

25 years



LOGISTIC PLATFORMS

Objectives and a view of investment costs

Group of Experts on Benchmarking Transport Infrastructure
Construction Costs – Geneva, 10 & 11 July 2017

1. DEFINITION & DESCRIPTION

2. IMPACT IN THE LOGISTIC CHAIN. OBJECTIVE

**3. INVESTMENT CONSTRUCTION COSTS. TERMINOLOGY AND
DRAFT VALUES**

4. NEXT STEPS - BENCHMARKING

DEFINITION

WHO WE ARE



WHO we are



HOW WE ARE FORMED

There are more than 100 European Logistic Platforms involved

Three of the four countries with highest number of logistic platforms are members of Europlatforms

Proportionality north-South.

All the European Freight Corridors are represented

DEFINITION

EUROPLATFORMS EEIG approved the definition of a logistic platforms as:

“Centre in a defined area within which all activities relating to the transport, logistics and distribution of goods, both for national and international transit, are carried out by various operators on a commercial basis.”

(General Assembly, May 2015)

Key Characteristics

- It must comply with **European standards and quality performance** to provide the framework for commercial and sustainable transport solutions.
- It is important that it is managed in a **single and neutral legal body** (preferably by a **Public-Private-Partnership**), in order to ensure synergy and commercial cooperation.
- It must allow **access to all companies** involved in the activities set out above.
- The **operators** can either be **owners or tenants** of buildings and facilities.
- It must provide the required **facilities, equipment and services** to the users, as well as **public services** for the staff.
- It should preferably be served by a **multiplicity of transport modes** (road, rail, sea, inland waterways, air).

GENERAL APPEARANCE

Some of its key **“hard”** elements usually are:

1. Access control
2. Service area
3. Business centre
4. Transport & Logistics warehouses
5. Intermodal warehouses
6. Intermodal terminal

Others:

Inner roads

Green areas

Water and waste treatment facilities

Custom area

.....



DEFINITION

WHAT IS “NOT” A LOGISTIC PLATFORM

Broadly speaking:

- Those **generalist spaces** that are **not designed** nor managed for the specific needs and benefit of transport and logistics activities (e.g., industrial parks/zones where Transport & Logistics operators have traditionally set up their facilities just because of the lack of appropriate and tailored TLCs).

But in particular:

- Those infrastructures that **lack of a central management model** delivered by any public and/or private legal body for the benefit of the T&L companies installed within them.
- Those infrastructures and facilities that **lack of design standards** tailored to facilitate the development of transport and logistics activities.
- Those developments that include just a few warehouses and/or logistics facilities and therefore **lack of capacity/ambition** to generate synergies and contribute to the T&L sector improvement and modernization.

DEFINITION

LOGISTIC PLATFORMS AS KEY TRANSPORT INFRASTRUCTURES

Logistic Platforms usually **provide intermodality** between two or more transport means, being key in **facilitating** an efficient operation of the transport system and the associated supply chains.

➤ **Logistic Platforms' aim:**

- To facilitate both an **efficient modal shift** between transport means
- To make more **efficient flow of goods** between both the transport infrastructures and the specific logistics facilities (warehouses, etc.).

➤ **There are similarities between Logistic Platforms and Ports evolution:**

- Logistic Platforms are **much more than single and isolated logistics and/or transport facilities**, equally that Ports are much more than just individual Port Terminals.
- In both cases there is a need to develop and efficiently interconnect related economic activities both within the site and in the Hinterland/Foreland.



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Impact in the logistic chain. Objective

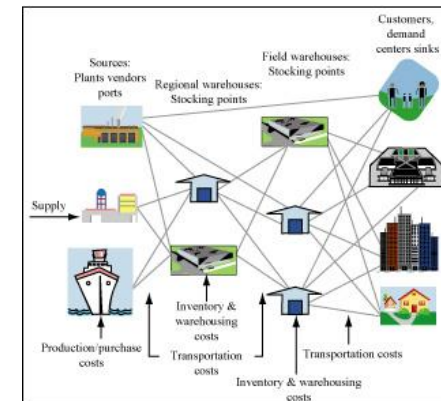
LOGISTIC CHAIN



A supply chain is a complex system of organizations, people, activities, information, and resources involved in moving a product or service from **supplier to customer.**

The decision of the supply chain route depends on each **company (costs!), not on the infrastructure or governments**

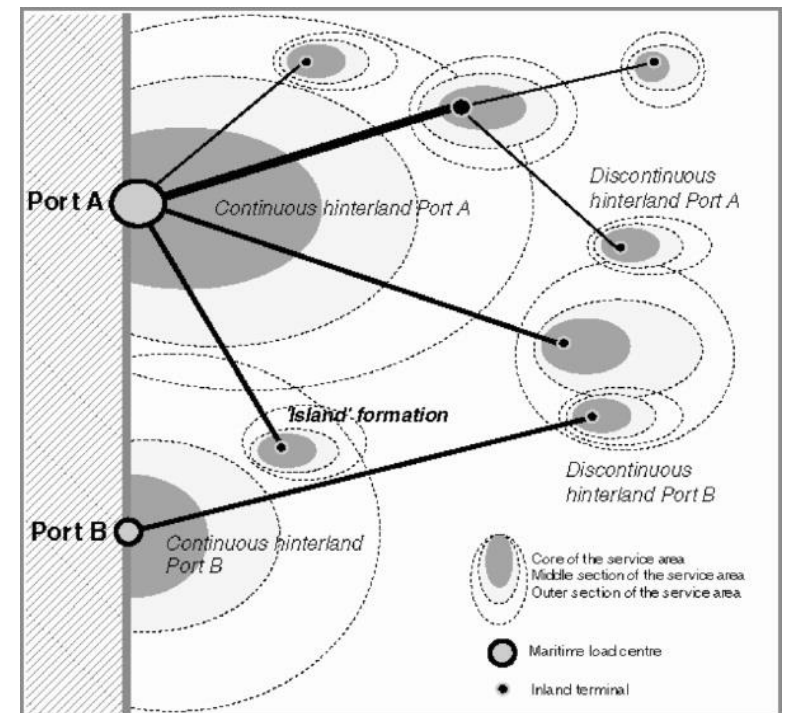
The objectives of transport infrastructure should be to make more efficient the hole logistic chain.



The most expensive infrastructure is the unused infrastructure

A VISION OF LOGISTIC CHAIN ANALYSIS

- In 2005, Noteboom and Rodrigue present a study finding the evolution of the hinterland, making, for first time the relationship between the hinterland of ports and **inland areas**.
- Organism start to think in expansions in other parts of logistic chain, specially sea ports, starting to:
 - Developing logistics areas
 - Developing road and rail infrastructures
- The transport infrastructure was configured as a spider web.



A VISION OF LOGISTIC CHAIN ANALYSIS

- Following this study, in 2014, Zhang defined the costs of a logistic chain as the next function:

$$TLC = TTC + WHC + TDC + TMC$$

Where:

TLC= Total Logistics Cost,

TTC= Total Transportation Cost: cost from origin to intermediate warehouse. Include: freightage, port management cost (cost of terminal, taxes, stevedore, etc.), border management cost (customs, inspections, etc.), and the transportation from the port to the warehouse (by road or by train with haulage)

WHC= Warehouse Cost: is the cost of the warehouse and associated services.

TDC= Total Distribution Cost: cost from the warehouse to the final point of selling.

TMC = Time Management Cost: cost related to time. There are two effects: the time as itself that affect to the value of the goods as a costs (minus value of goods) and the rotation time that affect to the needed warehouse.

A VISION OF LOGISTIC CHAIN ANALYSIS

Warehouse Costs. Details:

OPTION 1: OWN WAREHOUSE (Invest)

- Depreciation
- Financial costs
- Construction Taxes

OPTION 2: TENANT WAREHOUSE (rent)

- Rent cost

COMMON COSTS:

- Insurance
- Workers (salaries, clothes,...)
 - Equipment
 - Energy Supply
- Water consumption
 - Taxes
 - Maintenance
- IT costs (computers, telecom connection, etc)
 - Safety and Security

HOW CAN IMPROVE THE LOGISTIC PLATFORMS THE LOGISTIC CHAIN?

- Factors that could be improved with the logistic platforms

TTC= Total Transportation Cost: reducing the haulage. The logistic platforms allow to site the warehouse close to the intermodal terminal, reducing (even disappearing) the cost of the haulage.

WHC= Warehouse Cost: this is the key factor of logistic platforms. All the concepts of warehouse costs are affected by logistic platforms

TDC= Total Distribution Cost: as TTC, this costs is affected reducing the haulage to the intermodal terminal

TMC = Time Management Cost. Finding locations with good rotation of services, the logistic operator can reduce the needed warehouse.

THE ROLE OF LOGISTIC PLATFORMS

Logistic Platforms play a key role in:

- Providing **tailored infrastructures, facilities and services** to reduce the cost of commons services:
 - Security
 - Energy supply
 - Water treatment and supply
 - Associated services to employees: service area, car park, etc.
 - Associated services to transporters: gas station, truck park, etc.
 - Common IT services: access control, monitoring, etc.
- Securing a more efficient **connectivity** with the main local, regional, national and trans-European **transport networks** (TEN-T).
 - Reducing the supply rotation time, reducing the T&L operators needed warehouse
- Promoting the use of **intermodal transport solutions**.
 - Reducing the haulage, making easy the intermodal exchange.
- Fostering the delivery of **innovative and state of art T&L services** through the promotion and facilitation of specialist training and the use of new technologies.

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THE CONSTRUCTION COSTS OF A LOGISTIC PLATFORMS ARE:

1) Previous management.

- **Selection of the land where built the logistic platforms**
- **Determine the legal requirements to built the logistic platforms (environment impact, town planning and ordinance, archeological requirements, etc).**
- **Approval by all administration related to this development.**

2) Land acquisition

- **Buy or expropriate the land**

3) Construction project

- **Technical requirements:**
 - **Less than 2% of slope**
 - **Road should support mega trucks operations (two lines in each direction, with wide enough).**
 - **Road should support mega trucks weight (about 5 Tn/sq m)**
 - **Entrance to plots without any obstacle**
 - **Fiber optics to any plot**
 - **Energy supply connection to any plot (50W/m2 is commonly accepted in logistic areas)**
 - **Installation of Water treatment (or connection to a existing installation)**
 - **Green areas (as legal requirement said)**
 - **Other local requirements**

THE CONSTRUCTION COSTS OF A LOGISTIC PLATFORMS ARE (II):

4) Urbanization.

- **Prepare the carrying capacity of the land (depending on the land characteristics)**
- **Earthmovings**
- **Conduits (dark water, fresh water, energy supply, fiber optics, etc.)**
- **Roads**
- **Pavements (should allow the transit of mega trucks)**

5) Service installation and connections

- **Electricity supply (electrical substation is required in most projects)**
- **Dark water treatment plant**
- **IT connection (where operators or local legislation said)**
- **Fresh water connection (where supplier of local legislation said)**
- **Fire prevention network**

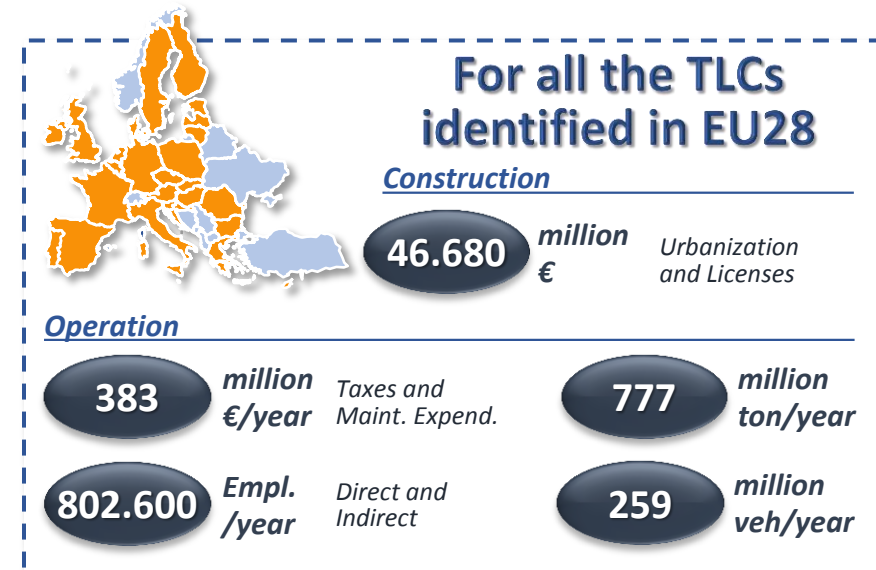
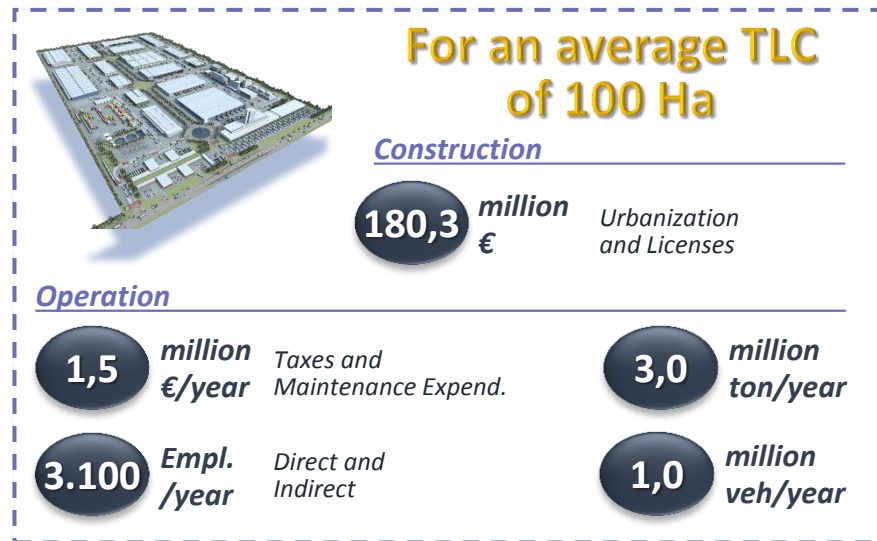
6) Common services in the area

- **Access control**
- **Office Building (can be done through concessioner)**
- **Truck park (can be done through concessioner)**
- **Gas station (can be done through concessioner)**
- **Restaurant/Bar areas (can be done through concessioner)**

Construction Costs





DRAFT VALUES:

In 2010 ACTE, Spanish Association of TLCs, carried out an “Economical, Social, Sectorial and Environmental Impact Study” for this particular sector in Spain, collecting and analysing real information provided by most of the TLCs in Spain. Based on that information, the study was able to identify and quantify a number of concrete unit impact ratios for the economical, social and sectorial dimensions. Should these unit impact ratios be applied to the case of TLCs in Europe, the result on the impact generated would be as follows:




Construction Costs

DRAFT VALUES:

Impact Ratio		Average TLC	Total EU25 TLCs
Concept	Unitarian value	100 Ha Impact	25.891 Ha Impact
Economic Impact - Construction (urbanization)		180.300.000 €	46.681.473.000 €
 - Investment in general urbanization and buildings	155 €/m ² _{gross}	155.000.000 "	40.131.050.000 "
- Investment in inner urbanization	20 €/m ² _{gross}	20.000.000 "	5.178.200.000 "
- Local revenues from construction licenses	5,3 €/m ² _{gross}	5.300.000 "	1.372.223.000 "
Economic Impact - Operation (local revenues)		1.480.000 €/year	383.186.800 €/year
 - Local revenues from land & buildings taxes	2,2 €/year/m ² _{built roof} *	880.000 "	227.840.800 "
- Local revenues from maintenance expenditure	0,6 €/year/m ² _{gross}	600.000 "	155.346.000 "
* Buildability: 0,4 m ² _{built roof} /m ² _{gross}			
Social Impact - Employment under operation		3.100 empl/year	802.621 empl/year
 - Direct	25 empl./Ha _{gross}	2.500 "	647.275 "
Logistics	14 empl./Ha _{gross}	1.400 "	362.474 "
Not logistics	11 empl./Ha _{gross}	1.100 "	284.801 "
- Indirect	6 empl./Ha _{gross}	600 "	155.346 "
Sectorial impact - Activity			
 - Cargo tones	3 ton/year/m ² _{gross}	3.000.000 ton/year	776.730.000 ton/year
- Industrial vehicles	1 veh/year/m ² _{gross}	1.000.000 vehs/year	258.910.000 vehs/year

Source: ACTE Spain (www.acte.es)

Construction Costs

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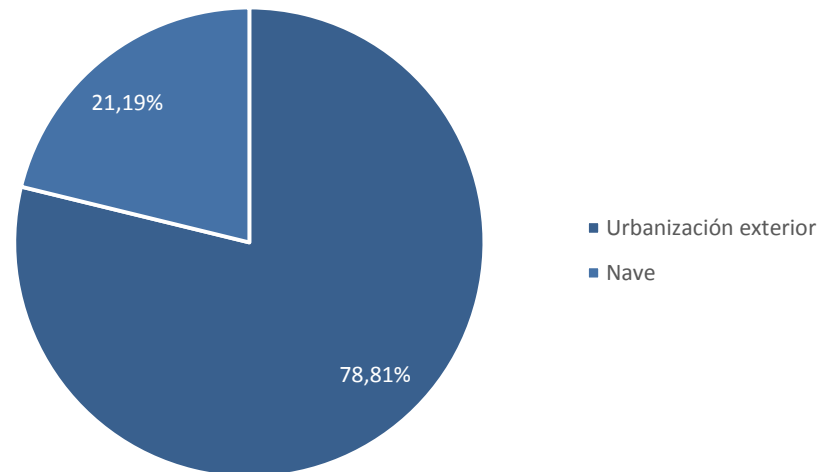
For each 100 € in investments in logistic area development (without buildings):

- **12 € is related to land acquisition**
- **53 € is related to roads**
- **26 € is related to urbanization costs**
- **5 € is related to service supplies**
- **3 € is related to taxes and licenses**
- **1 € is related to project and previous jobs**

Construction Costs

WAREHOUSE CONSTRUCTION COSTS:

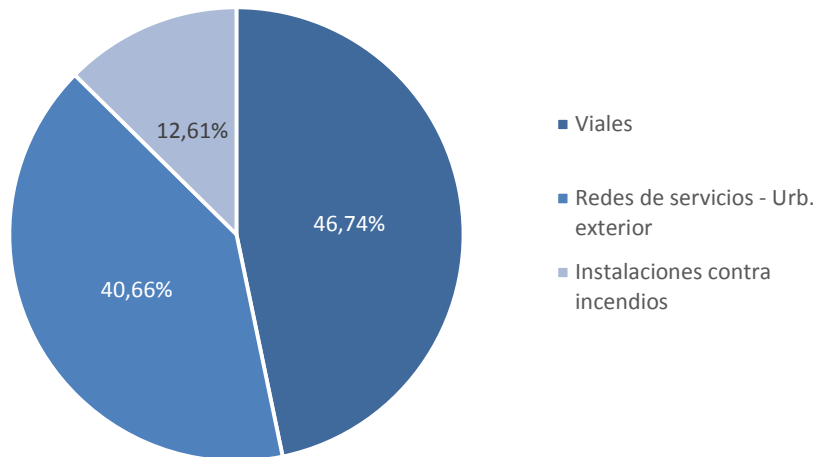
- **To develop a warehouse into a logistic platform it is needed to consider two different factors:**
 - **Warehouse costs**
 - Internal roads,
 - Structures
 - Internal office
 - Internal networks of services
 - Green areas
 - **External urbanization**
 - Connection to the external roads
 - Connection to the external services (water, energy, IT, fire prevention)



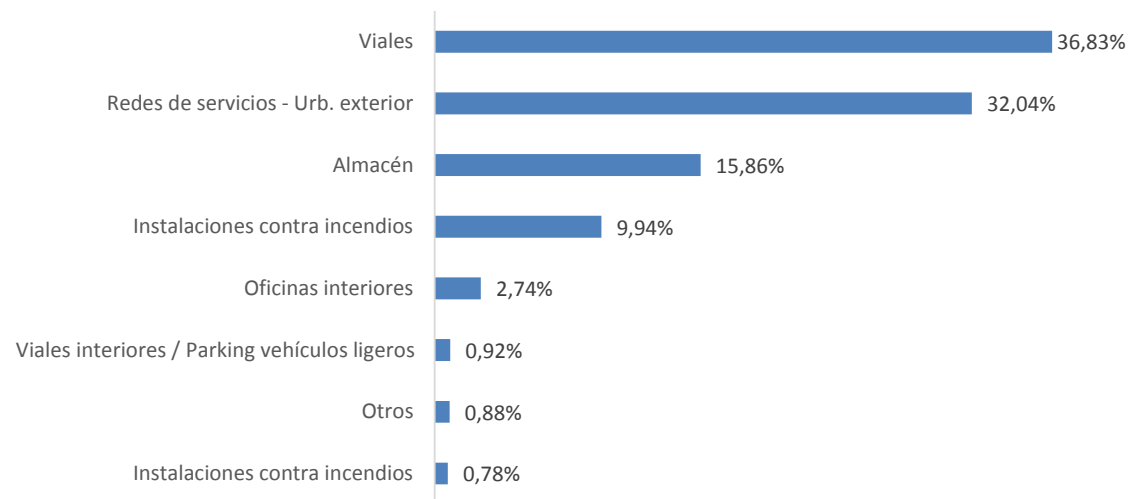
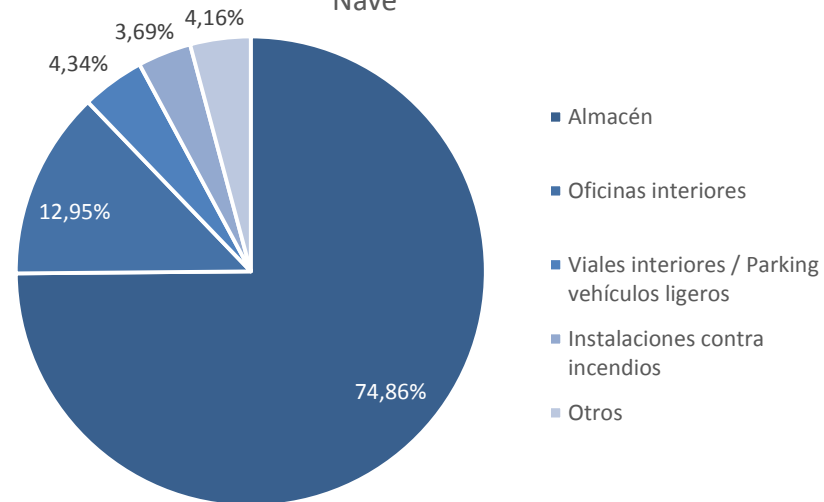
Construction Costs

WAREHOUSE CONSTRUCTION COSTS:

Urbanización exterior



Nave



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CONCLUSSIONS AND PROPOSAL FOR NEXT STEPS

- **The infrastructure construction costs depends on the land, as less carrying capacity it had, as more investment is needed to develop.**
- **But... the location can't depend on the carrying capacity, because the location must be selected by proximity to roads, railways, etc. A bad selection of the location can mean a failure of the future used of the logistic area.**
- **It is complicated obtain common data for all Europe. It is needed to start an European study to obtain standard information about the construction costs of logistics area.**
- **Several countries established an independent observatory of logistic and transport, excluding the information about construction costs of logistics areas and warehouses, despite of it is a basic infrastructure in the logistic chain. It is needed a common directive of costs. (Thanks to this group!)**



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