Chapter 3: Beer Living Lab –
Intelligent Data Sharing

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Abstract: The Beer Living Lab (BeerLL) provided an environment for businesses,
authorities, technology providers and universities to explore innovative
concepts for export of excise goods. The BeerLL concept, developed as a
result of the collaborative efforts, proposes a radical shift from the traditional
“data-push” to an innovative “data-pull” model. In the new model, trusted
traders (such as Authorized Economic Operators) who can ensure that they
are in control of their supply chain operations no longer need to submit any
information to the authorities. Instead, interested governments get 24/7
secured access directly to the business systems of the supply chain partners
and can “pull” information when needed. This approach relies on system-
based control and builds on innovative technologies such as Service-
Oriented Architecture, smart container seals and open IT standards. The
BeerLL demonstrates how layers of administrative burdens can be removed
and costs savings realized, while at the same time ensuring a high level of
control and security.

Key words: Excise, data pull, piggy backing, supply chain security, supply chain trans-
parency, single window, trusted trader, service-oriented architecture, open
standards, smart container seal

1 Problem analysis and objectives

1.1 Current practices and plans

The Beer Living Lab (BeerLL) focussed on export of excise goods. When goods
such as beer, mineral oil, and cigarettes (also called excise goods) are sold, the pro-

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Further elaboration of aspects of the Beer Living Lab can be found in (Baida et al., 2007a;
Baida et al., 2008; Baida et al., 2007b; Frößler et al., 2007; Jessurun et al., 2008; Kartseva et
al., 2006; Liu et al., 2007; Liu et al., 2006; Mangan et al., 2009; Razmerita & Bjørn-
Andersen, 2007a, 2007b; Rukanova et al., 2009a; Rukanova et al., 2006; Rukanova et al.,
2008, 2009b; Tan et al., 2006a, 2006b; van Stijn et al., 2009; Whitley & Rukanova, 2008).
ducer must pay a special tax called Excise, which, as is the case with other taxes, is used to finance the budgets of national governments. The general principle is that excise only has to be paid in the country where the goods are consumed. Producers of excise goods have to pay excise duties to their governments for all goods produced, with the exception of those sold outside the country of production (and also for goods that have not been sold at all). In order to be eligible for exemption from the excise payment on exported goods, producers must be able to prove that the goods have left the country. At present, the information exchange for the excise-free shipments of beer between Member States (MSs) and its related procedures revolve around the exchange of a paper-based document called the Administrative Accompanying Document (AAD). This document accompanies the goods, must be signed by the Tax and Customs Administration in the country of destination, and is then returned to the producer as proof that the goods have exited the country. This proof is also used by the authorities of the country of origin to grant the beer producer the excise exemption².

EU reports indicate that huge fraud exists with the export of excise goods under suspension of duties. European Commission sources report that “In 1998 Member States estimated that alcohol fraud alone amounted to €1.5 billion yearly, which was approximately 8% of the total excise duty receipts on alcoholic beverages. Nowadays the market share of illegal cigarettes is equivalent to approximately 9% of the total excise duty receipts on tobacco products” (EU Commission, 2006). In the High Level Group report on fraud in the tobacco and alcohol sectors which was endorsed by the Directors General of Customs and Taxation in April 1998 (EU Commission, 1998), it was pointed out that the AAD paper-based system did not work well, and it recommended that a computerized system be set up to address the weaknesses of the current paper-based procedure.

To combat fraud in the excise regime, the European Commission has initiated the development of a new information system solution to replace the paper AAD, called the Excise Movement and Control System (EMCS)³. Basically, the functionality of the system is that the AAD is exchanged as electronic messages between the national Tax & Customs organizations of the countries of origin and destination of the shipment, and is acknowledged by the latter.

The required legal changes to the excise legislation to accommodate the computerised system, as well as the EMCS system specifications, have been developed at EU level in consultation with representatives of the Customs and Tax Administrations from all 27 member states. Each Member State Administration must implement an EMCS system according to the EU-defined specifications. Furthermore, all companies involved in export⁴ of excise goods must also implement an EMCS interface to communicate with their national administrations. In this way, the paper-

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² Detailed process model of the export of Beer to the UK can be found in Annex 2
³ See also http://ec.europa.eu/taxation_customs/taxation/excise_duties/circulation_control/index_en.htm (last visited 27 April, 2010)
⁴ In this context we use the term ‘export’ to refer to commercial shipments to another country, and not necessarily to shipments to a country outside the EU.