# Computer-Assisted E-Customs Transactions:
## Proposing a System to Support Small and Medium-Sized Enterprises in Electronically Declaring International Exports

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## ABSTRACT

*E-government aims to ease administrative processes based on an electronic handling. While larger enterprises can often benefit from electronically integrated governmental transaction services, small and medium-sized enterprises (SME) regularly face certain obstacles. For instance, this can be observed in the context of e-customs transactions. According to a United Nations study, an inefficient customs clearance is responsible for 7% of international trade costs. Hence, governments across the world aimed to reduce administrative burdens by introducing electronic customs systems. The paper at hand examines existing approaches of electronically declaring exports to e-customs systems focusing the German ATLAS system. Based on an evaluation regarding the appropriateness of existing approaches from the perspective of SME, the paper concludes that none of them sufficiently meets their specific requirements. To tackle this status-quo, the paper presents the concept of computer-assisted e-customs transactions as well as the EXPORT system, which is a prototypical implementation of the proposed concept.*

*Keywords:* *ATLAS, Business Process Management, E-Customs, E-Government, Export Declaration, Small and Medium-Sized Enterprises*

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# 1. INTRODUCTION

## 1.1. E-Government for SME – Opportunity Versus Challenge

In the course of the ongoing electronification of business processes, companies face significant change not only within their organization, but also in relation to their environment. The availability of the Internet has altered the way organizations communicate and act with customers and business partners (Grönlund 2004) and enabled entirely new business models (Krumeich et al. 2013). Not only the way companies act in terms of business-to-business (B2B) as well as business-to-customer (B2C) processes has changed, but also the interaction between organizations and the public administration (business-to-administration, short B2A). The latter development has formed E-Government (short for Electronic Government) and its concerning research domain, which emerged in the late 1990's.

According to the European Union e-government is defined as "the use of Information and Communication Technologies (ICT) in public administrations combined with organizational change and new skills in order to improve public services and democratic processes" (cf. Grönlund 2004 for an extensive discussion on e-government definitions). Whereas companies are generally free in implementing B2B and B2C processes, B2A processes are strongly influenced by legal constraints.

As expressed in the considered definition of e-government, its introduction is always accompanied by organizational change. For large enterprises the enactment of organizational changes, which typically entails an adaptation of business processes in terms of their electronification, is feasible; yet, small and medium-sized enterprises (SME) face significant obstacles, since they usually do not have ICT available into which electronic processes can easily be integrated (Krumeich et al. 2014a). Hence, they have further effort in performing the electronic handling of administrative processes via additional software tools.

There are several models aiming to analyze the adoption or stage-of-realization of e-government services (Adam et al. 2003). According to Moon's (2002) frequently cited model, five different stages can be distinguished: "one-way communication/information dissemination", "two-way communication", "service and financial transaction", "integration" and "participation". Except for the last stage "participation", which is more dedicated to political services like electronic voting, the added value resulting from offered and fully-implemented e-government services into organizational business processes increases from stage one to four (Adam et al. 2003). Hence, even if public authorities offer transactional e-government services, SME often only profit from an eased information dissemination and communication with them as well as from reduced transmission costs through electronic interfaces – related to the first two stages. The actual benefits of electronically integrated transaction services cannot be realized as easy as for larger enterprises.

Hence, for SME e-governmental transactions still tend to be complex, often form-driven and requiring numerous context information to be successfully processed. Especially the latter one is being complicated as common practice in companies can significantly differ from administrative standard regulations; yet, public authorities accept them. Particularly in SME, this individual daily work knowledge is only in mind of some specific employees; hence, neither formalized nor electronically implemented in companies' business processes. Consequently, e-government is often rather an electronification of interfaces than a means to ease the underlying administrative business process in general. This does not correspond to the intended potentials given by electronic governmental services in order to ease administrative processes.

In the course of our research, we found this observation particularly applicable in the context of e-customs transactions. This was motivating to deeper investigate current obstacles and barriers of SME to help them profiting from electronic customs transaction services, which is the pre-condition to broaden markets across national boundaries.