



→ Auto-ID Technologies and their Impact on Counterfeiting

Elgar Fleisch

Institute of Technology Management (ITEM-HSG), St.Gallen University

Department Management, Technology, and Economics (D-MTEC), ETH Zurich

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Agenda



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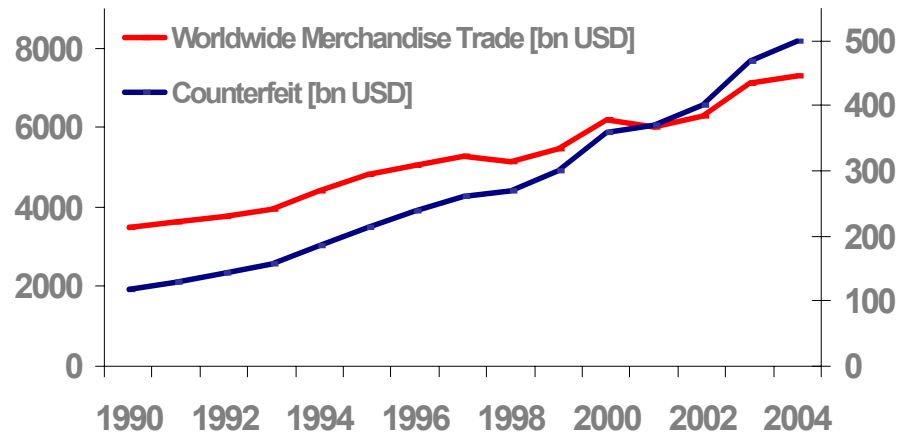
- **The Need for Secure Authentication Technologies**
- Research Questions and Anticipated Challenges
- Preliminary Results



Counterfeiting is a severe threat to the economy



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Impact on the economy:

- Impact on foreign investments
- Impact on employment
- Loss of tax
- **Important source of income for some countries**

Impact on users:

- Physical injuries
- Financial losses
- Less secure environment
- **Possible short-term financial benefit!**

Impact on companies:

- Loss of revenue
- Unjustified liability claims
- Quality perception
- Negative impact on the brand / loss of goodwill
- Negative impact on the ROI of R&D



Future authentication of identification documents can be seen as a best practice in averting cloning attacks



- High level of security using a combination of high-tech non-electronic and electronic techniques
 - Extremely difficult to duplicate
 - Secure match of document and entity to be authenticated
 - Privacy must be maintained
 - Key management is an issue
- ➔ Low-cost solutions for objects with a sufficient level of security allowing for automated authentications are not yet available.



“The Special Interest Group Anti-Counterfeiting will identify the true potential that RFID / EPC technology offers to combat counterfeiting”

For the Anti-Counterfeiting Initiative is interesting for many reasons:

- Business Impact
- All Network Issues
- Focuses on current shortcomings of the EPC Network, e.g. Security
- Cross Industry



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How can Auto-ID technologies reduce illicit trade?

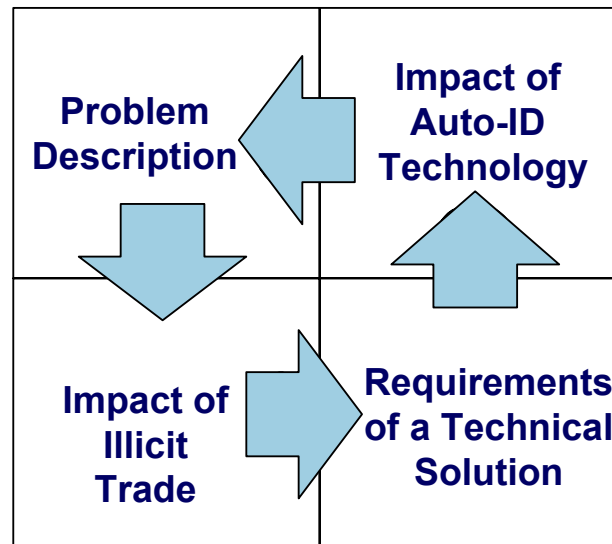


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Research questions and practical challenges:

Q1:
What is the economy of illicit trade?

Q2:
How to quantify the impact of illicit trade?



Q4:
What is the impact of an Auto-ID based solution?

Q3:
What are requirements for a solution based on Auto-ID technologies?



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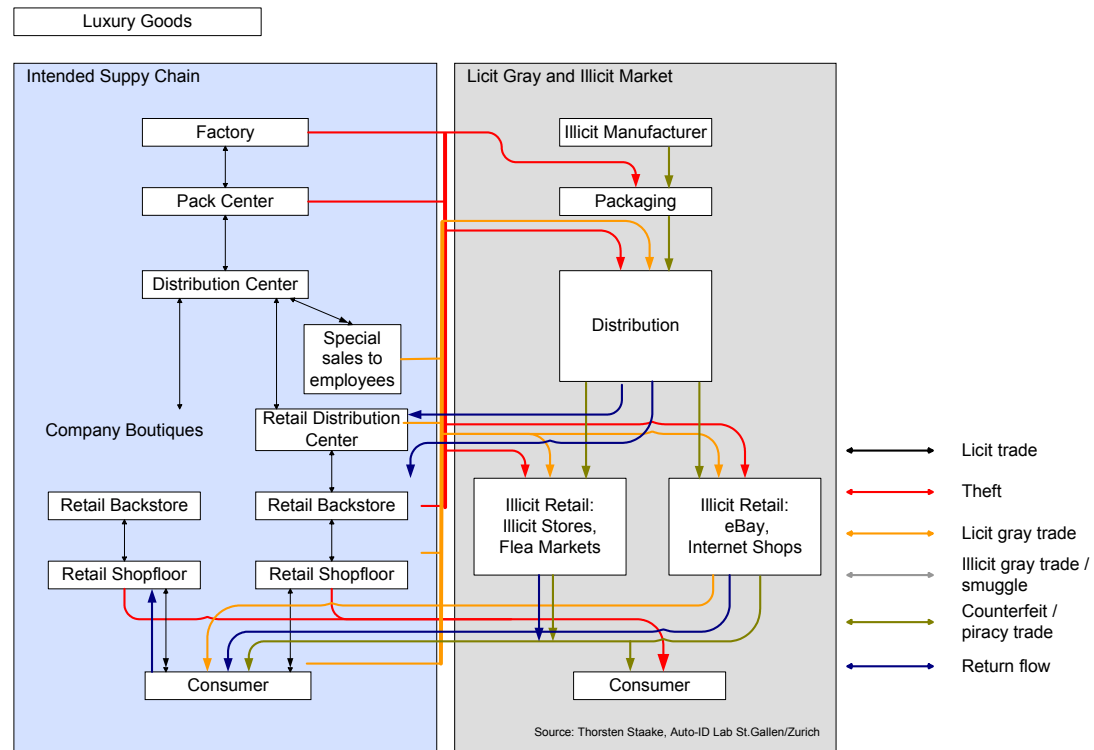


Strategies to combat illicit trade



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- Illicit products “encounter” at least two licit actors: End-users and Customs



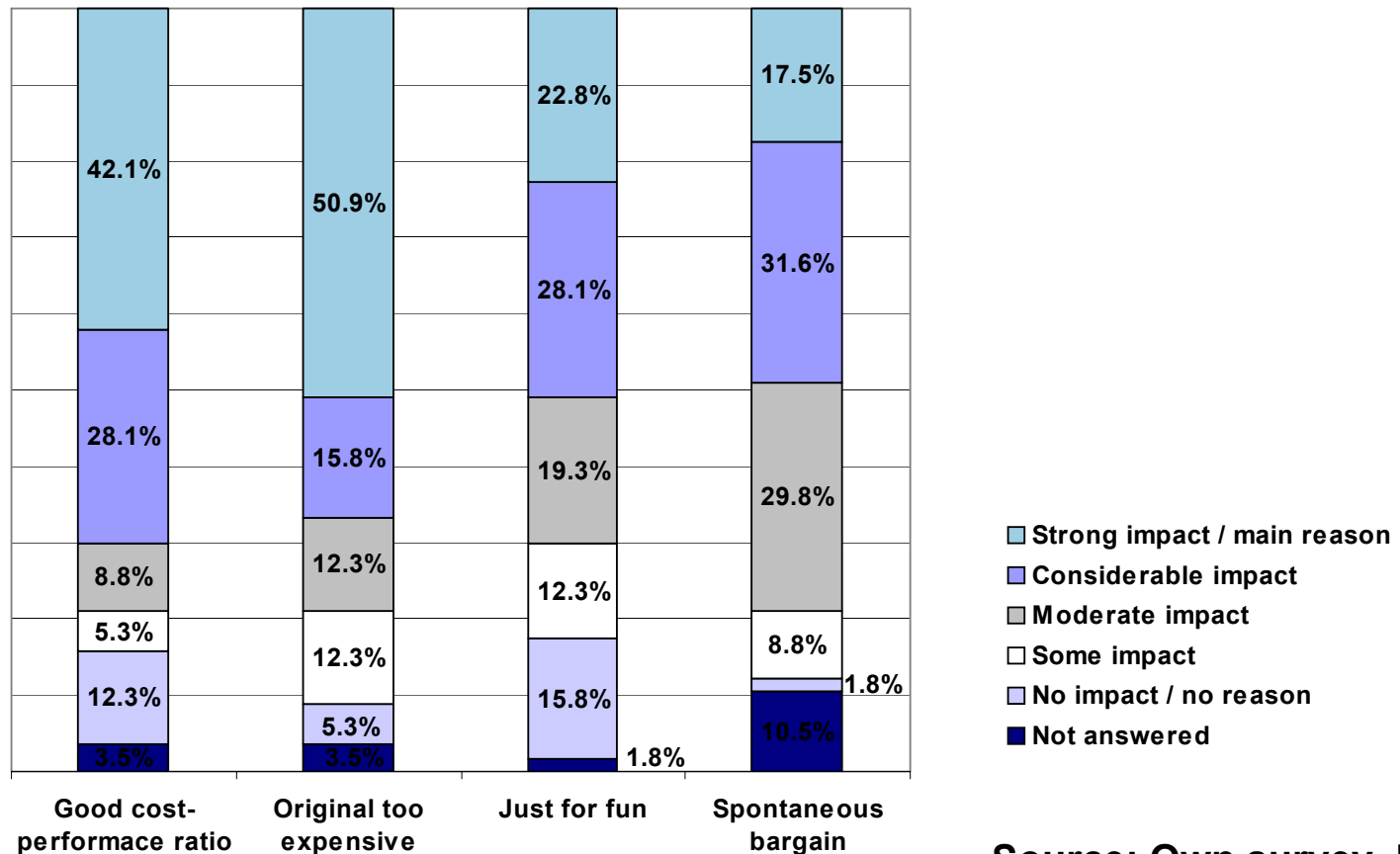
➔ An efficient strategy to combat illicit trade should utilize at least one of these actors



Reasons for buying faked products



- In case of perceptive counterfeiting, cost of the original product as well as a good cost performance ratio of the counterfeit are the most important motives for buying fakes



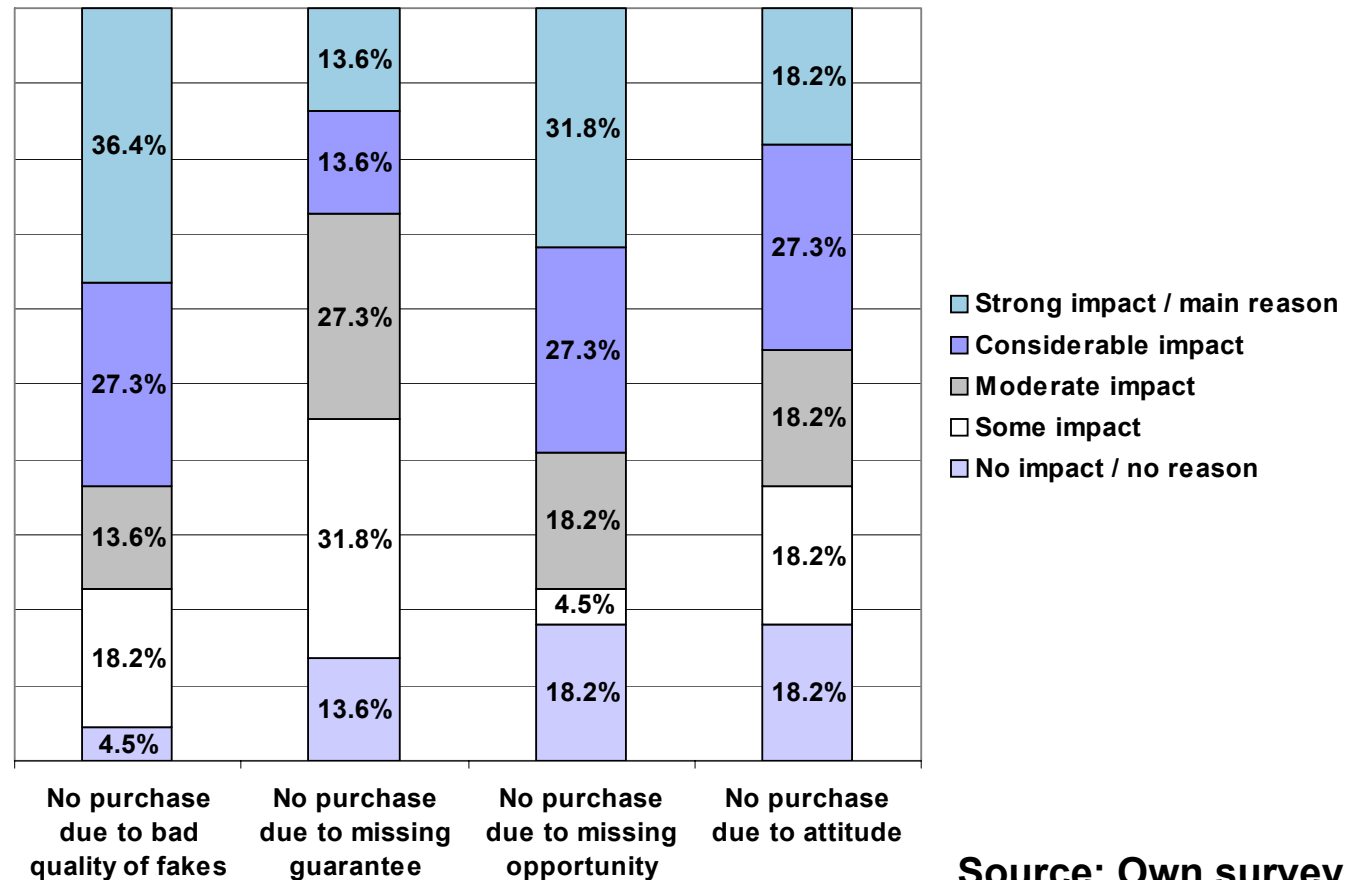
Source: Own survey, N=152



Reasons against buying faked products



- Bad expected quality and no purchase due to missing opportunity are the main reasons for not buying faked products

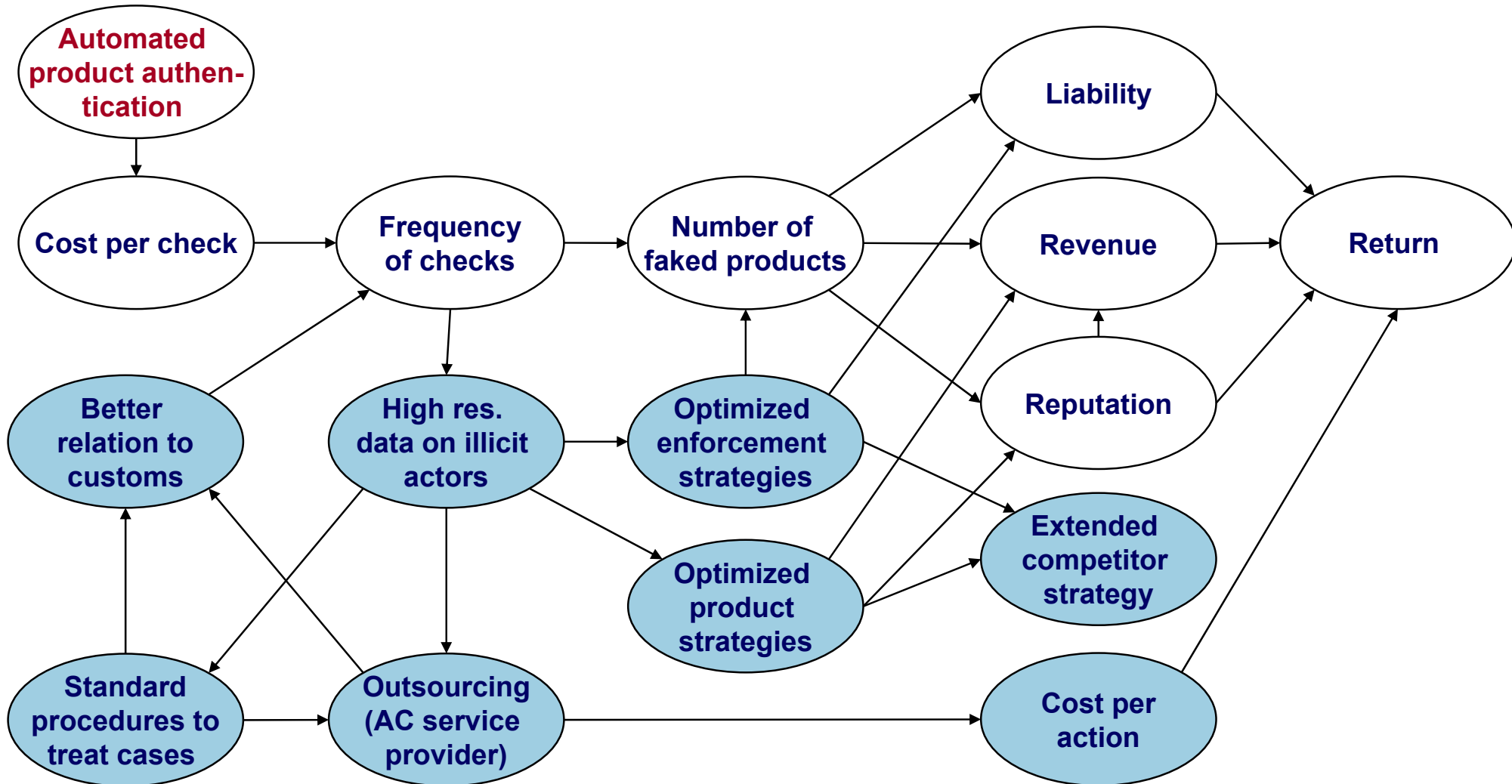




Q4: What is the impact of an Auto-ID based solution?



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Two solutions based on RFID



Cost to break a feature >> Financial gain (or possible harm) due to a counterfeit within the products lifetime

1. Basic EPC tags

- Track & trace data allows to assemble a products' history



2. RFID tags with secure authentication mechanisms

- Based on challenge response authentication



One infrastructure for various levels of security!

But: What does this mean for the Network?



Secure Authentication Mechanisms



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- The EPC network forms the IT infrastructure
- The EPC network has to be extended by an authentication service (EPC-PAS)
- The communication infrastructure does not have to be updated

