

Romain Le Moal - Visibility in transit - Assignment 1

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Using case studies critically evaluate the application of asset tracking technologies in the movement of goods and people.

Service Logistics (M6X01294)

Romain Le Moal / Logistics & Supply Chain

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I- Introduction

For about ten years now (especially since the technological revolution), we can see that new technologies have totally changed the way we live and, indeed the way we work. This represents a real step forward since it allow us to be much more efficient in everything we do (speed of execution, efficiency...). 1

The transport sector is obviously one the most affected sectors, thanks to this, it is now possible to organize and monitor the transport of a good or a person in a much more precise way. This process is called “tracking”.

To give a simple and clear definition of this term: it refers to a service offered by certain carriers, the purpose of which is to constantly track the route of a package with a simple internet connexion. 2 With this technology, you can follow a delivery from a point A, to a point B, and this, at any moment. It. This will allow customers to know exactly when their package will be delivered. There are therefore a multitude of tools means allowing this traceability (both for people and goods), and all of them operating in a completely different way. (RFID, EDI...).

In this assignment, 3 I am going to present a list of the different existing tracking technologies. To achieve this, I'd start by giving definitions of those tracking technologies; and then I would talk about their advantages their inconveniences, using as an example in each situation, a case study in which the tracing technology is used.

II- Tracking tools

A-RFID

⇒ Definition

The Radio Frequency Identification is a tracking technology which does not require any physical or visual contact and which permit to identify of a precise and unique way the person or the object that carries which is called “a label”. A label is a sort of electronical fingerprint of a product or a goods. Unlike a barcode, they are magnetic waves or radios, used during this process (invisible waves). RFID technology is relatively old because she made her appearance during the second world war. Indeed, it made it possible to identify aircraft entering in the British airspace. As a result, it became a real boom in the 2000's.

It is possible to detect three main sorts of RFID's technologies.

- Passive tag: Like our access cards in the university, the passives tags only answer to simple questions, has request from a reader.
- Battery assisted passive tag: They records some informations with sensors. For example, the temperature during a transport to verify if the cold chain was respected. It's a mix between the active and the passive one because the BAP has an intern battery which increase the range of the signal (100 m)
- The active tag: They made their own signal and send regularly some information. Unlike the other two, it does not need a transmitter.

⇒ Case study

As an example, that includes RFID tracking technology, I would like to talk about a project in which I participated during previous diploma in Logistics and Transport in France was called QUALHUMET. Indeed, I was able to be an integral part of an association whose main objective was to send school goods to Tunisia by container. (School books, furniture...). After collecting all these materials from surrounding schools, we had to take care of the entire transport part. So we contacted a marine carrier with whom we contracted, the rental of a 20-foot marine container. The latter was then equipped with an RFID chip that allowed us to track it from the loading site (Quimper - France) to its unloading site (Hammamet - Tunisia).

The tracking system was simple: we had our container number (previously given by the carrier company) and we had to connect to the website www.marinetraffic.com. So we could at any time know the exact location of our container and in fact inform the recipients of the arrival date of the goods for a more efficient organization of the routing of the container to the end village. So, it was active RFID because a signal was constantly emitted by the chip within the container, which was received by a much more powerful HUB that relayed the exact position of the boat to a third-party relay. Later on, it was the role of the traffic navy to take care of processing all this information so that we could use it properly.

⇒ SWOT Analysis

- Threats:

- The constant technological evolution could make this technology rapidly obsolete. That's why it is always necessary to find new ways to keep RFID tags up to date: For example, installing larger batteries with longest ranges or with a bigger autonomy

- Weaknesses:

- Without an exterior actor (most of the time, a person that point the label with a scanner or something else), the Passive and Semi-Active RFID tags can't work correctly.
- The RFID readers which allows to read those signals are really expensive (between 10 000 to 20 000 dollars for a reader)
- The semi active and the active signal are really limited: less that 100 m
- There has to be two entities to use passive RFID tags: a signal emitter and a signal receiver)

- Opportunities:

- There is a growing demand for the RFID technology due to the fact that is now essential, for a company who wants to be competitive, to ensure a good follow-up of these goods or products.
- The RFID readers prices may decrease as a result of this growing demand, which could allow small companies to invest in this technology.

- Strengths

- The RFID tags allow for easier logistics and the information storage (more efficient, faster)
- Extremely simple to use and implement. This does not necessarily require a high level of technical knowledge.
- The fact that there is no battery allows a long service life.
- The fact that its price is very low makes this technology, affordable to everyone: mall, medium and large companies (Passive RFID)

B- GPS

⇒ Definition

Global positioning system is using with the main objective, to determine the precise position of an object or a person on the ground with the USA's satellites. This technology was like, RFID, first used by the military force, but at a different moment: in the 1960's. We can, considerate the GPS technology like omnipresent in our life because it is possible to find it everywhere around us (in our cars, our smartphones or in the connected watches...).

The GPS technology work in a very simple way. The receiver will convert a signal from at least 3 satellites to a precise geographical position (latitude, longitude). This is how some transport companies will take care of tracking deliveries or others.

⇒ Case study

As a case study, I would like to take as an example, a transportation company called « Tremblay », in France, this is a company with which I was able to collaborate when I worked on a stockpile/warehouse in the Castorama store (already in France).

Indeed, I had the opportunity to spend several days with a delivery driver belonging to Tremblay but who was attached to Castorama. It was during these various days with him that I was able to see that all the delivery trucks were equipped with GPS technology. The operation was very simple, a transmitter was installed in the vehicle engine, which allowed tour managers and organizers to know in real time the progress and status of a delivery. This beacon indicated by GPS signal whether the truck was moving or stationary, and where exactly the truck was located. This technology has experienced a real boom in both private individuals and workers.

⇒ SWOT analysis

- Threats:

- For certain GPS beacons, everyone can have access to the signal because there is a lack of safety. Indeed, with a minimum of informatic knowledge it is possible to have access to a vehicle's journey. Outside of the transport sector, this dependence also affect a large proportion of weapons such as bombs and missiles with GPS guidance. Some countries are obviously seeking to take advantage of this weakness to use it to their advantage. This could therefore have major consequences for the security of some states (in particular the United States of America).

- Weaknesses :

- The greatest weakness we can detect with the gis is its battery operation. Indeed, the autonomy of most gps beacons varies between eight and twelve consecutive hours, which is not very advantageous when it comes to following a transport longer than this duration. They therefore consume a lot of energy because they constantly calculate data (optimal path, exact position...) which is highly energy consuming.
- However the signal is unable to pass through certain structures (under the water, dense canopy of trees.).
- Absolute miniaturisation isn't possible because to get a good signal, the beacon must remain quite large. It is therefore not possible to place the tag at any location.

- Opportunities

- The further we go in time, the more infallible this technology becomes. In the long term, it could lead to new intelligent transport modes (autonomous transport) and, in fact, to the creation of new jobs via this new generation technology (maintenance technicians, webcam controller, etc.). Increasing the accuracy of GPS beacons could therefore lead to a revolution in the world of transport but also in the world of business in general.

- Strengths

- One of the biggest asset of the GPS technology is the real precision. It is now possible to determine the exact position of a vehicle and this, to within ten meters.
- The speed is another important point because it makes possible to know at any moment, the location of something, or someone. For example, we can react instantly to an anomaly, (like a vehicle failure).
- The low cost of this technology representent the most important streght i think because a GPS beacon does not cost anything for a transport company, most of the time, the beacons are generally included in the purchase of the vehicle. The fact that is does not require a receiver makes it a relatively simple technology to, use. Indeed, everyone can use this technology: for exemple young people use it a lot with their smartphones.

C- QR code

⇒ Definition

The acronym QR code means "Quick Response Code", it is a much more advanced barcode. Indeed, unlike a barcode which contains 10 to 13 characters, a QR code can contain at least 7000 characters and has a much wider scope of application? First initiated by the Japanese company "Denso wave" in 1994 (manufacturer of electronic components for the automotive industry), with the objective of facilitating the circulation of products within the production chain (to be able to follow them in a simple and fast way. It was released for free circulation in 1999 and is now almost as widely used as its predecessor, the bar code. Its operation is simple, it is enough with a QR code reader available for download on his phone or tablet, to place his camera in front of the code so that it redirects us to:

- A website
- A video
- An access map
- An email address
- ...

⇒ Case study

As an example of the use of the QR code in the logistics and warehousing sector, I would like to talk about its implementation directly on the products and goods offered by the company (case seen on the Internet) and to what extent this could facilitate warehouse management, and it would then be possible to assimilate its use to that of RFID (technology mentioned above). This technology could become the most widely used thanks to its great ease of use.

Indeed, the QR code could become beneficial mainly for the customers of a store since in some cases customers use their phone to scan on their own, they could use their phone to scan product codes. This then gives them directly the invoice and information on the product (nature, weight, quantity...).

This procedure is therefore faster for the customer because he is the last, with a single gesture, to all the information he wants. For the store this is effective, because it allows them to have a clearer organization. and then she went straight into his system.

⇒ SWOT analysis

- Weaknesses

- As soon as the QR code is printed on a package, it becomes extremely vulnerable to various elements such as weather (rain, wind...) or handling problems. In fact, like the barcode, as soon as the code is a little damaged, it becomes impossible to access the continuous information inside the code. It is therefore necessary to protect it well before each delivery.

- Strengths

- Unlike most similar technologies (RFID, barcode...), the QR code has a large storage capacity and therefore it can be used in many more situations.
- In addition, this type of code can be used in many more sectors that for example generate a large amount of waste and dust because as soon as the code is incomplete, it is always possible to read it (as long as it is complete).
- The fact that it is in use represents a real advantage, particularly in terms of safety. Indeed, from the moment the latter is scanned once by the person who receives the coin, his company will be the only one to know the content of the code.

- Threats:

- The only threat I was able to identify was related to malicious people. Indeed, a person with dishonest intentions could use this technology in such a way that a code is totally diverted from its primary function. It could eventually implant a virus into an information system.

- Opportunities

- In the future, it is possible that all other tracking tools will become obsolete, mainly due to the extreme ease of use of the QR code, as well as its large storage capacity. There is therefore no knowledge to have to use it, which is what the most suitable and easy to assimilate means of tracing does

III- Conclusion

To conclude this mission, we note that, in recent years, the traceability of goods or people has been an important part of logistics and transport, both nationally and internationally. Indeed, we were able to talk about the two most common transport tracking tools: RFID and GPS, which allow us to track the progress of a delivery or a journey in real time. In addition, we were able to discuss the issue of tracking goods in a warehouse or store using QR code technology. It can therefore be seen that it is possible to find these traceability systems in the vast majority of sectors. The latter have opportunities and strengths, but also weaknesses and threats, which will be analysed and improved in the coming years thanks to the increasing development of new technologies. Traceability is therefore a real challenge.

After talking about the usefulness of these technologies, it is necessary to address our dependence and their impact on the way we live and work. Could we work and progress effectively without these tools constantly at our side?

IV- References

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GRADEMARK REPORT

FINAL GRADE

54/100

GENERAL COMMENTS

Instructor

Using case studies critically evaluate the application of asset tracking technologies in the movement of goods and people.

Your submission should be in the form of a report with a target word count of 2,750 words (+/- 10%).

Assessment Criteria:

Critically evaluate the extent to which the logistics industry have adopted joined up information technology solutions with regard to the movement of goods and material.

Word Count 2558

Your assignment would have benefited from the claims within were supported by evidence.

The term critical evaluation means simply to look at something from a different point of view supported by evidence, which was lacking in this assignment.

In your bibliography/reference section you have relied exclusively on internet sourcing, which lacks academic rigor and the date and time the site was accessed.

You could have used as one of your references:

Commission of the European Communities COM (2007) 96 Final. Radio Frequency Identification (RFID) in Europe.

Which would have explained RFID much simpler.

Logistics and Transport Focus Vol 6. No5 June 2004 pp32-42

RFID Demystified. Part 3 Company Case Studies Wilding & Delgado (2004)

Whilst a don't disagree with the work you have presented on RFID etal, it is not a critical evaluation.

	Grade
RIL	42.9%
K&U	71.4%
Analysis	42.9%
Prac	
Skills	57.1%
Total	53.6%

Could have been much better

PAGE 1

PAGE 2

PAGE 3



Comment 1

Evidence



Comment 2

connection



Comment 3

Third person

PAGE 4



Comment 4

which



Comment 5

she??



Comment 6

Where did this definition come from??



Comment 7

BAP means what to the uninitiated??



Comment 8

So how does pass the information??

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