IMPLEMENTATION OF EGOVERNMENTAL SERVICES FOR CITIZENS IN SWITZERLAND:

THE CASE OF ELECTRONIC INCOME TAX SYSTEMS

–

A COMPARISON OF THE TWO SWISS CANTONS

VALAIS AND ZURICH (CASE STUDIES)

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DATE OF SUBMISSION: December 2, 2012
Abstract
Most citizens of Switzerland have to fill in every year their income tax statement. For reasons of efficiency, eTax solutions for the income tax have been developed. The solutions offered by the cantons highly vary. The aim of the seminar paper is to give an overview of the development and the current stage of electronic income tax solutions of the cantons of Valais and Zurich. In order to classify the sophistication of the eTax solutions, a framework is developed. In addition, a functionality analysis is provided to compare the two solutions from the perspective of usability.

Keywords: Classification of Electronic Income Tax Solutions, Online Tax Services, Zurich, Valais
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2. List of abbreviations (after eGovernment Strategy Switzerland)

*ETMS*
Electronic tax management system

*Government to Citizen A2C / G2C*
The electronic interaction between citizens and government.

*Government to Business A2B / G2B*
The electronic business relationship between the administration and the economy.

*Government to Government A2A / G2G*
State cross-border cooperation.
3. Introduction

3.1 Background and Motivation of the Thesis

Today's on-going trend from offline to online processing naturally leads to a shift towards electronic services. Customers’ expectations regarding the availability and quality of online services continuously increase according to the speed of the technical development. As the trend no longer applies for companies in a competitive market environment only, also national governments are facing the advanced demand.

While in the private sector the integration of online communication channels has become almost standard, for about five years, enhanced service orientation especially with regard to electronic servicing has increasingly spilt over to public management. Hence, a new dimension of public thinking formats itself by adopting a different point of view. Rather than being addressed as an anonymous mass of task initiators, citizens are now more and more seen as a heterogeneous target group – whose needs are not limited to offline processing only, but who instead increasingly demand for online services. Public management faces the challenge of a society that increasingly is used to the interaction via web as a quick and lean alternative to physical processing.

Citizens’ request for electronic and hence, time and location independent availability of services are subject of local and national eGovernment strategies, also in Switzerland. Different development stages can be identified. In a first phase the goal for public authorities was to have an own website and to make basic information and forms available via the Internet. Today, as egovernmental services are further developed, the degree of interaction between public and government is more and more enhanced. This implies, accordingly, the adoption of a less static view. Communication with the target group needs to be designed increasingly seamless. From a rather visionary point of view, at a later stage the development might turn into a new form of collaborative working between public governments and their citizens.

This idea will not be object of this seminar thesis. Instead, the differentiation between diverse stages of this progression serve as a basis in order to find out, how the current status of eServices in different Swiss Cantons can be classified and thus, compared with each other. This will happen on the basis of the example of electronic income tax services. The aim of the Seminar Thesis is to address the topic on the basis of the Case Studies of two Swiss cantons.
3.2 Problem Statement and Research Questions

3.2.1 Income tax as one out of six tax-related eServices

“Tendencies for providing public services electronically are rapidly spreading in the European Union countries as in the entire world.” (Özgen 2012, 2) Since the early years, the European Union has assessed a strong focus to what extent egovernmental services were available (EU 2011, 28). For this purpose a benchmarking framework has been developed to describe the progress that has been made in implementing and providing public services online. Within this framework the EU defined 20 basic service domains that were selected as a fair representation of governmental services in the EU27+ countries (including Switzerland). Therefrom, the following 12 are aimed at citizens (and other 8 at businesses):

<table>
<thead>
<tr>
<th>Public Services for Citizens</th>
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<tbody>
<tr>
<td>1. Income taxes: declaration, notification of assessment</td>
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<tr>
<td>2. Job search services by labour offices</td>
</tr>
<tr>
<td>3. Social security contributions:</td>
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<tr>
<td>- Unemployment benefits</td>
</tr>
<tr>
<td>- Child allowances - Medical costs (reimbursement or direct settlement)</td>
</tr>
<tr>
<td>- Student grants</td>
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<tr>
<td>4. Personal documents (passport and driving license)</td>
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<tr>
<td>5. Car registration (new, used and imported cars)</td>
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<td>6. Application for building permission</td>
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<tr>
<td>7. Declaration to the police (e.g. in case of theft)</td>
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<tr>
<td>8. Public libraries (availability of catalogues, search tools)</td>
</tr>
<tr>
<td>9. Certificates (birth, marriage): request and delivery</td>
</tr>
<tr>
<td>10. Enrollment in higher education / university</td>
</tr>
<tr>
<td>11. Announcement of moving (change of address)</td>
</tr>
<tr>
<td>12. Health related services (e.g. interactive advice on the availability of services in different hospitals; appointments for hospitals)</td>
</tr>
</tbody>
</table>

Graph 1: Public Services for Citizens by the EU program

Those public services are increasingly provided electronically, but obviously not all countries have reached the same level. Indeed, in its benchmark measurement of 2010 the European Commission states: “Europe has made substantial advancement regarding the implementation of 20 [egovernmental] basic services.” (EU 2010) However, essential differences regarding the maturity of online service performance between EU27+ states still exist. The study’s title “Digitizing Public Services in Europe: Putting ambition into action” points out that reality and ambition often do not yet meet.

3.2.2. EU Benchmarking

How does the situation look like in Switzerland, which has been ranked as number 4 out of all EU27+ countries? Interestingly, in the area of egovernment, Switzerland is in the European comparison slightly below the EU average. At first sight this fact is be surprising.
However, there are different reasons that account for this difference. The case of Switzerland is insofar more complex because Switzerland has a federalistic system. Indeed, the main reason for Switzerland’s rating position lies in the varying degrees of development of electronic services in the different cantons. As some political power has been delegated to the cantons, egovernmental services might be put into practice to a different extend, also on a regional level. Citizens often personally experience this diversity particularly when moving to another canton. However, compared to previous years, significant improvements have been made with regard to that matter.

The specific online service that this Seminar Thesis focuses on is eTax, which “aims to provide enhanced service quality and administrative efficiency of the tax agency and greatly reduce compliance and filing costs for taxpayers, thus creating benefits for both the citizens and the government” (Jen-Hwa Hu et al. 2008). The tax system serves as a striking example to illustrate Switzerland’s heterogeneity. Tax rates (with the exception of the federal tax) and collection is in the authority of the cantons. Thus, Switzerland has 26 different tax systems. Due to that fact and because collection is not organised centrally, there exist 26 different income declaration forms. Out of the 12 public services according to the EU classification, six have been identified as tax-related. It can be differed between income tax, corporate tax, value-added tax (VAT), custom declarations, social security benefits, and social contribution for employees.

Due to reasons of restricted capacities, only the first category “income tax” is in scope for this paper and the following case studies. It seems logical that also the level of eService for income taxes is not developed to the same extent in each canton. To sum up briefly, in the following paper the egovernmental service of income tax processing for citizens will be core. Differences will be explored between Valais and Zurich on a cantonal level on the basis of the conduction of two Case studies.

The following research questions will be answered in the following seminar paper:

1.) How was the eServices income tax developed in the two cantons?
   a. Why do some cantons offer more sophisticated eServices for income tax than other cantons do? → elaborative
   b. Why have some cantons started earlier than others with the implementation of this eService? → elaborative
   c. What are the factors that prompted them to do so? → elaborative
   d. To what extend do citizens use the service today? → descriptive
   e. How have user figures developed? → descriptive
2.) To what extend has the eService income tax been developed in the canton of Valais and the canton of Zurich? → Description of status quo will be provided on the basis of a self-constructed functionality analysis per Canton.

3.3 Objectives and Output of the Thesis

The authors’ target is to provide an overview of the current state and the most important influencing internal factors regarding the implementation process of eServices income tax. This will be achieved on the basis of two Case Studies. In order to address both research questions, two Swiss Cantons, which both established an eTax System for their citizens but currently are at a different point with regard to the Reifegradmodell, will be analysed. They serve as practical examples in order to illustrate the highly diverge situation of local e-Government that can be observed in a federalistic country such as Switzerland, also regarding eTax strategies.

Besides a status quo analysis, a historical review of the implementation process of eTax tools, with special regard to internal push factors and barriers, will be given. Further, a short outlook based on each Canton’s individual eGovernment strategy approach will be provided. The results for the Canton of Valais’ will be compared to the Canton of Zurich’s perspective.

This paper is interesting for politicians and the administration of each canton. It will give them an overview of how the eService income tax is developed in the Canton of Valais and Zurich.

A short introduction on eServices for citizens and the benchmarking of the EU. Further, the Reifegradmodell of Meier (2012) will be explained. In the subsequent case studies the level of development for the eService tax and the user statistics will be analysed. In order to measure the development of the eService income tax a functionality analysis with regard to usability will be conducted. In addition, based on several author’s theory, an own Reifegradmodell will be conducted to illustrate and further differentiate specific differences regarding electronic income tax services. With regard to the question of how and when the eService was introduced expert interviews will serve as source of insights besides official information provided online. Finally, a conclusive comparison of the two cantons with regard to eTax will be given.
4. Theoretical Background

4.1 eServices for Citizens (A2C) as part of eGovernment

The term electronic government or government refers to the simplification and implementation of information, communication and exchange processing within and between governmental institutions as well as between administrative units and the citizens resp. firms and organizations. (Meier 2012, 4)

Graph 2: Concept of eGovernment (Meier 2012)

The graph above visualizes the three existing options regarding information, communication and exchange processing in between the three main stakeholders 1) administration (A), 2) citizens (C), and 3) firms (B, businesses). Hence, the following ones are understood as main exchange options eGovernment:

Graph 3: Main exchange options of eGovernment (own illustration adapted from Meier 2012, 5)

In the following the second exchange option will be of interest. The reason for that is founded in this papers’ scope, which is defined the aim explained in the introductionary part to evaluate eTax systems for private income taxes.
Online solutions, can offer a high value-added. It is not only that citizens’ needs can be served quicker – sometimes even at the pace of him/herself (EU 2011). In addition, they provide governments with the possibility of tailoring the outcome to the specific needs of the final “customer” (EU 2011, 28).

The value-added of eServicing is not limited to a citizen’s perspective. Quite the contrary is the case, as eServices do not only provide the opportunity to meet public’s needs faster, but also with less additional effort. Governments, with regard to their internal operations, can highly benefit from faster and more efficient processing via online channels. Hence, time saving and cost advantages (EU 2011) are counted among the main reasons to process services via online channels. The latter in particular is a crucial factor in today’s times of budgetary constraints. Thus, governments, which are mostly characterized by high bureaucratic efforts that have to be accomplished, can benefit essentially from the gains of increasing online execution. According to the EU (2011, 28) it often has been stated that online channels, phone channels and paper channels have a cost ratio of 1:10:100 respectively. Hence, to sum up in casual words one can say that “offering services online to citizens and businesses is a crucial ingredient to making services ‘twice as good, in half the time, for half as much’.” (EU 2011, 28)

4.2 Electronic tax management systems

Governments establish special electronic and technological infrastructures and systems in order to provide eTax services. Specific platforms and systems and though, their names, vary across different countries. Even country-internally different systems are used. This applies especially to the Swiss case where many cantons follow an individual strategy. Consequently, out of a theoretical perspective and to simplify matters, the sum of these systems may be called “electronic tax management system (ETMS)”. In his analysis of “e-Tax Management Systems in the European Countries” the author (Özgen (2012) differs between two sub-systems in order to provide eTax services: An eTax filing system (ETFS) on one hand and one serving as an e-tax payment system (ETPS) on the other hand. While some countries implement one ETMS only, others such as for instance the USA set up two separate ones. In the following paper, this differentiation will be adopted.

Graph 4: Differentiation of electronic tax management / processing (own illustration)
4.3 Reifegradmodell as the applicable framework

4.3.1 Maturity model of Meier (2012)
A useful framework for the benchmarking of eServices is Meier’s maturity model. It features five stages. The first stage is Information. At that point the website contains only information. The next level, one-way interaction means that forms or other files can be downloaded. Two-way interaction includes the feature that forms that have been filled in can be sent back to the government. This is an important feature of eTax systems. The more developed stage, process management, also includes further process steps like payment that can be done online. Finally, the most mature stage personalisation means the government services can be personalised according to the citizen’s needs. (Meier, eDemocracy & eGovernment: Stages of a Democratic Knowledge Society, 72)

![Graph 5: Maturity model and benchmark for government services (Meier 2012)](image)

For a comparison of the maturity of the eTax systems of two Swiss cantons, this framework is very useful for a first classification. In order to describe and compare the maturity stages in more depth, a more refined framework is needed.

4.3.2 Classification of Electronic Tax Services (Özgen 2011)
Özgen (2011) proposes an alternative framework explicitly for the classification of eTax services. According to his article the framework answers the two questions “To what degree are e-tax services provided electronically in the European countries?” and “Which other stages require progress in this field?” This framework, which is based on the classification of other authors, is a useful starting point for the case study.
It proposes the following classification:
Table 1: Classification of Electronic Tax Services (excerpt from Özgen 2011, details see Appendix)

The related Service Characteristics in the appendix indicate that the framework covers a broad range of tax aspect including income tax, social security payments and scholarships only to mention a few. Thus, Özgen's classification is appropriate for the classification of eTax in general. However, for a classification of the income tax for citizens and from the perspective of citizens (not from the government's perspective) this framework is not appropriate for several reasons. First, the two cases that are analysed in this paper only qualify for the first (information services) and the second stage (interactive communication services). As a result, stages three to five will not be taken into consideration. In addition, stage four (integrated eTax Services) and stage five (participatory eTax Services) are not in the scope of this paper.

Thus, for a classification of the eTax service income tax only the first two stages will be considered. In order to work out the difference between the two cantons in more detail, we introduce our own elIncome Tax Reifegradmodell. Finally, a functionality analysis of the two cantons' eTax solutions for income tax under the light of usability (communication, ease of use and security) is done.

### 4.3.3 Proposition of a new elIncome Tax Reifegradmodell

This framework differentiates several dimensions: the filing (physical forms / eForms), the location of the program (local on hard disc / central on a server), additional documents and signed acknowledgement (by mail / online) and payments (not online / online).
4.3.4 Functionality analysis of usability features

In our view, another interesting and complementary framework could be the following functionality analysis. The dimensions are always looked at from a usability view. The four following categories are can be discriminated: Confidentiality, ease of use, communication, and accessibility. The list with 16 items is not exclusive.

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Dimension</th>
<th>Y/N</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 REGISTRATION</td>
<td>Confidentiality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 LOG-IN WITH STRONG AUTHENTICATION</td>
<td>Confidentiality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 ACCESS VIA PERSONAL CODE (PHYSICALLY PRINTED ON TAX FORM)</td>
<td>Confidentiality</td>
<td></td>
<td></td>
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<tr>
<td>4 EXPLANATORY SECURITY GUIDELINES</td>
<td>Confidentiality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 AVAILABILITY OF FORMER TAX YEAR DATA</td>
<td>Ease of use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 CLOSURE / APPROVAL OF TAX DATA</td>
<td>Confidentiality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 PHYSICAL NOTIFICATION BILLS AND RECEIPTS</td>
<td>Confidentiality</td>
<td></td>
<td></td>
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<tr>
<td>8 ADD. LANGUAGE (BESIDE OFFICIAL CANTONAL L.)</td>
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<tr>
<td>9 TECHNICAL SPECIAL FEATURES</td>
<td>Ease of use</td>
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<tr>
<td>10 LOGICAL STRUCTURE BASED ON FORMER SOFTWARE</td>
<td>Ease of use</td>
<td></td>
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<tr>
<td>11 AVAILABILITY OF A DEMOVERSION</td>
<td>Ease of use</td>
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<tr>
<td>12 AVAILABILITY OF A VIRTUAL ASSISTANT</td>
<td>Ease of use</td>
<td></td>
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<tr>
<td>13 CONTACT ADDRESS FOR ADD. SUPPORT</td>
<td>Communication</td>
<td></td>
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<tr>
<td>14 ADD. SERVICE DURING IMPLEMENTATION PHASE</td>
<td>Communication</td>
<td></td>
<td></td>
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<tr>
<td>15 AVAILABILITY OF Q &amp; A (MOST FREQUENT Q)</td>
<td>Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 USABILITY FOR DISABLED PERSONS*</td>
<td>Accessibility</td>
<td></td>
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* Based e.g. on the "No citizen left behind" policy of the EU (2011, p.29)
5. Application: Switzerland

5.1 eGovernment Strategy Switzerland (after efd.admin.ch)
The Framework Agreement on eGovernment Strategy Switzerland regulates cooperation between the Confederation and the cantons in the area of eGovernment. Target is a common strategy for federal, cantonal and municipal level. Between the cantonal administration and the municipalities, there is currently no formal cooperation agreement. Especially small communities rely on cooperative solutions for resource reasons, so that they can use the information and communication technology to good use. Cooperation with and between the cities and communities is therefore to promote and regulate properly (Agreement Act). Objective of the scheme is the implementation of the national eGovernment strategy, in particular with regard to the promotion of interoperability of IT systems and the communities of Canton, as well as the joint development of eGovernment infrastructure.

In 2007 the Federal Council adopted eGovernment Strategy Switzerland aims economy and population to profit from better services and more efficient government. The strategy has been developed in cooperation with representatives of all three federal levels under the auspices of the Federal Strategy Unit for computer science (ISB).

Cooperation between federal and cantonal is governed by a framework agreement by 2011. The Framework Agreement for the years 2012-2015 is to strengthen the cooperation between the federal levels. Twelve cantons based its strategy completely or to a big extend on the eGovernment Strategy Switzerland, among them the Canton of Zurich.

5.2 Switzerland’s Tax System (after estv.ch)
The Swiss Tax system has grown historically and mirrors the federal structure of Switzerland. Each and every of the 26 cantons of Switzerland has tax laws of its own and therefore taxes income, wealth, capital gains and other tax issues differently. Within the cantons, the almost 2’600 municipalities have the right to either collect municipal taxes according to the cantonal rates or even decide on a mark-up to the cantonal rate. Finally, there is the federal tax law in place to tax income. However, the majority of the federal taxes stem from other sources as the Value Added Tax, stamp taxes, tariffs and other consumption taxes. To sum up, taxes in Switzerland are imposed on three different levels: the federal state, the cantons and the municipalities.

The right for municipalities to impose taxes is limited by the constitution. Some of the taxes may be imposed only by the federal state and not by the cantons. The constitution defines which taxes may be imposed by the state. On the other hand, the cantons are free to impose taxes as long as these are not forbidden by the constitution.

For the cantons and the municipalities the major source of taxes originates from the income taxes and wealth taxes for natural people and from the profit and capital taxes for corporate
bodies. For the year 2008 these taxes contributed for 89.7% of all taxes for cantons and municipalities.

5.3 eTax in Switzerland
While in many benchmarked countries the delivery of public services remains strongly centralised, Switzerland’s service delivery is “rather decentralised” (EU 2011, 61). Especially with regard to the income tax servicing Switzerland is, together with Germany, the only decentrally organized country among the benchmarked EU27+.

The study, "E-Government and people" from the fall 2011 shows that, the general public wishes the biggest electronic support for tax filing and tax payment, which are, besides voting, the most common government business (efd.admin.ch).
According to the EU benchmarking, from a cross-national perspective electronic income tax services for citizens in Switzerland can generally be stated as rather sophisticated (EU 2011, 62).

6. Case Studies

6.1 Case Study I: eTax in the Canton of Valais – The VSTax Solution
In this first Case Study the eTax solution offered by the canton of Valais is analysed. First, a short overview about the development since 2003 is given. Then, the current solution is classified. Third, the user statistics are commented. Finally, an outlook of the further development is given. Due to the restricted information available via official channels the following text is based on several interviews with Mr. Daniel Köppel, responsible for the eTax solution of the canton of Valais.

6.1.1 Development from 2003 to 2012
The canton of Valais was comparatively late in offering an eTax solution. The political decision to offer an eTax solution for the income tax was taken in 2003. In the tax period 2004 citizens were able to use eTax filing for the first time. The reasons why the canton decided to offer such a solution were manifold. First, the government of realised that in the national e-government ranking the canton of Valais was among the lower ranked cantons. In addition, some politicians saw a chance to distinguish themselves with such a software solution. Finally, the government wanted improve their ranking and the issued an invitation to tender for the VSTax project in 2003. Different companies offered their solution. Amongst others, one major decision criteria was the price. This was also the reason why the offer from the national supplier Dr. Tax was not accepted. Finally, the mandate was given to the
company RedIT (which was later acquired by Abraxas Informatik AG – today called Abraxas). It is important to mention however, that the canton of Valais publishes all the interfaces and all the necessary tax system information. This means that other competitions can also offer an independent e-filing software solution. Yet, a certification from the canton is needed every year.

The VSTax program could be used in the tax period 2004 for the first time. Technically, the solution could have been introduced already in 2003. The reason why it was not introduced then was that the canton of Valais only changed its 2-years tax period system to a one-year tax period system (Gegenwartsbesteuerung) in 2004. Other cantons introduced the Gegenwartsbesteuerung earlier. In supplying the software, the canton of Valais was a pioneer. For reasons of efficiency, Valais was to first canton to offer the software as download only. With this option the government was able to reduce costs and administration. For people who did not trust downloads or did not have Internet access, a CD was available on special request. This was only done in very few cases. An employee of the tax authority burnt the CD.

Every year, the software was updated with the actual tax laws. There have not been major changes in layout or functionality in the following years. The tax subjects could use the VSTax program to file in the tax declaration. Then, a form had to be printed with a 2D barcode that had to be sent to the tax authorities. This barcode, which has to be scanned for further processing, contains all necessary information. After scanning, all further processing can be done electronically, which is an immense efficiency gain for the tax authorities. A positive feature from the citizen's perspective is the option to load the data from the previous year's declaration. As many people's tax situation does not change substantially, only slight alterations have to be made. A prerequisite for this feature is that the last year's tax declaration has been saved on one's personal computer.

A major innovation came for the tax period 2010. From the onwards, citizens could - after having filled in the tax forms in the program - send the tax declaration to the tax authority online. It was not necessary anymore to print all the forms and then send them by mail. However, there is still an acknowledgement that has to be signed by the citizen and then send to the government by mail.

6.1.2 Situation today

The system used today can be classified as stage 2a of the Reifegradmodel proposed. The program has to be installed on a local hard disc, the tax declaration can be sent online, the receipts and the acknowledgement still have to be send by mail and it is not yet possible to pay the taxes online (E-payment). The different eFiling solutions (VSTax, DrTax, ImpôtVS, Dessimoz) are used today (2012) by 72% of the tax subjects. The solution implemented
today is very user-friendly and well received as the user statistics show. Other cantons try to motivate more citizens to use the eTax solution by offering online video tutorials. The canton of Valais has an online tutorial but not a video tutorial. Such special features certainly are question of budget. Looking at the already high percentage of users, it is questionable whether further investments in e.g. video make sense.

6.1.3 User statistics

Looking at the high percentage of users the question of why the eTax solution had such a great success. First, the electronic filing of the tax declaration means a great time reduction. As the data from the previous year's declaration can be used, only small changes have to be made. In addition, the VSTax program is free of charge for all systems (Mac, Linux and PC). Another success factor was the distribution channel (free download). As more and more citizens had broadband Internet access, more citizens could conveniently download the program. On the other hand, there were also barriers. In the beginning not all citizen could (no Internet access) or wanted to download the program. As already mentioned, upon request a copy of the program on CD was sent. Finally, to a certain extent, there are still a number of citizens who have little or not IT knowledge at all.

In order to understand the user statistics, first a short explanation: electronically filed tax declaration means programs used by all suppliers of the canton of Valais: VSTax, DrTax, ImpôtVS, Dessimoz. The user percentage refers to successfully imported data.

It has to be mentioned that the number of tax subjects has increased (average of 4500 new tax subjects per year). In addition, the VSTax program is only offered for residential and foreigners having the B permit. Since 2005 certifications were given to external suppliers with the result that user numbers of VSTax have declined. However, in absolute figures there has a yearly rise because the VSTax program is free. This is not the case for the other programs. Thus, the market share of ImpôtVS and Dessimoz is declining. DrTax's share remains between 15 and 20%. The program is mostly used by fiduciaries.

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<thead>
<tr>
<th>Year</th>
<th>Total Tax declarations with 2D barcode (e-tax)</th>
<th>Percentage of all tax declarations</th>
<th>Share VSTax for declarations with 2D barcode</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>11’000</td>
<td>~ 6.7 %</td>
<td>100 %</td>
</tr>
<tr>
<td>2005</td>
<td>47’000</td>
<td>~ 29 %</td>
<td>84 %</td>
</tr>
<tr>
<td>2006</td>
<td>80’600</td>
<td>~ 49 %</td>
<td>65 %</td>
</tr>
<tr>
<td>2007</td>
<td>89’200</td>
<td>~ 56 %</td>
<td>65 %</td>
</tr>
<tr>
<td>2008</td>
<td>96’000</td>
<td>~ 58 %</td>
<td>68%</td>
</tr>
<tr>
<td>Year</td>
<td>Tax Declaration</td>
<td>Online (%)</td>
<td>Total (%)</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------</td>
<td>------------</td>
<td>-----------</td>
</tr>
<tr>
<td>2009</td>
<td>113,000</td>
<td>~66%</td>
<td>68%</td>
</tr>
<tr>
<td>2010</td>
<td>112,400</td>
<td>~64%</td>
<td>81% (by mail 61%, by internet 20%)</td>
</tr>
<tr>
<td>2011</td>
<td>119,000 (October 2012)</td>
<td>~73%</td>
<td>78% (by mail 50%, by internet 28%)</td>
</tr>
</tbody>
</table>

*Table 4: User Statistics Canton of Valais*

The percentage of VSTax users that sends the tax declaration by internet is constantly growing. On the other hand, 15 to 20% are still filing in the declaration by hand. It seems that this does not change.

### 6.1.4 Outlook until 2015

From the tax period 2012 onwards, it will be possible to scan receipts. The files will be zipped and send encrypted via SSL to the tax authorities. By the year 2014, citizens of all Valais municipalities should be able to do the filing of the tax declaration completely online. As a result, the VSTax program has not to be downloaded and installed anymore. By 2015 a complete online solution will be implemented. However, a download solution will still be offered. It is also planned that user do not have to send a signed acknowledgement if they have a Swiss ID online signature.

### 6.1.5 Conclusion VS

The canton of Valais offers a very practical solution for the income tax declaration for their citizens. The program VSTax, which can be downloaded for free, is easy to use. In terms of distribution (download only) the canton was a pioneer. The user statistics indicate that the program and the distribution are well received. It also seems that the citizen trust the IT security of the canton as the percentage of users handing in the declaration online is constantly rising. Other cantons have already introduced a full online income tax declaration while the solution offered by the canton of Valais is only partly an online solution. The size of the canton and the financial means might be factors that have prevented the canton of Valais of offering a full online solution earlier.
6.2 Case Study II - eTax in the Canton of Zurich – The “ZH private Tax” platform

6.2.1 The eGovernment Strategy of the Canton of Zurich
In order to illustrate the current situation regarding the implementation of egovernmental services and underlining the role of online income tax processing for Zurich’s citizens, it is first of all important to understand how the strategic background has been set up. Further, referring to the highly complex environmental factors that are essential for the successful conduction of egovernmental projects, the case of the Canton of Zurich serves as a good example to illustrate how the collaborative interaction between municipalities, the canton and the federal government can happen (a.o.).

6.2.1.1 Strategic objectives
The government council of Zurich (dt. "Regierungsrat") was responsible for defining the eGovernment strategy of the Canton of Zurich for the years 2008 until 2012. It defines the ambitious goal to become and stay the leading State in E-Government in national comparison. In the corresponding official paper the strategic objective is set to increasingly handle the “Official correspondence with the population” via online solutions (a.o.). Accordingly, as the online processing of income tax for citizens represents an aspect this of objective, the political support can be seen as an important push factor for the project “ZH private tax”.

6.2.1.2 Organization
The implementation of the E-Government strategy in the cantonal administration departments is an ongoing process and will last many years more. 600 online offerings are planned, among them around 10% as fully electronic solutions. More than 100 projects have been started between 2008 and 2012, whereof around 50% completed. The responsible units implement and maintain the electronic offerings. In case of “ZH private tax” this is the Cantonal Tax Office. They are supported by cross-departmental committees such as the Cantonal IT Team (KITT) as well as by the staff office for eGovernment (a.o.). Official decisions are taken via the proper administrative channels (e.g. Government decision with “Mitberichtsverfahren”).

6.2.1.3 Budgeting and financing
eGovernment projects are generally budgeted by the charge of public power and the state chancellery as well as the finance directorates. “The Office of e-Government usually funded administrative cross-border projects, but can also contribute to the cost for the financing of services of the administrative units.” (egovernmental strategy of the Canton of Zurich, 2008)
6.2.1.4 Collaboration on all levels

Especially with regard to critical services basic collaboration is crucial. Overall egovernmental projects that are of cross-regional interest should be considered jointly. This especially applies to a federalistic country such as Switzerland. The following sections will briefly illustrate how the Canton of Zurich is embedded in a strategic network with the aim to enhance efficiency and create synergies due to joint efforts, especially with regard to the technical side of egovernmental project implementation.

On a national basis the Canton of Zurich fulfils its tasks in accordance with the framework agreement on eGovernment cooperation between the Confederation and the cantons, has a seat on the Steering Committee for the implementation of Swiss eGovernment strategy and is a member of the eGovernment standardization organization eCH, an association developing and recommending egovernmental countrywide standards and whose institutions, representatives of the cantonal administration are involved. In order to collaborate with other Cantons – regarding eGovernmental projects a.o. – the Zurich actively participates in coordinating committees in order to represent the Canton’s interests in egovernmental context among them the Conference of Cantonal Governments (KdK), State Directors’ Conference (dt.: „Staatschreiberkonferenz“) and the work group “E-Government Monday”, the informal platform of the cantonal eGovernment representatives.

Further, with regard to alignment with the municipalities and the City of Zurich, the legislative goals of the Executive Council are to be considered concerning the promotion of new forms of cooperation among the communities and the existing institutions.

In addition, a collaboration with private parties is possible in order to enhance and further develop egovernmental services. Arguments for such a Public Private Partnership (PPP), might lie in financial advantages, risk reduction or resource bundling advantages or the provision of supplementary expertise.

6.2.2 The eTax solution of the Canton of Zurich – the “ZH private Tax”

6.2.2.1 Initial situation

Even today, around 60 percent of the canton of Zurich’s population use software “private tax” on the computer in order to fill out their annual income tax declaration. This online solution via a program download results in significant relief for taxpayers, because many entries are made automatically. However, the forms still need to be printed and submitted to the tax office physically. This is why a webbased online solution for income tax needed to be built-on. With the electronic tax return the postal delivery will no longer not be necessary as the
tax forms will be sent to the Cantonal Tax Office directly online. Only bills and receipts and the enabling acknowledgment (dt. “Freigabequittung”) still have to be handed in by post.

6.2.2.2 About the Project “ZH private Tax“

The project of the electronic tax return is an important milestone of the cantonal eGovernment strategy and represents a legislative objective of the Government Council. The Executive Council has spoken return a total of 10.6 million Swiss francs for the new electronic tax solution. Project has been approved on 28 October 2009. It makes part of the “Züri-Primo”, a program of several years, which’s aim is to substantially rebuild the computer science of the cantonal tax office and aligning it with the municipalities.

The project was characterized by a very complex background. One of the reasons therfore is the the high number all stakeholders to be involved, namely the Tax Office, State Chamber, pilot municipalities, software developers, tax representative (ZKB, trustees), and Scan Center (a.o.). Following strategic objectives are targeted by the new online solution:

• Step by step displacement of the “Private Tax” software, and accordingly provoking a downwards trend for the need for CD-ROMs and downloads. Eventually the trend may finally result in an entire replacement of the former solution.
• Client capability for tax representative (trustee)
• High data security to be ensured
• High demands for networking with IT systems in the tax office and for communities or trustees

6.2.2.3 The pilot project

The pilot phase took place this year from beginning of 2012 to middle of the year in seven communities. For about 40% of the Canton’s public in Zürich, Winterthur, Uster, Dietikon, Wädenswil, Embrach und Langnau am Albis it was possible for the first time to fill in their tax declaration for 2011 online directly send electronically to the Cantonal Tax Office.

The pilot project’s aim for the cantonal tax office is to gain experience and find out where improvements are still possible. The public is asked to provide feedback – to push the participation a competition has been announced.

At a later stage, the web-based solution will generally be available for all natural persons (dependent and self-employed).

6.2.2.4 Use of the „ZH private Tax“ solution

First, the creation of an account on the cantonal eGovernment platform ZHservices is necessary. Subsequently, the taxpayer can sign up using strong authentication and fill in the tax return online. Enhanced usability is one of the major assets of the new online tax
solution. The filling is possible with the familiar form-view similar to Private Tax 2010th. New is also a wizard, which will walk you through the forms and thus facilitates filling in tax returns. Importing data from the previous year's Private Tax 2010 is possible to start filling in the tax return. In the long run, data will be transferable directly from via the ZH private Tax itself. The online data collection is completed with the creation of the enabling acknowledgment. Only when this has been received by the tax office and recorded electronically, the data for the tax offices will cost.

Graph 6: Overview of the ZHprivateTax Platform

6.2.2.5 Benefits of the new solution

Higher accessibility: Access is location-independent and available at all time.

Easy to use: The tax return runs in the Web browser, which allows the installation of software on the computer is no longer necessary. Besides, filling is supported by a support function that guides the taxpayer through the forms. Thus, the time required for completing the tax return could be reduced. The release of receipt and all supplements that are newly listed automatically on a separate sheet to the tax return must be sent by mail to the Tax Office. The tax return form, which citizens receive by the local tax office obtained must no longer be submitted. Previous data can be imported from existing software Private Tax (at a later stage they will be available online).

Security: The online data collection is safe. The data protection officer of the Canton of Zurich was called in the solution development. Registration takes place with a strong authentication by SuisseID or mTAN procedure (code on the mobile phone), as in Internet banking. The user account created on the cantonal eGovernment portal ZHservices can be reused for the application during the next few years. In addition, the separate tax returns are processed only after first entering a personal access code, which has been sent out by post.
6.2.2.6 Deep Dive: Costs and financing

eGovernment provides and implies the implementation of an additional channel for public in order to operate the official traffic. In the middle and short term this set-up naturally causes high supplementary costs, especially though as initially investment in the basic IT infrastructure is needed. Once these basics for egovernmental services are available, new electronic offers are made easier and cheaper. In the Canton of Zurich's case, the “ZH services transactional platform” was the crucial precondition in order to implement the eTax online solution and additionally, to generally further develop the cantonal egovernmental service offering not only regarding eTax services.

![Graph 5: eGovernmental platform „ZH services“ and its services](image)

The technical dependency is one of the reasons why the transformation to an online tax solution did not take place earlier than 2012 after a long cost and time intensive project phase. In order to avoid redundancies, the Canton of Zurich defines binding requirements regarding the implementation of such a project, aiming to enhance service provision. The following principles need to be fulfilled as they stand for the provision of comprehensive solutions, exploiting cost savings: Process Optimization, collaborations, multiple use, use of the central infrastructure, standard products, interoperability.

What does enhancement of the internal processing efficiency mean with regard to the personal resources? “We don’t think that there will be a reduction of staff”, says Dr. Keller. In the middle and long turn the Internet based solution will certainly increase the administration’s efficiency. The number of forms that have to be scanned is decreasing – as a consequence, the manual work for the administration also decreases.

Yet, the tasks will not be less, but different, especially during the introduction of the web based tax declaration. In that introduction phase the initial effort is immense, Dr. Keller points out. The additional work since the beginning of the pilot project with regard to the implementation and the consultancy is enormous. “We were aware of this extra work that would be needed and decided consciously to take it. Especially the additional work due to
our broad range of support services – the users can to contact by an online form or by a Service hotline (even over the weekend), was a strategic decision.” It is in our interest that the citizens file their tax declarations using the web-based solution. Our goal is to push usage by supporting taxpayers and facilitating matters as much as possible. Insofar the additional services offered are an important investment. In the long run the resources used in this project will be allocated to other new projects in the field of ePublic Services.

6.2.2.7 Deep Dive: Security matters regarding data protection for “ZH private Tax”

In relation to the subject matter of „Quality assurance on the internet“, Meier (2009, 27) lists data protection among ethical criteria which have to be met. The nation has the duty to ensure that the privacy of its citizens is protected. Particularly associated with webbased tax returns, the aspect of security is a crucial criterion. None more so than from the user’s perspective when it comes to deciding whether to use or to reject a newly offered online solution. It seems rudimentary that the government can offer a sophisticated, secure solution, although it does not suffice as an individual measure. Instead, the right communication can be decisive for a citizen’s subjective sense of security. His attention needs to be drawn to the minor risk of use – with contentful arguments. Accordingly prominent is the indication on the homepage of the department of finance of the Canton of Zurich. It points out that the eSolution has been certified by the data security engineer. Dr. Roger Keller, communications advisor of the department of finance of the Canton of Zurich explains that the technical security doesn’t necessarily match the population’s subjective sense of security. He suspects that the mistrust in regards to online solutions might be greater than with all former software offers. The cutover to the new solution, although it seems faster and simpler, is not self-evident. „One cannot rule out the possibility that, in the beginning, especially citizens with a lack of computer-literacy will be more sceptical towards the new online solution „ZH private tax”. I can imagine that tax-software, which can be downloaded to a local harddrive and saved locally, might convey a stronger sense of security. The citizen is sure that his data cannot be accessed under any circumstances while being gathered. Possible changes are not replicable. This might subjectively cause a greater sense of security with users."

Technically, the subjective insecurity is unfounded. In terms of data safety, the new online solution of the Canton of Zurich still completes high security standards. In both cases, the tax office cannot access the data while it is being gathered by the user. In case of the software, the excerpts will be delivered to the tax office by mail. Contrary to the current expectation, even with the new online solution "ZH private tax", the data is not transmitted directly.
6.2.2.8 User statistics
The pilot test with the electronic tax return is met with great interest: About ten percent of taxpayers in the seven communities of the pilot have filed their tax returns electronically. Once the new service has proven a canton-wide implementation in 2013 is nothing to prevent more. 9.7 percent all the people used the opportunity. The highest share was at 12.0 percent in Uster. For the Cantonal tax Office these figures are a clear indicator that the new functional solution is ready for the canton-wide operation.

Interestingly, the participation was larger than during the introduction of PrivateTax start. A total of 17'380 taxpayers have declared their tax data on the e-government platform of the Canton of Zurich. This is considerably more than in 2000, when for the first time to download the tax return software was PrivateTax available, and user rate accounted for 11,674 times (of downloads). In the years after the rate constantly rised, as this graph visualizes:

Graph 7: Development of annual download rate of “Private Tax” software

6.2.2.9 Results of “ZH private Tax” pilot
With the successful implementation and conduction of the pilot project for “ZH private Tax” an important milestone of the cantonal eGovernment strategy completed. Accordingly, the Cantonal Tax Office could successfully achieve the legislative target of the government council to facilitate contact with administrative units and improve online services – at least regarding the etax area. Further, collaboration on all level could successfully be strengthen as the project has been conducted across all departments and with the involvement of all other necessary stakeholders. Hence, the application of the solution will be expanded to the whole canton will take place for 2013.
The cantonal tax office has systematically analyzed the feedback received during the project phase. A problem encountered in the application at the beginning of the previous year's data acquisition in the field of securities has been resolved rather quickly. Otherwise, no significant difficulties, which have hindered the filing of the tax return, occurred. For 2013, on the basis of user feedback the Tax Office takes various improvements. Thus it realizes an improved navigation (change from one form to another). Further, new last year's data can be imported several times.

However, even with an online solution never the entire public can be reached. Thus, for user who prefer using the software "Personal Tax" and hand in their tax declaration in a printed version, or, in the contrary, would like to continue processing to file offline, both channels will still be accessible. The former tax program is still offered as a free download or on demand as a CD-ROM.

6.2.3 Outlook

Eventhough with the web-based solution a big step has been made forward. Still, there is space for further improving income eTax services – up to a level where a fully electronic processing is possible. An additional objective in the medium term must be that inserts can be sent electronically. Further, that tax return can be signed electronically. So far legal basis for eSignatures is not yet given on a national level. Up to that point certificates still need to be handed-in in paperform.

According to the responsibles of the Canton of Zurich following other aspect are thinkable to be in scope for increasing online setting:

- **eBilling**: billing the online account of a citizen
- **eAct of disposal**: delivery of electronic tax decision
- **Citizens account**: state procedures, payments, etc.

6.2.4 Conclusion ZH

Obviously, the Canton of Zurich offers a very sophisticated electronic income tax solution for their citizens. After an intensive preparatory project phase the new webbased “ZH private tax” solution has been implemented this year with minor issues. According to the positive responses, the pilot appealed to the public. Still, choice can be made between the former software-based solution and the new webbased processing – or the offline completion. The new solution offers a wide range of additional features, particularly regarding the usability. Citizens can benefits from e.g. an extended consulting service (service hotline can be called during the weekends even), an eassistant, online video, etc. Hence, the target of the Government Council to facilitate A2C contact could successfully be met for Cantonal Tax Office.
Already in advance Zurich offered a high standard with regard to its egovernmental services. The high involvement of the Canton in this area, which was e.g. reflected by the active participation in committees such as the national level, pushed the possibility to turn the “ZH private tax” into a core focus. Resulting political attention further pushed the project set-up and ensured the necessary monetary resources. Zurich existing IT infrastructure, most important the “ZH services” platform, can be seen as an important success factor.

With the enrollment of “ZH private tax” in 2013 all over the canton the Zurich strengthen its leading position in national ranking and acts as a role model, especially when it comes to the exemplary collaboration on all levels. The Canton’s size and its economic importance for the country may be act as supporting factors.

The size of the canton and the financial means might be factors that have prevented the canton of Valais of offering a full online solution earlier.
6.3 Consolidation

Based on the functionality analysis regarding usability features the outcomes of both case studies are provided. It briefly illustrates the status quo of the actual electronic income tax solution of each Canton.

<table>
<thead>
<tr>
<th>Functionality</th>
<th>Dimension</th>
<th>V</th>
<th>Details VS</th>
<th>ZH</th>
<th>Details ZH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 REGISTRATION</td>
<td>Confidentiality</td>
<td>Y</td>
<td>Online transmission requires password</td>
<td>Y</td>
<td>Personal account to be registered (once)</td>
</tr>
<tr>
<td>2 LOG-IN WITH STRONG AUTHENTICATION</td>
<td>Confidentiality</td>
<td>Y</td>
<td>Online transmission requires password, new via Swiss ID (2014)</td>
<td>Y</td>
<td>Via mTAN (code auf mobile phone) or NEW via SWISS ID</td>
</tr>
<tr>
<td>3 ACCESS VIA PERSONAL CODE (PHYSICALLY PRINTED ON TAX FORM)</td>
<td>Confidentiality</td>
<td>Y</td>
<td>Password printed on tax declaration form</td>
<td>Y</td>
<td>Personal log-in code to be inserted physically printed on tax form</td>
</tr>
<tr>
<td>4 EXPLANATORY SECURITY GUIDELINES</td>
<td>Confidentiality</td>
<td>Y</td>
<td>Before sending the tax declaration online explanation that you need to authenticate yourself via password</td>
<td>Y</td>
<td>Prominenter Hinweis, dass sicher und dass Prüfung vom Datenschutzbeauftragten erfolgte</td>
</tr>
<tr>
<td>5 AVAILABILITY OF FORMER TAX YEAR DATA</td>
<td>Ease of use</td>
<td>Y</td>
<td>Import of former tax year data</td>
<td>Y/N</td>
<td>Today: import of former tax year data, up from 2013 NEW online available</td>
</tr>
<tr>
<td>6 CLOSURE / APPROVAL OF TAX DATA</td>
<td>Confidentiality</td>
<td>Y</td>
<td>Via “Freigabequittung” needs to be print and physically signed</td>
<td>Y</td>
<td>Via “Freigabequittung” needs to be print and physically signed</td>
</tr>
<tr>
<td>7 PHYSICAL NOTIFICATION BILLS AND RECEIPTS</td>
<td></td>
<td>Y</td>
<td>Copies to be sent by post</td>
<td>Y</td>
<td>Copies to be sent by post</td>
</tr>
<tr>
<td>8 ADD. LANGUAGE (BESIDE OFFICIAL CANTONAL L.)</td>
<td></td>
<td>N</td>
<td>German and French only</td>
<td>Y</td>
<td>NEW: short briefing in English.</td>
</tr>
<tr>
<td>9 TECHNICAL SPECIAL FEATURES</td>
<td>Ease of use</td>
<td>Y</td>
<td>Error message if declaration is not complete</td>
<td>Y</td>
<td>Tax receipts to be sent are listed automatically</td>
</tr>
<tr>
<td>10 LOGICAL STRUCTURE BASED ON FORMER SOFTWARE</td>
<td>Ease of use</td>
<td>Y</td>
<td>Same structure as tax software citizens are used to</td>
<td>Y</td>
<td>Same structure as tax software citizens are used to</td>
</tr>
<tr>
<td>11 AVAILABILITY OF A DEMOVERSION</td>
<td>Ease of use</td>
<td>N</td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>12 AVAILABILITY OF A VIRTUAL ASSISTANT</td>
<td>Ease of use</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>13 CONTACT ADRESS FOR ADD. SUPPORT</td>
<td>Communication</td>
<td>Y</td>
<td>Contact address or service hotline (for free, office hours only)</td>
<td>Y</td>
<td>Online form or contact address or service hotline (for free, office hours only)</td>
</tr>
<tr>
<td>14 ADD. SERVICE DURING IMPLEMENTATION PHASE</td>
<td>Communication</td>
<td>_</td>
<td>n.a.</td>
<td>Y</td>
<td>Hotline hours extended to mo-sun, all day</td>
</tr>
<tr>
<td>15 AVAILABILITY OF Q &amp; A (MOST FREQUENT Q)</td>
<td>Communication</td>
<td>Y</td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>16 USABILITY FOR DISABLED PERSONS*</td>
<td>Accessibility</td>
<td>N</td>
<td></td>
<td>Y</td>
<td>Tested by the “Access for all” association</td>
</tr>
<tr>
<td>17 ETAX PAYMENT</td>
<td>Ease of use</td>
<td>N</td>
<td>Not planned short-term</td>
<td>N</td>
<td>Not planned short-term, but nationally in the long-run</td>
</tr>
</tbody>
</table>

Table 5: Functionality analysis regarding usability: eService income tax – status quo per Canton

* Based e.g. on the "No citizen left behind" policy of the EU (2011, p.29)
7. Conclusions

First of all, size matters. The canton of Zurich population is more than three times bigger than the population of the canton of Valais. Tax revenues are accordingly higher in the canton of Zurich compared to Valais. The higher financial means are also reflected in the maturity stage of the eIncome tax declaration solution. Zurich introduces the full online solution by 2013 and Valais only by 2015. Also the size of the department responsible for eTax is bigger in Zurich. Yet, looking at the usability and functionality the solution offered by the canton of Valais is on more or less the same level as the solution offered by the canton of Zurich is.

<table>
<thead>
<tr>
<th>Stages</th>
<th>Forms</th>
<th>Location of program</th>
<th>Tax declaration</th>
<th>Add. documents</th>
<th>Payments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1</td>
<td>Physical</td>
<td>-</td>
<td>By mail</td>
<td>By mail</td>
<td>Not online</td>
</tr>
<tr>
<td>Stage 2a</td>
<td>Electronic</td>
<td>Local hard disc</td>
<td>By mail</td>
<td>By mail</td>
<td>Not online</td>
</tr>
<tr>
<td>Stage 2b</td>
<td>Electronic</td>
<td>Local hard disc</td>
<td>Online</td>
<td>By mail</td>
<td>Not online</td>
</tr>
<tr>
<td>Stage 2c</td>
<td>Electronic</td>
<td>Local hard disc</td>
<td>Online</td>
<td>Online</td>
<td>Not online</td>
</tr>
<tr>
<td>Stage 3a</td>
<td>Electronic</td>
<td>Central on server</td>
<td>By mail</td>
<td>By Mail</td>
<td>Not online</td>
</tr>
<tr>
<td>Stage 3b</td>
<td>Electronic</td>
<td>Central on server</td>
<td>Online</td>
<td>By mail</td>
<td>Not online</td>
</tr>
<tr>
<td>Stage 3c</td>
<td>Electronic</td>
<td>Central on server</td>
<td>Online</td>
<td>Online</td>
<td>Not online</td>
</tr>
<tr>
<td>Stage 4</td>
<td>Electronic</td>
<td>Central on server</td>
<td>Online</td>
<td>Online</td>
<td>Online</td>
</tr>
</tbody>
</table>

*Table 6: Reifegradmodell*

Both solutions are currently at a different state according to own Reifegradmodell. The Valais solution can be classified as Stage 2b). From 2013 onwards, the additional documents can be scanned and sent online. This will classify as 2c). Zurich has chosen a different path and skipped the 2b) stage, the adaptation of the software solution by offering a functionality to send the forms directly online to the Cantonal Tax Office. Zurich is about to introduce a solution that can be classified as stage 3b) on a cantonal level. Zurich’s solution is more developed. Yet, it has to be pointed out, that both solutions are adequate solutions that fulfil their individual needs.

Zurich sets very ambitious targets regarding their leader role in the egovernment context. An immense number of projects in this area are ongoing. An impressive basic IT infrastructure could have been set-up so far and is about to be further developed. Zurich is among the leading Cantons, especially with regard the ongoing fundamental transformation in public administration. This may be related to the fact that Zurich generally takes strong national position within general Swiss politics. Hence, one can say that it is one of the Cantons within Switzerland, which is predestined to take the “first mover” role. With
this step it somehow acts as a pioneer and thus, enables other Cantons to benefit from its experience and infrastructure at a later stage.

The Canton of Valais offers a very pragmatic solution. It is very successful with regard to the public share reached. Almost 80% of the tax subjects in Valais use the e-Tax solution. On the other hand, the canton is ranked quite at a low position. Referring to today’s solutionary options in the egovernmental area the Valais is rather at a bottom position, due to its comparatively unsophisticated basic egovernmental infrastructure. In the area of eTax, surprisingly, the current solution is software-based, but at the same time implies an important sophisticated feature: the possibility to send income tax declaration electronically can be seen as a vital asset. The possibility to change to web-based income tax processing might need some additional time. It keeps on providing a very interesting innovative field for researchers.
8. Bibliography


http://www.waset.org/journals/waset/v14/v14-56.pdf

http://ssrn.com/abstract=2115035 or

Europe’s Information Society on Benchmarking
http://ec.europa.eu/information_society/eeurope/i2010/benchmarking/index_en.htm#eEurope

[ESTV 2012]. Das schweizerische Steuersystem

Website of the Cantonal Tax Office of Zurich

Website of the Canton of Valais
http://www.vs.ch/Navig/navig.asp?MenuID=29746&Language=de
Website of the eGovernment Strategy of the Canton of Zürich
http://www.e-gov.zh.ch/internet/staatskanzlei/egov/de/ueber_uns/was_wir_tun/transaktionsplattform_zhser-vices.html

Website of the Swiss eGovernment Strategy
http://www.egovernment.ch/de/dokumentation/studien_neu.php

Website of gfs.bern
### 9. Appendix

#### 9.1. Özgen's (2011) eTax classification framework

<table>
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<tr>
<th>Stages</th>
<th>Service Classification</th>
<th>Service Characteristics</th>
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| 1st Stage | E-Tax Information Services | (1) All kinds of information, laws, regulations and legislations related to all sorts of taxes have been transferred to the internet environment through classification; all kinds of questions that users may need, dates of tax payments being in the first place, have been answered on-line on the websites belonging to the government.  
(2) All kinds of tax-related developments, periodical official publications, circulars, reports, tax incentive information, etc. have been opened to online easy access of users within the framework of transparency and accountability rules. |
| 2nd Stage | E-Tax Interactive Communication Services  
E-Filing Infrastructure  
(EFS – E-Tax Filing System) | (3) Basic information needed by tax-related public institutions (e.g. tax returns) has been converted into electronic forms.  
(4) Users can download these forms through the web, fill up these forms on their computers, and send them to the tax administration through the web.  
(5) Users can demand on-line information and explanation from tax administration concerning any tax-related issue.  
(6) Information exchange transactions have been conveyed by government to the internet environment to a great extent. To this end, it has been started to develop web-based applications and programs.  
(7) It has been started to conduct tax surveys in the internet environment. |
| 3rd Stage | Transactional E-Tax Services  
E-Payment Infrastructure  
(EIPS - E-Payment System) | (1) Taxes have started to be paid by users on-line.  
(2) Tax refunds have started to be transferred online to the bank accounts of taxpayers.  
(3) Government has started to make all kinds of subsidy, scholarship and social security payments on-line.  
(4) Agricultural supports implemented by government and payments related to development programs are made on-line.  
(5) Users can check the on-line payments made by government into their bank accounts.  
(6) “Automatic payment orders” and “electronic fund transfers” in tax-related issues become a commonplace. |
| 4th Stage | Integrated E-Tax Services  
Integrated (ETMS) E-Tax Management System | (1) All kinds of tax-related services have been shared among tax management units, and service conflicts have been prevented. Services and administrations responsible for each one of these services have been clearly determined.  
(2) All kinds of tax-related services have been transferred into the internet environment; tax-related rights have come to be obtainable and traceable on-line.  
(3) Users can get both national and local tax-services on-line.  
(4) It is possible to access tax-related information, laws, regulations, other legislations, answers of questions needed by users, new tax-related developments and changes, all periodical official tax-related publications, circulars and reports via a user-friendly web portal.  
(5) These web portals belonging to each country contain all sorts of compiled and processed tax-related information, tax incentive practices; in particular, that serves the business world.  
(6) E-tax services are provided to everyone on-line 24/7. |
| 5th Stage | Participatory E-Tax Services  
Participatory (ETMS) E-Tax Management System | (1) In the fifth stage, tax services have been arranged in such a way to allow political participation of users besides offering integrated e-tax service’s characteristics.  
(2) E-tax web portal of the government contains feedback surveys and forms pertaining to e-tax services.  
(3) User can actively submit their tax-related recommendations, comments and complaints on-line.  
(4) Systems have been established to allow electronic processing and evaluation of information obtained by this way. |