

CHAPTER 3: Trends for more effective LMD logistics

UNIT 4: Improving logistics' effectiveness and impact

Capsule 3.4.1

Optimising urban logistics operations

To be done prior to this capsule:

Several definitions will be needed to understand the stakeholders' environment and lexicon; elements are available in Chapter I, units 2 and 3.

Capsule linked with:

The knowledge provided in this capsule is complementary to capsules 2.2.1, 2.2.2, 2.2.3, 2.2.4, 3.1.1.

Authors:

AFT, SUSMILE consortium member

Objectives of the Capsule

Urban logistics has more constraints than long-distance logistics or operations from raw material suppliers to industrial players. Optimising the flow of goods that reach the very last kilometres within the city is essential for both cost control and customer satisfaction.

This capsule is intended to summarise the benefits of such work, through various means or methods and examples.

Category	Document, source	EQF		
		4	5	6
			X	X

Exercises included	YES
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Effort for the capsule	120 Minutes
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Content of the Capsule

1. Mastering information on delivery targets (BtoB or BtoC)
2. Working on predicting demand and operations
3. Implementing a system and a fleet adapted to operations
4. Defining indicators of performance that are adapted
5. Reducing as much as possible dissatisfaction and returns

Instructions for the Capsule

You will find attached to this Capsule several documents:

1. SUSMILE synthesis of the various case studies and document sources attached, and the reason why we selected these examples
2. Case study documents, presenting a specific situation and the rationale behind their logistics optimisation, for a specific activity and products

IMPORTANT:

Other case studies may be more adapted in the future with more recent data and more innovative operations to suit the needs of urban logistic demand. We invite you to keep watch for those updated reviews that may bring additional value to this SUSMILE MOOC content.

Also, the content of this capsule is quite exhaustive and ambitious, to give an idea about various optimisation strategies on top of existing logistic techniques, dedicated to urban environment. Teachers may want to select only few of the examples depending on the level of their students and timing available.

Source 1 – SUSMILE Synthesis

This document is meant to present briefly the case study for this Capsule:
“Optimising logistics operations for urban delivery”

It is important to keep in mind that most external sources were not directly designed for this MOOC, so the content selection may be a limited section within the information sources. We recommend that EQF level 4 students skip the S3 document which may be too complex for them.

Please note it may be time-related as the initial production of this synthesis was done in 2022 and new technologies, practices or company models may have merged in the years to come.

The aim of these sources is to invite students to put the theoretical elements into perspective and to understand each private sector model in order to cope either with its environment, competition, etc.

Source 2 – Information sources S2: online articles

Antsroute.com (2021, June), “The top 5 methods to optimize last mile deliveries”

<https://antsroute.com/en/solutions/5-methods-to-optimize-last-mile-deliveries/>

Article in English

Summary:

This blog article from a logistics service provider presents 5 key aspects that tend to improve last mile logistics operations, regardless of sector and product type. Although we are not concerned with the solution they aim to sell to companies involved in urban delivery, it is interesting to look at the indicators chosen, and the potential results guaranteed by this type of service provider to optimise the operations of last mile delivery.

Another service provider using this approach that can be compared with this proposal (Bringg.com - 2022, "6 steps to optimising the last mile of parcel delivery"):

<https://www.bringg.com/blog/delivery/6-steps-optimizing-last-mile-parcel-deliveries/>

Source 3 – Information source S3: document attached

Alessandro Crivellari a,b,* , Euro Beinat a,c, Sandor Caetano d, Arnaud Seydoux d, Thiago Cardoso (2022), "Multi-target CNN-LSTM regressor for predicting urban distribution of short-term food delivery demand"

Document in english

Summary:

The document is a research output from professors that have tried to modelise the food delivery market in urban environment. This market has increased rapidly in the last few years, becoming a well-established reality in the business world and a common feature of urban life. Food delivery platforms provide the end-to-end services that connect restaurants with consumers, including the delivery service to those people ordering food through an online portal. The results disclose a better performance over baselines and more traditional statistical approaches, demonstrating a promising implementation potential within an online delivery platform framework.

Source 4 – Information source: document S4 & online article

DispatchTrack.com (2021, December), “Last Mile delivery optimisation: 3 key steps and 3 must-have”

<https://www.dispatchtrack.com/blog/last-mile-delivery-optimization-steps>

Blog article and document in English

Summary:

This paper details how a software provider could contribute to better logistics performance in last mile delivery through increased and real-time data analysis. As with other logistics flow processes, it is a matter of better controlling most information and operations to focus on the exceptions in order to gain efficiency.

The blog article emphasizes on key aspects of data management, which is the providers' expertise but also a specific concern of logistics efficiency in general.

Exercises

Questions are mentioned in the second part of the Source 1 document.

Indications for the answers expected are limited, in order to allow teachers adapt their messages or develop further some of the information available with their students. The objective of this capsule is to invite them formulating a synthesis of the key messages and be able defending them.

Some questions are related to each of the case studies, then a suggestion of questions is made for both, depending on the teachers' will to challenge their students, especially for EQF 6 levels.