Master thesis project proposal

Preliminary title: Information sharing in legal medical supply chains – to ensure safety and quality of medicinal products.

Background
Counterfeit medicines enter in to legal medical supply chains have become an increasing problem for the society, as well as for the pharmaceutical industry. For example in the US the total value of counterfeit medicines exceeded 200 million USD in 2010 (Irish, 2010). In Sweden 96% of on-line pharmacies were classified as illegal in 2011 (Läkemedelsverket, 2011). To ensure safety of medicines, and to prevent counterfeit products to enter European legal medical supply chains, the European Commission published the Directive (EC) 2011/ 62. In addition the directive, the European Medicines Agency has published a logotype to ensure safety of medical products sold at online pharmacies (EFPIA, 2014). To comply with the legal requirements the European pharmaceutical industry has developed the European Stakeholder Model (ESM).

The development of information- and communication technologies (ICT) during the last decade has increased opportunities to use standardized frameworks, and new types of IT technologies (e.g. smart-phones combined QR-codes) efficient for communication and sharing of information in supply chains. Published studies show logistics benefits in adopting standardized frameworks to ensure safety and quality based on traceability of food products (Ringsberg and Mirzabeiki, 2013; Storöy et al., 2013). Additional studies need to be published that focus on information sharing in legal medical supply chains based on traceability to ensure of safety of products.

Purpose
The purpose of the Master thesis is two-fold; first to present a framework to ensure safety of products in legal medical supply chains. Second, identify mandatory and voluntary information attributes that complies with legal, industrial and end-consumer safety requirements on information sharing according to the physical flow of goods in a legal medical supply chain.

Problem analysis
The problem should be formulated as one or several research questions based on the formulated purpose. Answers on the research question/questions should clearly be presented and discussed based on reviewed literature. This is because companies may have a different business-oriented purpose, than the formulated academic purpose of the thesis. Further, a well conducted problem analysis that includes sub-problems should be based on theories and models in published literature.

Method
The Master Thesis project is a part of the SMEDPACK3 project with the purpose to prevent counterfeit medical products to enter legal medical supply chains. A literature review (including for example supply chain mapping techniques-, and integration frameworks/models) should be conducted in order to create a theoretical framework early in the thesis process. Empirical data (e.g. answers from interviews) should be collected from a case study of a legal medical supply chain that include SMEDPACK3 collaboration partners

such as Postnord logistics, Apotea, Innventia, Läkemedelsverket, Astrazeneca, Signtrac, the global standardization organisation, GS1, Tamro, Recipharm.

Expected outcome

Some of the expected outcomes are

- Supply chain model/ models that describe a legal medical supply chain according to flows of products and information, and stakeholders.
- Identified mandatory information attributes as well as voluntary information attributes that complies with legal and end-consumer requirements to ensure safety of medical products.
- Different stakeholders (incl. end-consumers and authorities) information sharing and presentation/ visibility requirements according to the physical distribution of product in a legal medical supply chain.

Work phases/ time plan

- Start: Febr. 1st, 2015
- End: June 25th, 2015 (alt. Aug 20th, 2015).

A detailed time-plan is required, preferable presented as a GANT-chart with main and sub activities.

Language:

- Report: English
- Case study: Swedish (preferably)/ English

Economic compensation

- Travel expenses, case study: max 1000 kr (receipt required)

Additional information: The master thesis project is preferably conducted in cooperation with two students, e.g. Master programme: Supply chain management, Management and Economics of Innovation, Interaction Design and Technologies.

Contact details

Henrik Ringsberg

Dr. Henrik Ringsberg
Div. Logistics and transportation
e-mail: henrik.ringsberg@chalmers.se
Phone: 031-772 1387