this study: the description of a mechanism as well as guidance and process steps for development.

List of process steps for development followed:

1. Participants of the developing work, that is, project organisation should be carefully selected and there should be a strong will to complete the objective proposed by all concerned parties.
2. Sufficient resources should be available and participants must have adequate knowledge and the will to see the project through.
3. Role descriptions should be clear in the early phase and revised later, if necessary.
4. Business representatives should communicate and identify the aims and final goal. The technical side should be presented; however, interviews should first focus on listening or obtaining information to sufficiently understand the business side.
5. A mutual consensus has to be reached before technical development. This solution should be clear and decisions should be made on the basis of the setting.
6. Technical planning, including specifications, process descriptions and final documentations, should subscribe to the entire project organisation and serve as a transparent information sharing process.
7. Plans should be evaluated by both, the business and technical side, including all participating operators. If something remains to be addressed or revisited, then step four should be reconsidered.
8. Implementation should be clear and trouble-free if all previous steps have been completed.
9. Implemented functionalities should be evaluated.
10. Check if re-specification is needed.

There should be adequate knowledge and open mindedness to identify as many scenarios as possible and an eye for future development in the environment and related changes. In addition, there should be awareness regarding how integration can affect confidence in the existing processes.

Another implication is that when outside customers are involved, the customers’ perspective should be accounted for in the scenarios.

There is always a gap between the technical and business side. Research data have often highlighted that information systems do not talk the same language as businesses. Despite the lack of a mutual language and ontological understanding, it remains important to involve both sides from the beginning. The roles and activities will undergo continuous change during the project steps.

A similar discussion can be found in the literature regarding business professionals facing difficulties in discussing software-related details that are not directly linked with everyday work. In addition, discussions related to information systems could miss several key terms and 'displays', which can engage business professionals and should be discussed before dealing with technical details.

4 CONCLUSION

The study marked at identifying more efficient ways of tax control in the domain of recapitulative statements data integration. Information systems and tools were distributed and a lot of manual work was conducted to control recapitulative statements data.

The results indicate that it is important to evaluate the integration project. The need for integration was obvious, but a deeper understanding was needed with an in-depth analysis of the development project.

It also offered implications for tax administrators regarding the effectiveness of similar projects and the importance of cooperation communication. A more effectively run project can reduce costs and help devise better ways to define control procedures.

The created model for the above-mentioned research and development steps and concluded mechanisms are presented in Table 1 and can help future works on a similar type of integration. Based on the evidence, the most important issue is the overall understanding of the operational field, that is, domain ontology. A challenging point is the difference between business units and related approaches, in this case, toward data. This challenge can be tackled with strong cooperation and collaborative activities. This needs flexibility, resilience, listening abilities and perception of wider entities than one's own business unit.

In conclusion, the need for integration was obvious. Although the implementation method was not entirely clear, it was concluded and successful. The integration affected the existing ways of working and suggested new ones for tax control across national borders.

From a researcher's viewpoint, some mistakes made during the project have helped find direction in modelling design work. When data were collected and triangulated from various sources, such causalities can be dealt with. A review of the entire data revealed the exact points at which mistakes were made. It is noteworthy that this study exposed certain challenges in this type of work, which otherwise would have remained unnoticed.

How can these problems be avoided? The easiest way is to improve participants' overall understanding of the control area, or pre-operational validation. However, this may be a rather simplified answer given that the field comprises different businesses, information systems, operative developers and actors as well as varying levels of digitalisation. Thus, cooperation seems to be the most vital aspect, particularly when there are several parties, a point highlighted by every interviewee.

The challenges are not restricted to activities in the research and development project. In fact, the organisational environment and existing circumstances can also affect the background agency.

These larger observations are difficult to analyse and there exist certain factor that could affect this project and the integration, for example, lack of resources. Limited resources can affect challenges to organisational capability.

This study emphasises the significance of cooperation and higher participant commitment to understand the facts and learn from experiences of other businesses, which is parallel to a deeper understanding of one's own business. The study found that cooperation, commitment and trust can affect every step in the project and the lifecycle of the development work.

Different organisational units not only collaborate with each other to share knowledge, but also compete with each other to maximise their own benefits. Internally, they vie for the organisation's limited resources. Consequently, they try to outperform other units that offer similar products or services in the market place. Thus, it is reasonable to expect that the effectiveness of coordination mechanisms for knowledge sharing depends on the conditions of competition among organisational units.

As mentioned earlier, this study project is not only about techniques and processes but also cooperation and trust building as well as choices to be evaluated and decisions to be made.

The study offers suggestions for future works. The regulation includes many international and domestic anti-tax fraud motives, such as the Organisation for Economic Co-operation and Development (OECD)

tax compliance model. Research can be furthered in anti-tax fraud work, given the exiting call for actions regarding the shared tax administration.

Another important viewpoint for future research is reorganizing tax control duties by increasing the automation level of control procedures and digitalizing EU recapitulative statement data.

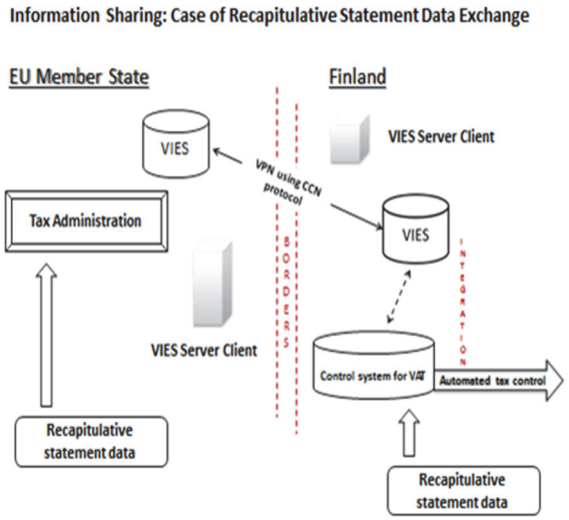

Figure 1: Mechanism of recapitulative statement data exchange.

List of abbreviations used in Figure 1: VAT (Value Added Tax), VIES (VAT Information Exchange System), Recapitulative statement data (Data of business registered for VAT), CCN (Common Communication Network), VPN (Virtual Personal Network).

The term "recapitulative statement data" (in the title of Figure 1) consist of value-added tax (VAT) for businesses registered with the EU member states that provide intra-EU supplies to actors who are obligated to complete recapitulative statements. The statements grade the aggregate value of goods and services supplied to VAT-registered customer elsewhere in the EU.

This study was based on the European Union's Common Information Sharing research theme and research agenda targets related to the public authority in Finland. The target of study is addressed to the information sharing utilisation that foster cross-sectorial and cross-border collaboration among public authorities, the dissemination of the related EU initiative and steps along the EU information sharing roadmap.

REFERENCES

Benbasat, I., Goldstein, D. K., Mead, M., 1987. The case research strategy in studies of information systems. *MIS Quarterly*, 11(3), 369-386.

Campbell, D. T., Fiske, D. W., 1959. Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56, 81-105.

Dubé, L., Paré, G., 2003. Rigor in information systems positivist case research: Current practices, trends, and recommendations. *MIS Quarterly*, 27(4), 597-635.

Gregor, S., 2002. Design theory in information systems. *Australian Journal of Information Systems*, Special Issue, 14-22.

Hevner, A. R., Chatterjee, S., 2010. *Design research in information systems: Theory and practice*. New York: Springer.

March, S. T., Smith, G. F., 1995. Design and natural science research on information technology. *Decision Support Systems*, 15(4), 251-266.

Markus, M. L., Majchrzak, A., Gasser, L., 2002. A design theory for systems that support emergent knowledge processes. *MIS Quarterly*, 26(3), 179-212.

Miles, M. B., Huberman, A. M., 1994. *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks: Sage Publications.

Nunamaker, J. F., Briggs, R. O., 2011. Toward a broader vision for information systems. *ACM Transactions on Management Information Systems*, 2(4), 1-12.

Robson, C., 2002. *Real world research*. Oxford: Blackwell Publishing, 2nd edition.

Yin, R. K., 2009. *Case study research design and methods*. Thousand Oaks: Sage Publications, 4th edition.

APPENDIX

COM (2012) 351 final. Communication from the Commission to the European Parliament and the Council. 2012. On concrete ways to reinforce the fight against tax fraud and tax evasion including in relation to third countries.

COM (2012) 722 final. Communication from the Commission to the European Parliament and the Council. 2012. An action plan to strengthen the fight against tax fraud and tax evasion.

DG TAXUD IT AO-06. 2012. INVITATION TO TENDER TAXUD/2012/AO-06. Annex II. A. http://ec.europa.eu/taxation_customs/resources/documents/common/tenders_grants/tenders/ao-2012-06/annex_2a.pdf (Accessed: 7 August 2013).

EUR Lex. 2008 Access to European Union law and related documents. http://eur-lex.europa.eu/homepage.html (Accessed: 5 October 2015).