

***6th European Conference on ICT for Transport
Logistics***

**RFID TECHNOLOGY ADOPTION IN THIRD
LOGISTIC OPERATORS: A MULTIPLE CASE
STUDY**

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ANTECEDENTS

2009-2011: Cluster of Logistics – Government of Navarra – How to improve the competitiveness of logistics industry?

2011-2012: Project to study the use of TICs by Logistics Operators

STRUCTURE

- 1. RFID TECHNOLOGY**
- 2. OBJECTIVES**
- 3. METHODOLOGY**
- 4. DATA ANALYSIS AND FINDINGS**
- 5. CONCLUSIONS**
- 6. FURTHER RESEARCH**

1. RFID Technology



1. RFID Technology



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Header EPC Manager Object class Serial number

- **Header:** length, type and structure of the EPC.
- **EPC Manager:** Identifies the firm.
- **Object Class:** Number of the product in terms of inventory record (SKU).
- **Serial Number:** Identifies the tag.

2. OBJECTIVES

Focusing on the third-party logistic providers sector, we analyse:

- (a) Degree of knowledge and implementation of RFID
- (b) Key processes within the activities of logistics operators where RFID technology in logistics operators
- (c) Relevant factors that make RFID be a tool to get competitive advantages for a third logistic provider

3. METHODOLOGY

Empirical research

Case study research – Multi stage process:

- 1- Choose firms to be analyzed
- 2- Semi-structured questionnaire
- 3- Interviews in the period July-October 2011
- 4- Write a report for every firm
- 5- Final report

3. METHODOLOGY

Empirical research

Description of the cases:

What is a logistic operator? In Spain, it is not legally defined

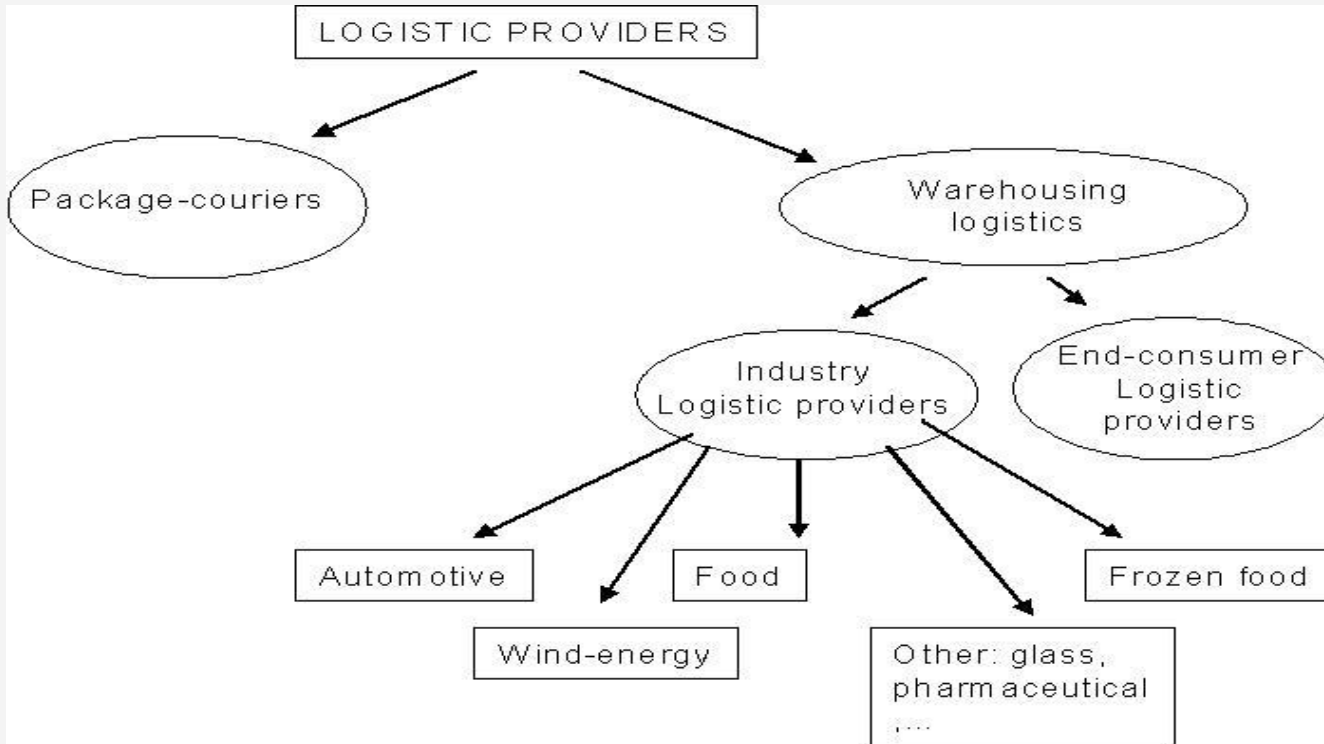
“A firm that designs, organizes, manages and controls the processes of one or more stages of the supply chain, using physical infrastructure, technology and systems information”

List of firms: ANET – local association of firms

3. METHODOLOGY

Empirical research

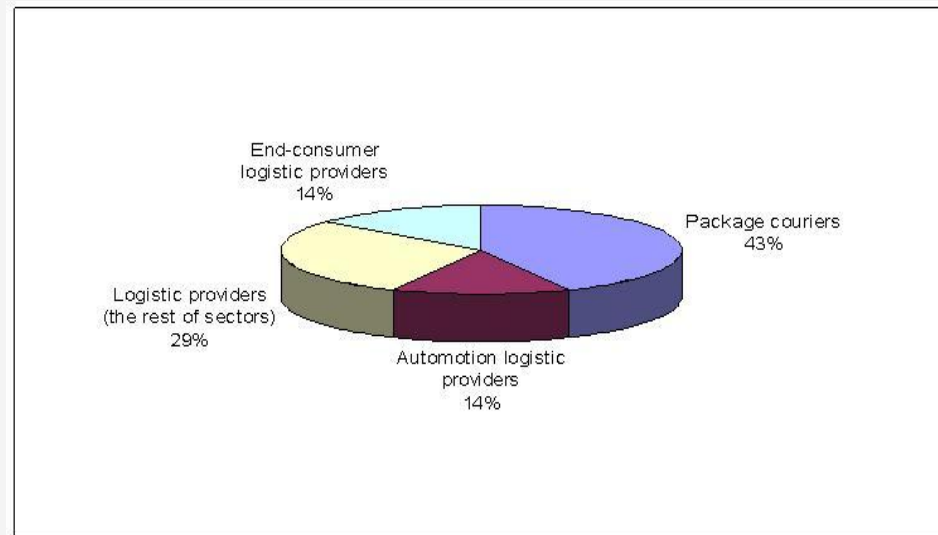
Description of the cases:



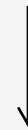
3. METHODOLOGY

Empirical research

Description of the cases:



35 firms



14 firms

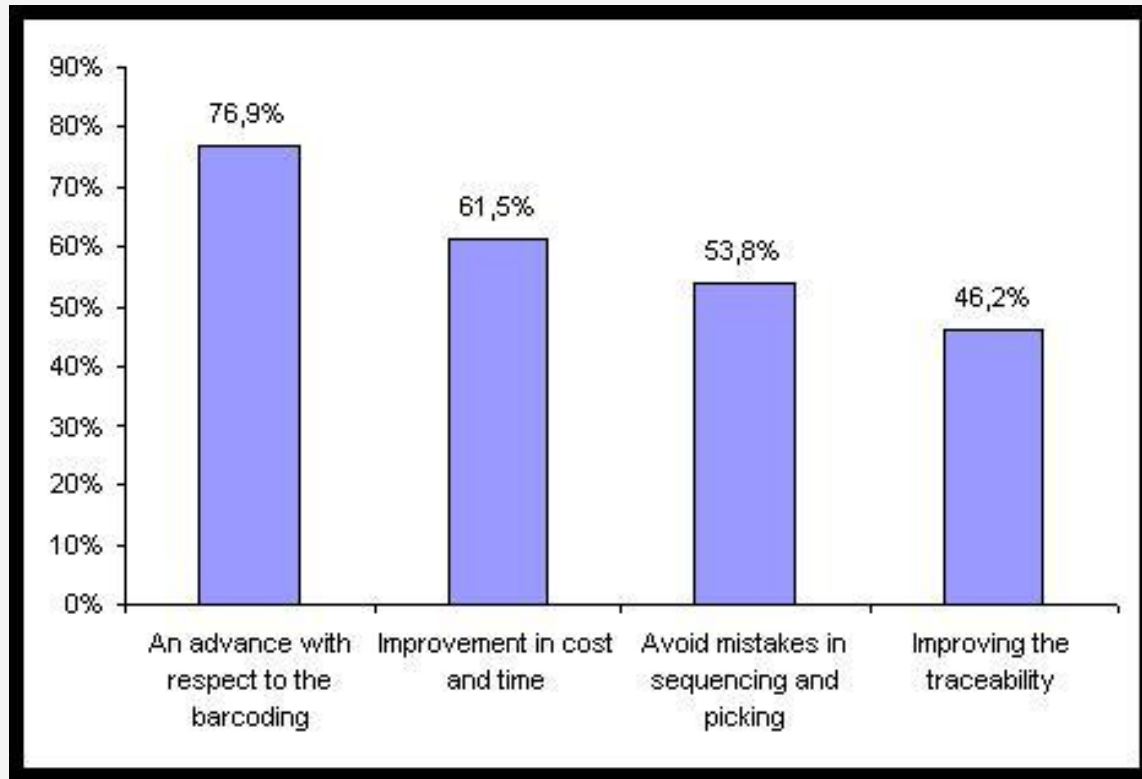
4. DATA ANALYSIS AND FINDINGS

(a) Degree of knowledge and implementation of RFID

- Imprecise understanding of RFID
- Source of ideas: internet, colleagues, press, trade fairs
- Useful tool to gain competitive advantages

4. DATA ANALYSIS AND FINDINGS

(a) Degree of knowledge and implementation of RFID



4. DATA ANALYSIS AND FINDINGS

(b) Key processes within the activities of logistics operators where RFID technology in logistics operators

Logistics activity	Type of firm	
	Packaging-courier	Warehousing logistic firms
Incoming goods	Important	Important
Warehousing	Residual	Key
Picking	Not applicable	Key
Truck loading	Important	Important
Inventory control	Key	Key
Management of pallets	Not important	Not important

4. DATA ANALYSIS AND FINDINGS

(c) Relevant factors that make RFID be a tool to get competitive advantages for a third logistic provider

- Companies whose strategy is to use technology as a differentiator with competitors. In the case of RFID, they can offer valuable services to their customers or responding to requests from customers who now cannot give.

4. DATA ANALYSIS AND FINDINGS

(c) Relevant factors that make RFID be a tool to get competitive advantages for a third logistic provider

- Companies that handle large volumes of product, but with few references, where cargo is handled by boxes or pallets. This allows the identification be achieved using relatively few labels (low cost to many units of similar product).

4. DATA ANALYSIS AND FINDINGS

(c) Relevant factors that make RFID be a tool to get competitive advantages for a third logistic provider

- Companies that handle food and where the durability of products is a very important variable to consider and ensure traceability systems
- Companies need to provide and/or maintain data on real time inventory for its customers (eg, customs, packaging)
- Companies where inventory control is a requirement arising from the operating system used

5. CONCLUSIONS

RFID may be considered a profitable tool for individual firms, but its relevance grows when agents integrate in a supply chain

In 2011, the use and degree of knowledge of RFID was very low by logistics operators

6. FURTHER RESEARCH

- To update the project and determine the actual use of RFID in the same firms
- Are there alternative technologies to RFID?