e-Customs Study: Private Sector Views on Potential Benefits of Further Electronic Customs Developments in Switzerland

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Abstract. This research paper explores the current state of play regarding cross-border trade and logistics operations in Switzerland, aiming to identify opportunities to reduce costs and to improve efficiencies in cross-border supply chains, covering procedures, tools and services associated with import, export and transit procedures. The study present the following conclusions and recommendations: Interactive and user friendly e-Customs services which facilitate the preparation, filing, tracking and storage of customs declarations, amongst other functions, can help to reduce costs and improve efficiencies in cross-border supply chains. Design and implementation of e-Customs services need to be driven by tangible benefits for the private sector, including facilitating export procedures, improving flexibility when working with customs, reducing the need to re-enter any customs data during the declaration processes, and enabling a seamless flow of data between the parties involved.

Keywords: e-Customs, customs compliance, SECO

1 Study Background, Process and Population

The Federal Council had mandated the State Secretariat for Economic Affairs (SECO) to prepare a feasibility study in cooperation with the Federal Customs Administration and other Federal Offices on a direct interaction between the Swiss and EU customs systems. The feasibility study is part of the e-government package as laid down in the Federal Council growth policy 2008-2011. This research project, as part of the overall feasibility study, started in the beginning of May 2010. The first results were delivered at the end of July 2010, and full results in November 2010.

The objective was on one hand to study the cost implications of direct electronic data exchange between Swiss enterprises, in particular small and medium enterprises (SMEs), and the Swiss customs administration and on the other hand to look at the costs and benefits for companies from possible future simplifications by connecting the Swiss and EU customs clearance systems. This in particular concerns the harmonization of some simplified procedures as well as the mutual recognition of the principles governing the AEO-F (Authorized Economic Operator, customs & security) scheme of the EU.

The scope of this study also includes assessing whether Swiss companies will benefit in terms of reduced costs and other potential benefits from a fully fledged interactive web-based application (solution in compliance with e-government principles) as a way of carrying out customs procedures.

For the purpose of this paper, following two broad definitions (from the literature) are used:

e-Customs = The use of Information Technology to carry out customs compliance using electronic communications channels replacing paper format customs procedures, thus creating a more efficient and modern customs environment.

e-government = The use of Information Technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees.

1.1 Review on e-Customs Development Initiatives on the Global Scale

The traditional role of Customs as a "gatekeeper" is changing due to developments in the international supply chain environment, including: the growth of international trade, reduced tariff and non-tariff barriers, crime and terrorism threats, new models of logistics and the supply chain, and the increasing use of information and communication technology (ICT) in international trade operations. These developments are putting pressure on customs administrations to update their operational models, according to Gordhan (2007) [1] and Widdowson (2007) [2]. The use of information and communication technology enables processes to be more automated, which increases efficiencies and reduces the need for manual re-entries and validation of the same data [3]. Due to the elimination of redundant tasks, the public sector can take advantage of the automation by delivering faster services to companies and can also achieve time related and financial savings, according to Raus et al (2009) [4]. Hesketh (2009) [5] suggests that "electronic pipelines" would simplify customs procedures and facilitate all parties in the supply chain to acquire the information needed. However, Raus et al (2009) [4] point out that there are barriers preventing companies from adapting ICT systems: (1) Costs — small and medium-sized companies may not have the required financial resources to acquire and implement new computer hardware and software; (2) Governmental agencies do often not provide a template specifying which new regulations apply; (3) High complexity in standardization of processes and procedures, especially SMEs, may not possess the required means for keeping multiple standards/systems; and, (4) The fear and resistance among employees to adapt new work procedures.

On global level, the World Customs Organization (WCO) designed the SAFE Framework of standards to secure and facilitate trade and logistics, as it comes to interaction (including possible disruptions) between trade and customs in the 177 WCO member countries. The SAFE Framework consists of four core elements. First, it harmonizes the advance electronic cargo information requirements on inbound, outbound and transit shipments. Second, each country that joins the SAFE Framework commits to employing a consistent risk management approach to address security threats. Third, it requires that at the reasonable request of the receiving nation, based upon a comparable risk targeting methodology, the sending nation's Customs

administration will perform an outbound inspection of high-risk containers and cargo, preferably using non-intrusive detection such as large-scale X-ray machines and radiation detectors. Fourth, the SAFE Framework defines benefits that Customs will provide to businesses that meet minimal supply chain security standards and best practices [6]. However, Switzerland is not yet a signatory to the SAFE framework.

On European level, the European Commission has adopted two proposals (in 2005) to modernize the EU Customs Code and to introduce an electronic, paper-free customs environment in the EU. The first proposal aims to simplify and streamline customs processes and procedures. The second proposal is designed to make Member States' electronic customs systems compatible with each other; introduce EU-wide electronic risk analysis and improve information exchange between frontier control authorities; make electronic declarations the rule; and introduce a centralized customs clearance arrangement . The result should be to increase the competitiveness of companies doing business in Europe, reduce compliance costs and improve EU security [7].

Denmark, Germany, and Portugal are examples of European countries that have a Web interface in place to facilitate cross-border trade, according to the CBRA survey (2010) and Bjorn-Andersen et al (2007) [8]. The Web-interface functions both as a way of carrying out customs declarations and as a hub for companies to acquire information, documents, and other related information. Germany has taken this one step further and does not accept paper declarations anymore, which means that companies are forced to use an electronic means of submitting customs declarations, with the Web interface being one option, while Portugal and Denmark still accept both paper and electronic documents (CBRA survey, 2010). The Italian customs administration allows for customs brokers to exchange information with Customs via the IT system “AIDA”. The implementation process of AIDA is an example of barriers that can arise. Difficulties mentioned are the inability to gather all the necessary customs information in one place and to integrate the different IT systems. IT system integration is troublesome, resulting in multiple controls over the same data by different parties along the trade process (CBRA survey, 2010). Overall, a successfully implemented Web interface can save time and money for businesses operators.

1.2 Target Sectors

For the purpose of this study there are four main (potentially overlapping) sectors to be analyzed: (1) companies using electronic certificates such as veterinary, phytosanitary or CITES related where a web-based electronic data exchange with authorities in trans-border commerce is already operational; (2) companies specializing in investment goods such as machinery production; (3) trading companies (import/export); and (4) companies with existing customs simplifications.
There are a total of 312'861 companies in Switzerland today; only about 1’000 (0.3%) of these are “non-SMEs”, i.e. companies that have more than 250 employees. The remaining 99.7% of the companies are regarded as Small or Medium Enterprises (SMEs) employing less than 250 persons each.

1.3 Cross-Border Trade in Switzerland

In general, import from the EU to Switzerland can be done in two ways. The first method requires lodging an export declaration (ECS) at the customs office of export in the EU and then preparing and submitting an import declaration at the customs office on the Swiss side of the border. The import declaration can be prepared at the border office or in advance and then submitted to Swiss Customs together with other supporting documents. After customs clearance, including payment of relevant duties and taxes, the goods are released for free circulation in the Swiss market. The second method is to first prepare a transit declaration in the country of export, transport the goods across the border to the final destination in Switzerland without having to go through import clearance at the border, and then submit the import declaration for release into free circulation, paying duties and taxes as applicable. Instead of release for free circulation, the transit procedure can be followed by a warehouse procedure, where goods can be stored until they are being supplied to their final destination.

Exporting from Switzerland to the EU can be done in two ways. The first method assumes the issuance of an export declaration in Switzerland and an import declaration in one of the EU countries. After export customs clearance and payment of relevant export charges, the goods can be delivered to the EU. Depending on the INCOTERMS , and assuming that import customs clearance is the responsibility of the EU consignee, the interaction of Swiss companies with customs ends after the goods are cleared for export. The second method also applies the transit procedure. In this case, the goods are cleared for export in the same way as described above; then they are accompanied by a transit declaration until they arrive at their destination in the EU. At the destination, the goods can undergo the customs procedure of release into free circulation or any other customs procedure, including warehousing.

1.4 Methodology and Survey Questionnaire

In this study, the main instruments for data collection are a survey questionnaire combined with personal interviews. The data collection is carried out in two stages, a first round of survey distribution and on-site interviews. The second round consists of follow-up interviews to validate and clarify results from the survey. The methodology for this study is described in the following six steps:

1. Setting up the context for the study; defining the purpose and boundaries, describing the current cross-border trade procedures used by Swiss companies.
2. Surveying companies in Switzerland; defining the study population and sample size, creating and distributing the questionnaire form. Analyzing basic information about the survey respondents.
3. Analyzing the closed survey questions; involvement of Swiss companies in customs activities, customs compliance costs, priorities of future investments and anticipated benefits from future e-Customs upgrades.

4. Analyzing the open survey questions and live interviews; qualitative analysis of potential benefits with direct customs interaction / web-application, and possible simplifications / benefits if Swiss and EU customs were to interact in the future.
5. Interviewing a sub-group of the companies to validate and clarify results from the original survey.
6. Analyzing, combining, structuring all the study data towards final conclusions and recommendations regarding cost implications and potential benefits of future e-Customs development.

The survey questionnaire was designed using both open and closed questions, where the closed questions are used to gather quantifiable data while the open questions are used to gather additional qualitative information. The questions were derived from literature research and consultation with several experts in customs matters. The survey questionnaire had a total of 31 questions.

Before distribution, the questionnaire was thoroughly reviewed by SECO, and a group of CBRA advisors (top specialists in customs matters). As Switzerland is a multi-lingual country, the questionnaire was translated into four languages: English, German, French, and Italian. Companies targeted with letter mail received the survey in their respective language to yield a higher response rate. Companies receiving the survey via e-mail were given the option to download the survey in a native language via the Cross-border Research Association website (www.cross-border.org). Companies were able to reply in several ways, including e-mail, fax, and letter mail.

1.5 General Information about Study Participants

Survey data was collected from 70 companies during summer and fall 2010. The survey form was sent out via multiple channels, including Economiesuisse, Swiss Shippers Council and Schweizerischer Gewerbeverband associations – in total to over 1000 companies. The main population for the survey was Swiss-based manufacturing and trade/retail/wholesale companies with import or export and/or transit operations. Over 80% of the survey respondents were involved with import and/or export procedures, while less than 20% were using transit procedures. The survey participants can be considered as active players in international trade: over 60% of purchase value was imported to Switzerland, and over 75% of the sales value was exported outside Switzerland. Around 75% of the study participants were small and medium sized enterprises (SMEs).

The spread in terms of number of customs declarations was broad. For example, for imports, the minimum number of declarations annually per company was 11 and the maximum was 100000. The EU was clearly the most important trading partner for the survey respondents. For imports, over 90% originated in the EU, and for exports, over 70% were destined for the EU. The most commonly used customs district was Schaffhausen, followed by Basel, Geneva and Lugano. The main mode of transport used by the respondents was road, followed by air, rail, and inland waterway.

2 Main Findings with the Study

The survey respondents prepare, file, and store their customs declarations in a variety of ways. Around one-quarter of the companies use some sort of in-house or Enterprise Resource Planning (ERP) system with automated processes for these tasks. Rented or leased software is in use by about 15% of the companies, particularly for transit and export procedures. The e-dec[1] (gateway) application is used by over three-quarters of the companies for export declarations. Paper-based forms are still used by about 25% of the companies, and about 5% of the survey participants file declarations by other means, i.e., by fax, telephone or verbally. Storage of files is done still very much paper-based, especially for imports, where virtually all the companies maintain paper-based records. With export files, digital storage is much more common. Third-party services - freight forwarder, customs broker, or similar - for the preparation and submission of declaration data to customs was exploited by about one-half of the participating companies, especially for the import procedures.

Around half of the companies have no knowledge on overall customs compliance costs, while the other half either claims to be able to make ”educated guesses” or to have the real cost data per annum or per declaration. The average cost per declaration was calculated to be 56 CHF, varying between the minimum of 3 CHF and maximum of 190 CHF per declaration. Out of the four typical compliance cost components, internal human resources is the major one, followed by external IT systems. Regarding budgets for the years 2010-2011, internal IT systems were considered as the highest area of investment, while new investments in external customs compliance services were considered as the lowest priority. An additional aspect of the compliance costs and usage of third-party service providers: for export procedures, the cost per declaration is about 30% higher for companies who use external services than for companies who do not use such services. For import procedures, no such difference exists. This difference of approximately 30% export procedures may have many reasons behind it: besides high third-party service premiums, it is possible that companies who do not use external services do not take into consideration all of the internal costs while ensuring customs compliance with their export shipments – this remains a topic for future research.

Regarding the potential benefits of possible future upgrades in trade–customs interactions, and e-Customs and e-government services in Switzerland, the following six aspects were ranked on the top: facilitating export procedures; improving flexibility when working with customs; reducing the need to re-enter any customs data during the declaration processes; enabling seamless flow of data between the parties involved, and allowing the re-use of data; the increasing predictability of the customs clearance process and flow of goods; and reducing other administrative costs. On the bottom of the scale, the three lowest priority aspects were: facilitating transit

[1] E-dec is an electronic declaration procedure for import, transit and export goods introduced in Switzerland. The e-dec streamlines declaration procedures and customs’ cargo processing.

procedures; coordinating the approach to the control of goods and the application of legislation; and protecting sensitive trade data.

3 Findings Specific for Small and Medium Enterprises (SMEs)

Looking at the preparation and filing of customs declarations, SMEs use information systems (in-house or ERP) to a lesser extent than large enterprises. Depending on the type of information system and on the customs procedure in question, between 0% and 18% of SMEs exploit the data and/or functionalities of these systems, while the rest have to rely on less automated approaches. Other types of automation, including e-dec and NCTS ('New Computerized Transit System') are also less common amongst SMEs compared to their bigger counterparts. On the contrary, storage media of the past declarations, digital versus paper, and reliance on 3rd-party services, mainly customs brokers and rented software, are on a similar level as with the large enterprises. Analyzing the awareness of customs compliance costs, SMEs are less knowledgeable of such costs, either per declaration or per annum, compared to the large enterprises. The difference is biggest with costs on import processes, where over half of SMEs do not know the costs, compared to one third of large enterprises.

Concerning the cost value per declaration, SMEs have an average cost of 62 CHF, while large enterprises have an average cost of 37 CHF per declaration, confirming a typical "economies of scale" applicability with the world of customs compliance. Regarding customs compliance development budgets for 2010-2011, SMEs plan to have internal IT systems as the main investment target, while larger companies count on investing more in external IT solutions/services.

4 Main Issues with Today's Situation on Trade-Customs Interaction

When asking the private sector about issues with customs administrations anywhere in the world, there is normally no lack of problems raised, because the "dual role" of customs in controlling and facilitating trade is challenging by nature and always open to complaints. A limited set of core issues with the survey participants is presented in the following, while aiming to be as specific as possible in the criticism expressed.

First, problems with long cross-border lead-times were pinpointed by at least 15 companies in the open questions section of the survey questionnaire. The comments varied from the generic (e.g., "lead times need to be reduced") to specific concerns about competitiveness, especially with competitors in the EU, customer service levels, etc. One company shared the following example of "too long lead times" for the European transports: "Transport from Switzerland to Stuttgart (Germany) takes 3 days, where customs requires 1 day; while transport to Asia takes 4 days". Second, several companies raised their concerns about the overall costs for customs compliance. In the open questions of the survey, at least 12 companies highlighted the

relevance of cost reduction in relation to any type of future e-Customs enhancements. Third, criticism on the e-dec gateway solution was expressed by a couple of respondents, complaining about inflexibility, error-rates, and costs related to updates. As one respondent explained, "We have lots of problems between communications with systems ...e-dec has data, which customs cannot see." Another claimed that "until now, no benefits (of e-Customs) are known to us. To the contrary, we find e-dec being complicated and prone to computer errors..."

Last but not least, over 60% of the companies replying to the survey were former beneficiaries of the Vereinfachte Ausfuhrregelung (VAR) simplification, which ended on 31.3.2010. About 70% of the former VAR beneficiaries experienced higher compliance costs since VAR ended, mainly due to investments in new software and some hardware. Six companies shared detailed cost numbers, which varied from a minimum cost of 3'400 CHF (for an SME) to a maximum cost of 128'000 CHF (for a large enterprise).

5 Conclusions and Recommendations

Switzerland's largest trading partner is by far the EU, as Switzerland is not a EU member Swiss enterprises are submitted to much more complicated rules and regulations when importing/exporting to the EU compared to "EU-member" competitors. Hence one of the major problems for Swiss enterprises when trading with EU is the complicated procedures. Also EU cannot be treated as one country, and each member state have their own tax-codes. In that light, competitors located within the EU territory have a cost advantage for EU trade compared to Swiss companies, through the free movement of goods mechanism.

From the private sector perspective, well designed and implemented e-Customs services can provide a means to drive down customs compliance costs and to make the overall cross-border operations more efficient and smooth. However, attention has to be paid to many details during the design and implementation phases of an e-Customs initiative (or a set of initiatives) – as no silver bullets exist.

5.1 Scope and Priorities for e-Customs Services

An e-Customs platform can consist of many different services in terms of content and functionalities, with the overall goal of making cross-border compliance management faster and cheaper for the private sector. Typical e-Customs elements identified by the study participants include the following:

- Preparation of customs declarations
- Filing of customs declarations
- Tracking of status of filed customs declarations
- Storage of customs declarations

- Filing and storage of any other documents from the private sector to custom, including monthly reports with specific commodities
- Storage and sharing of any cross-border trade and logistics related forms, including non-customs forms

In addition, functionalities enabling printing of import/export/transit documents (assuming paper prints are still needed); extracting import/export/transit statistics; and back-up service for the declaration data, were seen as potential components of future e-Customs solutions in Switzerland. Looking at e-Customs examples from other countries, one could also consider adding elements such as: interactive tariff classification system, official exchange rates, and binding rulings, amongst other possible elements.

5.2 Improving Customs Administration Service Levels towards the Private Sector

Several respondents would appreciate being informed as early as possible about upcoming changes and updates, were they connected with procedures, data requirements or any other regulatory matters. This way the companies could avoid the ´last minute hassle´ when upgrading their own processes and/or systems, training their personnel, etc. An e-Customs platform could be used as a proactive information delivery channel to support this request. Being able to ´do business with customs´ on a continuous basis, i.e., not being tied to office hours, was seen as an important objective by a couple of respondents. Understanding that many aspects do require the participation of officers in duty, an e-Customs platform could create a sort of ´virtual 24/7 customs office´ for the benefit of the private sector operators wanting to operate during night and/or weekend hours. A wish of being able to deal with ´key account managers´, or customs officers with detailed knowledge of specific commodities/supply chains, was presented by at least one respondent. This way companies could avoid the process of ´having to teach customs´ on the specifics of their business, over and over again. An e-Customs platform could facilitate this process by supporting efficient interaction between specific companies and dedicated customs officers, even on a country-wide basis. Fourth, somewhat related to the previous three items, some private sector actors would appreciate receiving more training from customs on current and future aspects of cross-border compliance management. Such training could be facilitated by an e-Customs platform, assuming adequate resources would be made available for achieving this objective. The ´private sector wish list´ of total of nine elements to enhance trade-customs interaction in the future is visualized in the Figure below.

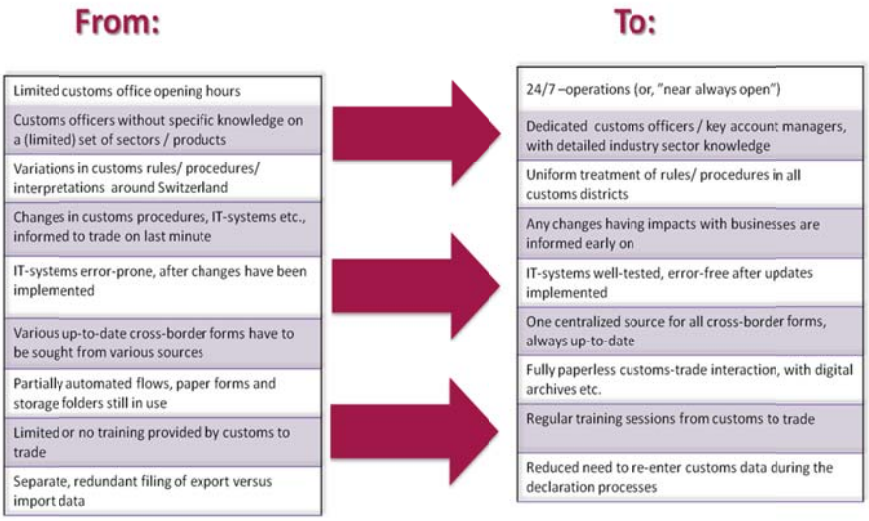

Fig. 1. Private sector wish list on customs-trade interaction enhancements.

5.3 Prototyping and Benchmarking Exercises for an e-Customs Platform

As indicated above, an interactive e-Customs platform can provide tangible benefits for the private sector in Switzerland by lowering customs compliance costs and by making the cross-border processes and even physical flows faster and more efficient. However, as e-Customs projects are likely to be expensive investments, careful attention should be paid in the design and prioritization phases. One way of doing this is to arrange for a scoping workshop on two separate days: one for companies with cargo interest, and a second one for logistics service providers, including customs agents and brokers. Companies of various sizes, from micro to large enterprises, covering multiple commodities and transport modes, should be represented. The workshop(s) should be facilitated by top experts in e-government services and in customs compliance, preferably two separate persons. And the main outcome should be a tangible roadmap for the development of e-Customs services in Switzerland, with a next level of cost-benefit analysis attached to it.

Regarding benchmarking with e-Customs services in the EU and the rest of the world, it is recommended to spend some resources to learn about good practices and lessons learned on a variety of e-Customs aspects elsewhere. A practical forum for this is provided by the World Customs Organization (WCO) Partnership in Customs Academic Research and Development (PICARD) program

5.4 Final Notes

Well designed and implemented e-Customs services can pave the way towards 100% electronic management of all customs-related data. The ultimate goal is to exploit export declaration data automatically as well as import (and possible transit)

declaration data between two or more countries. However, many policy-related, legislative, operational and technical challenges must be overcome – e-Customs services cannot enable such changes of paradigm on their own. If and when decisions are made to move on to develop the next generation of e-Customs services in Switzerland, one should ensure the availability of adequate financial and human expert resources without taking out resources from the current developments. The outcomes should be fully voluntary for any Switzerland-based private sector actor to use (or not to use). The development process should be done in a highly collaborative and transparent manner with all relevant governmental and private sector parties involved. And finally, any aspects supporting further cross-border trade and logistics harmonization, integration and automation between Switzerland and the EU should be taken into serious consideration.

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