

CHAPTER 1: The environment of Last Mile Distribution logistics

UNIT 1: Scope and definition of Last Mile Distribution Logistics

Capsule 1.1.2

A bit of history...

To be done prior to this capsule:

1.1.1

Capsule linked with:

1.1.1

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Objectives of the Capsule

In this capsule learners will gain a brief historical overview of the evolution of logistics delivery, since the ancient time up to latest evolution requirements of the 21st century, brought about by technology.

Category	E-learning	EQF		
		4	5	6
		X	X	X

Exercises included	YES
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Effort for the capsule	Content 20 Minutes	Exercises 5 Minutes	Extra Material 20 Minutes
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Contents

1. Not a 21st century novelty
2. The 21st century innovation
3. From the traditional last mile to the latest LMD model

1.1. Transport in history: objects that ancient populations traded



Relief portraying a Phoenician merchant ship, IV century BC



Two Phoenician coloured glass vessels. 5th-3rd century BCE. (Museum kunst Palast, Dusseldorf)



Pair of gold earrings with cage and ball pendants, 7th–6th century B.C. (MET Collection, NYC)



Glass double head pendant, 5th century B.C. (MET Collection, NYC)

1.2. Thanks to transport, goods become useful

Transport makes it possible for people and goods to move from where they are to where they wish or should be.

Thanks to transport, people become more useful and good increase their value

Resources increase their value

We have transport demand because the allocation of goods and services is non-homogeneous.

For this reason, we have transport infrastructures: ports, roads, tunnels, bridges, canals, airports etc.

1.3. Last mile couriers in the past

Last Mile Distribution as we know it actually began in the Roman Empire, where «Cursus Publicus» was established, the state supervised courier service. Over time, this concept evolved into each country at first having a dedicated courier/postal company which was state owned, followed by the establishment of private courier companies.



The **Tabula Peutingeriana** is an illustrated map, showing the *cursus publicus*, the road network in the Roman Empire, currently kept in the City Museum of Ljubljana, Slovenia

2.1 Last mile delivery in the modern era

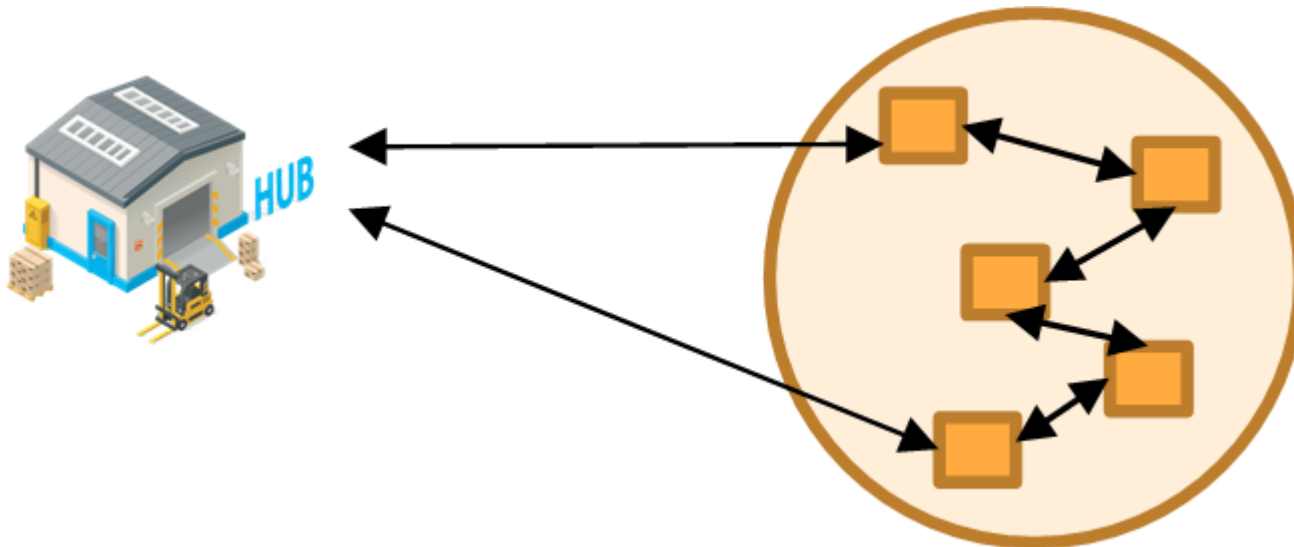
According to military tacticians, during WWII the U.S. was successful in European and Pacific missions thanks to the large inventories of supplies such as ammunition, clothing, food and vehicles, and the ability to organize storage and transportation operations to move vast quantities of supplies in an efficient, quick manner to the battlefield, to support military strategies.



Next step in the competition was to take the game to a global level and hence we witnessed the transformation of global companies like DHL, FEDEX and etc. For these global companies, the 20th century was all about expanding their footprint across the world.

2.2. Concept of last mile delivery

This image represents the meaning of **last mile delivery**: the last leg of transport, usually within the urban environment. The goods are first transported from the nearest distribution hub, to the final destination, that could be a business or a home. Then, last mile delivery takes place over the final part of the trip.



Last mile delivery

2.3. Impact factors of modern Last Mile Delivery

Impact factors of 21st century LMD are **time**, **speed** and **cost**, becoming tradeoffs and variants of an effective service.



More factors nowadays impacting LMD are:

- exponential increase in volumes of parcels & packages shipped everyday
- urban congestion, low-traffic zones or times, load/unload areas...determining high complexity in traffic routes planning
- urgent or high priority delivery (same day or even in 12 hours or 60 minutes)
- high season demand (Christmas, Black Friday...)

Intermediary self-evaluation quiz

Which population established the first LMD model in western history?

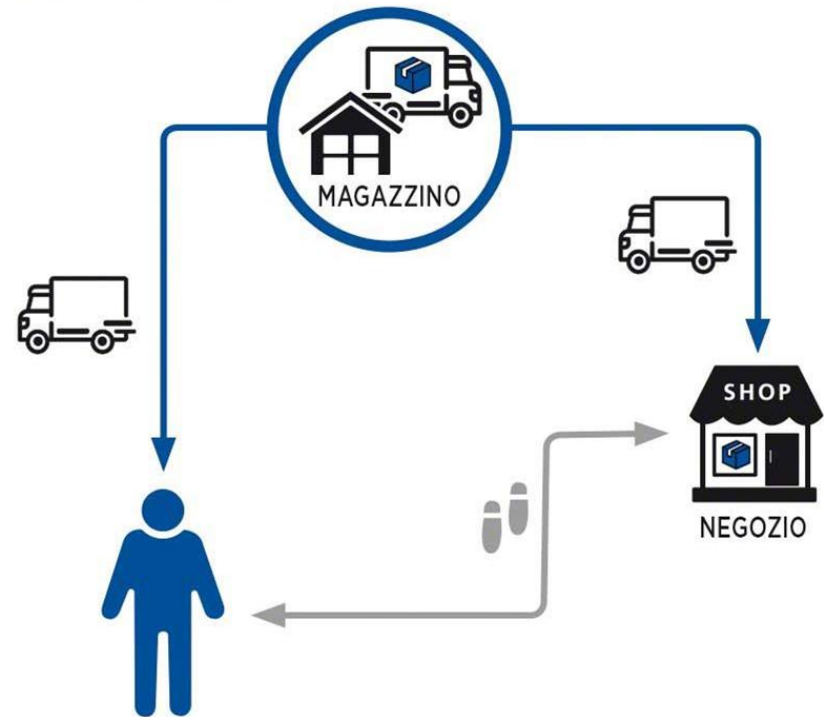
- ☐ 1. African Tribes
- ☐ 2. Ancient Romans
- ☐ 3. Ancient Greeks
- ☐ 4. Balcanic Populations



3.1. From the traditional Last Mile to the latest LMD model (1)

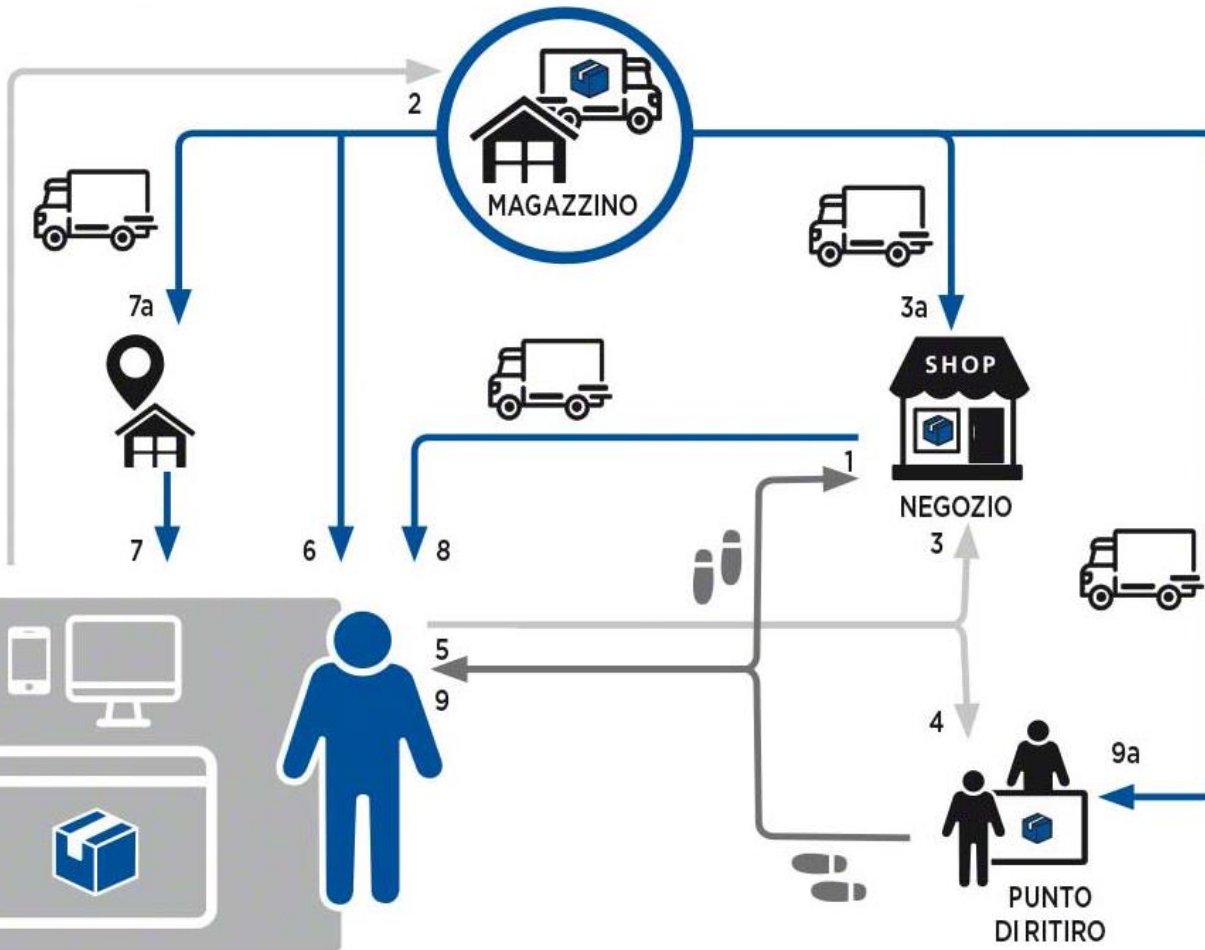
- In the second half of the 20th century, there was a rise in number of the major big courier companies.
- The model was quite simple and linear: a production company uses trucks (or ships or, less frequently, aircrafts) to ship finished products from the site plant to the main warehouse, either located in-town or out-of-town.
- From there trucks shipped retail products to local shops, where the final customer was used to go and purchase finished goods.
- There was no real alternative to such pre-determined and quite predictable model. Production planning and supply chain were based on linear predictions of items demand.

LAST MILE TRADIZIONALE



Images is property of Mecalux
<https://www.mecalux.it/blog/last-mile-logistica>

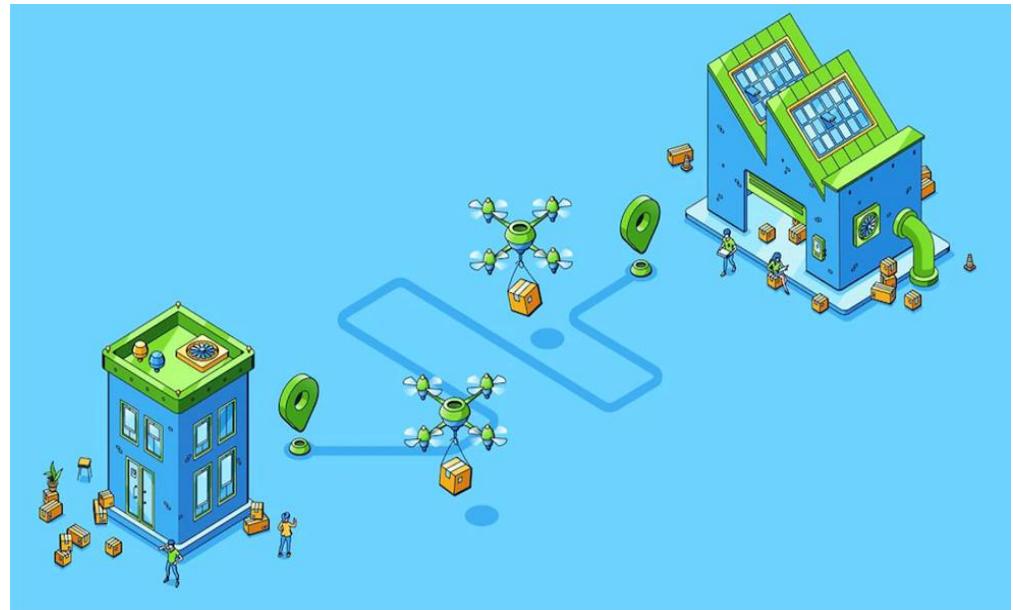
3.1. From the traditional Last Mile to the latest LMD model (2)



- 1-In shop purchase
- 2-Order sent to warehouse
- 3-Online order for shop
- 3a-Order delivery to shop
- 4-Online Order
- 5- In-shop collection
- 6-Warehouse delivery
- 7-Delivery from the urban hub
- 8-Delivery to the urban hub
- 9-Collection Point
- 9a-Delivery to the collection point

3.1. From the traditional Last Mile to the latest LMD model (3)

- Looking at the previous slide it is possible to understand the increased complexity of the LMD scenario in 21st century urban context.
- Parcels are both delivered and collected in multiple urban sites: collection points, hubs, warehouses and shops.
- Final customers have multiple choices about where to have their goods delivered.
- Among the most recent technologies for delivery we have to think about unmanned vehicles such as drones, capable of collecting small and light packages from a pick up site (warehouse, urban hub) and to ship it to the final user's end (either a private address or a collection point).



Capsule's validation quiz

The following quiz represents 5 questions you will have to answer to confirm your understanding of the present capsule.

Each correct answer is worth 1 point. No point for errors.



Self-evaluation quiz

Question n°1 :

Which is the correct time sequence for LMD development?

1.State owned public delivery service – Private Companies

2.Ancient Romans – State owned public delivery service– Private Companies

3.Private companies – State owned public delivery service

4.Private companies - E-commerce implementation

Self-evaluation quiz

Question n°2 :

What are the most important impact factors on LMD in 21st century?

1. Personnel shifts – Shipping company – Delivery vehicles

2. Weather conditions – Traffic routes – Rural areas

3. Target customer – Type of Item - Brand

4. Time – Speed - Cost

Self-evaluation quiz

Question n°3 :

Which of the following is true:

1.LMD is only about e-commerce delivery

2.Traditional LMD goes from company to warehouse to customer

3.In the 20th century multiple collection points and unmanned delivery vehicle were used

4.The 21st century LMD model is linear and easily predictable

Self-evaluation quiz

Question n°4 :

In 21st many new LMD factors emerged. Please identify the one that does not apply.

1. Same day delivery

2. Shipping import/export goods

3. Season peak delivery (e.g. Christmas)

4. Increased volumes of orders

Self-evaluation quiz

Question n°5 :

Which from the following factors apply to the 21st LMD Model?

1. Warehouse delivery

2. Collection point delivery

3. In-shop delivery

4. All of the above



Validate and quit capsule



References

- (1) Akhai, A. (2020). The evolution of last mile logistics. *Medium.com*. <https://medium.com/@aliakhai/the-evolution-of-last-mile-logistics-f7e273c20922>
- (2) Mecalux Italia Srl (2019). Last Mile: definizione, caratteristiche e strategie per gestire la logistica dell'ultimo miglio. <https://www.mecalux.it/blog/last-mile-logistica>
- (3) Dallari, F. (2015). *Corso di Logistica e Trasporti*, Vol.1, 2 e 3. Hoepli.