Analytics. Global, Manufacturing and Logistics KPIs

DIGITALIZATION ITINERARY IN LOGISTICS

INDEX

INTRODUCTION

This Training Programme is a product of the DIGinLOGS project, co-financed by the European Commission in the framework of the Erasmus+ programme, KA2220-VET - Vocational Training Cooperation Partnerships The output O1 "Training Programme" is to facilitate the acquisition of digital knowledge and competences for vocational training (VET) professionals in the logistics sector. This result 01 involves the development of the modules that make up the training itinerary defined jointly by the partners (01.2) derived from a report on the detection of the digital needs of the sector resulting from the qualitative and quantitative study of the partners' field (01.1).

Digitalisation in the logistics sector in Europe and worldwide is key to the interconnection of global supply chain flows. The management of the company will develop in a modular way, with the physical internet coming to the fore.

Although different European programmes are oriented towards the digitalisation of the sectors, the data collected in the partner countries of the project (France, Greece, Spain,) show the need to train teachers and trainers in digitalisation in order to adapt to the training needs in digitalisation demanded by the companies.

The training programme is the result of the different phases of work carried out by the consortium since February 2022 of the project. The first phase included an international observatory derived from surveys to companies, teachers of educational centres, trainers as well as different focus groups carried out in all partner countries and a study provided by INYCOM on the digitisation trends of the logistics sector. A final report is prepared with all the results provided by the different partners. In this same phase, an innovative and futuristic itinerary has been defined in order not to be outdated when the different training actions are implemented. The itinerary consists of four modules to be developed:

1. Company management
2. Physical Internet
3. Supply Chain Digitalization
4. Analytics. Global, Manufacturing and Logistics KPIs

Developed in the following unities:

Module			Unit	
nº	Description	Partner	nº	Title
M1	COMPANY MANAGEMENT	Action Sinergy	1.0	Module 1. Initial Chapter
			1.1	Digital Transformation and Strategy
			1.2	Composable Company
			1.3	Sustainable Networks
			1.4	Supply Chain Disruptions
			1.5	Module 1. Final Chapter
M2	PHYSICAL INTERNET	CIFPA	2.0	Module 2. Initial Chapter
			2.1	Physical Internet, Definition and Topics
			2.2	Horizontal Collaboration
			2.3	Systems & Technologies for Interconnected Logistics
			2.4	Global Supply Network Coordination and Collaboration
			2.5	Module 2. Final Chapter
M 3	SUPPLY CHAIN DIGITALISATION	AFT	3.0	Module 3. Initial Chapter
			3.1	Management And Optimization of Information Flows
			3.2	It Solutions for Logistics Operations
			3.3	Converting Business Models to New Paradigms
			3.4	Evolution & Complexity
			3.5	Module 3. Final Chapter
M 4	ANALYTICS. GLOBAL, MANUFACTURING AND LOGISTICS KPIS	INYCOM	4.0	Module 4. Initial Chapter
			4.1	Big Data. All Data Are Our Data
			4.2	Data Management
			4.3	Bi Tools
			4.4	KPIs. Definition And Design
			4.5	Module 4. Final Chapter

Once the itinerary has been defined, the structure of the training programme is agreed upon and the programmes of the four modules that make up the digitisation in logistics itinerary are drafted by the four partners, always trying to adapt them to the profile of the users that make up the target group to which the training actions are addressed.

OVERVIEW

Course Title Analytics. Global, Manufacturing and Logistics Kpis

Duration
30 hours of total work
Level
Level 5 EQF according to the European Lifelong Learning Framework

Recipients

Teachers and trainers of logistics sector

Objective:
The main objective of the course is to improve digital competence in logistics by knowing the systems and technologies of interconnected logistics.
The training program is available in four languages: English, Greek, French and Spanish.

Competencies standard

The participant be able:

- To analyze the knows and applies the techniques for the automated analysis of decision-making, the management of business processes and the different information systems and social networks that can be used for the creation of Value.
- To understand the optimal structures for data management and governance, as well as establishing the relationships between the different sources of information and the business processes in the logistics value chain.
- To learn about the different tools that exist on the market and to be able to differentiate their potential use based on the processes and types of data that must be covered.
- To define the correct indicators, KPIs, associated with logistics processes 5.0, in such a way that through this data information can be generated, which helps decision-making at a strategic, tactical and operational level throughout the logistics chain.

Participant profile
After the training, the participant will have knowledge, digital skills that can be quickly verified and used in practice. It is based on a theoretical knowledge of new technologies and systems that facilitate the interconnection of logistics. It will provide a solid foundation for future activities related to digitalization in logistics both nationally and internationally. The participant will be aware of and familiar with the systems and technologies that facilitate the interconnection of logistics.

He/she will have technological tools, news and case studies, analysis, and predefined guidelines.
The participant will know how to use the system effectively and will be able to operate inside it. You will be able to apply the knowledge acquired to classroom teaching to future logistics workers. You will discover what challenges future workers in the sector will face and how to adapt using the digital skills shown in the training.
The participant will be able to apply the digital techniques and strategies learned in the activity.

UNITS

Unit 1 Big data. All data our data
Unit 2 Data Management
Unit 3 Business Intelligence tools
Unit 4 KPIs definition and design

LEARNING OUTCOMES

GLOBAL LEARNING OUTCOMES

The participant be able:

- To know all major information management technologies and their major functionalities, used by enterprises in the supply chain.
- To identifier the benefits and objectives of da logistics process
- To determinate how to build the right indicators and the digital means to collect the information for its implementation
- To connect operational indicators with sustainable objectives utilizing the right tools and information systems to support their analysis.

SPECIFIC LEARNING OUTCOMES RELATED TO UNITS

UNIT 1 BIG DATA. ALL DATA ARE OUR DATA

Competency standard Knows and applies the techniques for the automated analysis of decision-making, the management of business processes and the different information systems and social networks that can be used for the creation of Value.

Know the importance of information management and reference technologies for the success of organizations.

<table>
<tr><td colspan="2">Learning Outcome Unit

Acquire the ability to combine business knowledge, Big Data technologies, and advanced analytical skills to drive decision-making and performance improvements in any organization.</td></tr>
<tr><td>Knowledge</td><td>Skills</td></tr>
<tr><td>The participant will be able to define the concept of the BIG DATA as well as innovative solutions that enable the interconnection of the global supply chain (Production, Transport, Distribution).

BIG DATA, the concept

Introduction to BIG DATA AND Business Intelligence and the digital revolution

The transformation of markets and the value of information

Speed and decision making

Value generators in business</td><td>The participant will be able to research and apply knowledge and skills to use the potential of BIG DATA with strategy and planning knowledge and skills applied to different organizational structures in logistics systems.</td></tr>
<tr><td colspan="2">Assessment criteria

a) The student defines BIG DATA and knows innovative solutions that allow to be used in the supply chain at each link in the chain have been distinguished.

b) The participant knows all major basic BIG DATA environment to improve supply chain performance.

c) The student classifies different technological solutions to make the interconnection of the supply chain and BIG DATA.</td></tr>
</table>

UNIT 2 DATA MANAGEMENT

Competency standard- Being able to understand the optimal structures for data management and governance, as well as establishing the relationships between the different sources of information and the business processes in the logistics value chain.

Learning Outcome Unit	
Be able to to identify the different information systems that exist in the logistics chain, as well as define the relationships and create data warehouses and data lakes based on the needs of the process and the sources of information.	
Knowledge	**Skills**
Knowledge – keep data organized, through data modeling, in a practical and usable way to ensure that the entire volume of data in an organization is accurate and consistent, easily accessible and protected.	Data management requires niche knowledge about Data Analysis, be to take large sets of data and find patterns to glean insights. Database Creation and Management, this means to increase a solid understanding of different database models such as hierarchical, relational and network. Critical Thinking, to draw useful insights from large amounts of data and Data Visualization
Assessment criteria	
a) The participant knows the different technologies and the environments to which they are applicable. b) The participant relates each technique to the objective that can be achieved in data management. c) The participant classifies the different type of data to the different environments and the objectives that can be achieved with them for each of the business processes.	

UNIT 3 BUSINESS INTELLIGENCE TOOLS

Competency Standard – The objective is for students to learn about the different tools that exist on the market and to be able to differentiate their potential use based on the processes and types of data that must be covered.

Learning Outcome Unit	
Being able to understand the business process to be digitized, identify the different existing business intelligent tools and select the most appropriate depending on the type of data, storage and subsequent use that it will be given. Know the largest possible number of existing tools on the market and be able to generate a technological surveillance system to find those new information systems that appear.	
Knowledge	**Skills**
The participant **will be able to learn** about business intelligence tools by new supply chains in the different areas of work. Classify BI tools, by type of data to be processed, speed of data generation and use process.	The participant **will be able to identify** the specific solution, the target market, the state of the technologies, ability to calculate the return on investment from the deployment of this type of project and calculate the degree of maturity of the company to include these technologies. You will be able to generate collaborative initiatives between technologies, as well as define type of projects and the expected results.

Assessment criteria

a) The participant learns about the different technologies to achieve BI results, as well as establish a coordinated data management throughout the value chain of the logistics process, giving visibility and traceability to the data and its governance, from end to end.

b) The participant identifies the specific solution available to achieve a BI project.

c) The participant generates system integration.

UNIT 4 KPIs. DEFINITION AND DESIGN

Competency Standard – The objective is for the student to be able to define the correct indicators, KPIs, associated with logistics processes 5.0, in such a way that through this data information can be generated, which helps decision-making at a strategic, tactical and operational level throughout the logistics chain.

<table>
<tr><td colspan="2">Learning Outcome Unit

Understand the logistics processes, in detail, to generate the key indicators that allow monitoring and improvement of the process through the analysis of data, which have been collected in it.</td></tr>
<tr><td>Knowledge</td><td>Skills</td></tr>
<tr><td>The participant will be able to learn about the process in new supply chains and identify key indicators.

From the identification of information systems, associate to each one the KPIs that can be obtained and the integrations between systems such as:

-Enterprise Resources Planning

-Warehouse Management System

-Transport Management System

-Order Management System

-Sales and Operations Planning</td><td>The participant will be able to identify KPI, associated with each of the processes. Identify the different sources of data from the information systems implemented. Use data management systems to generate optimal queries.</td></tr>
<tr><td colspan="2">Assessment criteria

a) The participant learns about the different technologies to achieve supply chain security and resilience, as well as coordinated border management and end-to-end supply chain visibility.

b) The participant is capable to extrapolate information systems' new data in order to perform better KPIs thanks to interconnection between solutions.</td></tr>
</table>

c) The participant learns about the right type and number of indicators that can identify and help improve a process.

UNIT 4 COORDINATION AND COLLABORATION OF THE GLOBAL SUPPLY NETWORK

Competency Standard: introduce coordination and collaboration concepts, such as automation, enabling improved performance across the supply chain, including internal and external logistics, asset management, supply and demand management, and full-cycle product management (Quote-to-cash)

Learning Outcome Unit	
Be able to know the collaborative techniques available to improve the performance of the entire supply chain	
Knowledge	**Skills**
The participant will be able to understand applied collaboration and its deepening that provides more scalable solutions and projects such as: Reduction of empty kilometers Intermodally Change of transport models. Road to rail and water	The participant will be able to investigate the possibilities of supply chain collaboration to maximize the use of resources (vehicle capacity and infrastructure). Matching carrier demand with logistics services available in different modes and service providers

Assessment criteria

a) The participant knows the solutions provided by the collaboration applied in the supply network. (Reduction of empty kilometers, intermodally, change in transport models)

b) The participant investigates the possibles synergies that can be established between the different agents of the supply chain.

PEDAGOGY AND METHODOLOGY IN THE COURSE

The courses derived from the Digitalization Itinerary in Logistics (PROJECT KA220- VET DIGinLOGS) are MOOC courses (Massive Online Open courses). All four modules have the same structure. They are divided into units and various pedagogical resources are used: Audiovisuals, Power Point presentations, links of interest, documents, tasks and questionnaires. All tasks or case studies have their solution. They can be done at the pace desired by the participant; resources can be downloaded to be used in the classroom. At the end of the training action, you can download the badge of having completed the course.