

# Vibrant Simulation of Supply Chain and Logistics

## Building the Supply Chain's Digital Twins

### Introduction

This Dynamic Simulation of Supply Chain and Logistics training course from Course N Carry Purchasing & Logistics will assist in identifying possible risks, planning for risk mitigation strategies before the risks materialise, and effectively scheduling lead times, warehousing and inventory resources, as well as the ideal quantity of transportation resources.

Analytical reasoning is insufficient to solve the problems and difficulties that arise in contemporary supply chains. The Supply Chain and Logistics specialists require a tool that allows them to model the supply chain and logistics activities and see the actual process in real time in order to identify potential bottlenecks and opportunities. To conduct studies in a virtual environment, which will allow them to execute their ideas, without the risk of disturbing the supply chain in the real world.

**The following will be covered in this Course N Carry Vibrant Simulation of Supply Chain and Logistics training course:**

- Using dynamic simulation to aid in supply chain analysis and design
- Preparing for possible risks and disruptions in a supply chain
- Optimisation of transportation policy and resources, including inventory
- Bullwhip impact mitigation and control
- Examination of prospective distribution networks and the launch of new products
- Assessment of substitute solutions for supply chain enhancement in a simulated setting
- Transportation resource optimisation and fleet management

### Objectives

Teaching participants how to apply simulation tools and methodologies for supply chain and logistics activity design, analysis, and risk management is the aim of this purchasing and logistics training course.

**Upon completion of this training course on Vibrant Simulation of Supply Chain and Logistics, you will be able to:**

- Conduct a Greenfield Supply Chain Analysis.
- Recognise the hazards associated with supply chains and logistics, as well as how to mitigate them.

- Run simulations to assist you in optimising your inventory.
- Learn how to anticipate potential ripple and bullwhip impacts.
- Provide a visual representation of your supply chain and logistics processes' whole workflow.
- Utilise the resources to organise your transportation efficiently.
- Showcase the results of the suggested modifications using the simulation's modifications.

## Training Methodology

A practical approach is taken in this Purchasing & Logistics training course on Dynamic Simulation of Supply Chain and Logistics. A Personal Learning Edition of any logistics software will be given to the delegates, and they will be shown through examples of how to use it for supply chain design, market planning, inventory optimisation, improving warehouse procedures, risk management, and measuring customer satisfaction.

The creation of the supply chain process, risk assessments, data collection and analysis, and recovery plan preparation will all be covered in detail by the delegates.

The delegates will be encouraged to replicate the processes they are currently working on and will build simulation models based on real-world data. The emphasis is on the delegates' real work and their efficient

## Organizational impacts

Companies that are able to simulate the effects of planned activities will have a competitive advantage over their rivals because they will be able to test solutions before putting them into practice and avoid having their plans derailed when they encounter real-world obstacles. By sending their employees on this Vibrant Simulation of Supply Chain and Logistics training course, organisations can anticipate the following benefits:

- Utilising instruments to replicate supply chain and logistics procedures
- The understanding of supply chain analytics and design
- Determine the true hazards and the steps taken to mitigate them for their supply chains.
- Recognise trends and potential bottlenecks brought on by planned modifications.
- Learning how to identify ripple and bullwhip effects through simulations.

## Personal Impact

In particular, delegates will learn how to carry out supply chain process design, recognise distribution patterns and apply them to simulations, utilise software to simulate supply chain and logistics processes, and access the personal learning edition of any logistics supply chain simulation programme.

- The organised understanding of logistics and supply chain dynamics
- Understanding of the dangers connected to supply chain and logistics operations
- The benefits and limitations of simulation techniques

- Methods for simulating the supply chain in detail Framework for evaluating the outcomes of tests and simulations
- How can simulation be used to aid in decision-making?
- The advantages of computer-generated experiments

## Who should attend?

Professionals working in production, business analytics, supply chain and logistics, service providing, etc. are the target audience for this training programme. Because the simulation techniques are applicable to a wide range of sectors, people from various disciplines can enroll in this training programme.

**A wide spectrum of professionals can profit from this dynamic simulation of supply chain and logistics training course, however the following are the main advantages:**

- Project Managers
- Supply Chain Managers,
- Risk Managers,
- Operation Managers,
- Production Planners,
- Human Resources Managers,
- Logistics Managers, and Plant Managers
- Specialists in Business Improvement
- Advisors

## Course Outline

### Day 1

#### Logistics and Supply Chain Procedures Using Simulation

- Dynamic Simulation as the Foundation for Supply Chain and Logistics Process Planning
- Issues with Supply Chain Analytics
- Supply Chains and Logistics: Analytical Optimisation via Dynamic Simulation

### Day 2

#### Supply Chain Modelling Using Simulation

- Greenfield Evaluation
- Several Level Supply Chains

- Logistics Simulation Programme Conducting a Basic Software-Based Facility
- Location Analysis
- Using Dynamic Simulation Software in Supply Chain and Logistics Projects with IT Infrastructure Integration

## Day 3

### Using Dynamic Simulation for Supply Chain Analysis, Master Planning, and Data Importing from Sources

- Estimating Capacity
- Service Level Analysis Reporting Findings
- Exporting Analysis Data to Other Programmes and Excel

## Day 4

### Using Dynamic Simulation for Inventory Optimisation

- Stocks and Safety Stocks
- Inventory Management
- Analysing Distinct Transportation Strategies via Dynamic Simulation
- Utilisation of the Fleet, Cost and Lead Time of Transportation, and Raw Materials Policies for Inventory
- Selecting Policies for Full Truck Load vs. Less Than Truckload (FTL/LTL)

## Day 5

### Risk Assessment of the Supply Chain

- Risks Associated with the Supply Chain:
- Calculating Their Impact on Revenue
- Organising Preventive, Remedial, and Emergency Action Plans
- Bullwhip Effect: Preparing for a Potential Production Stoppage; Customer Behaviours'
- Effect on Supply Chain Measurements