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The Ultimate Transport & Logistics Product Guide

The Logistics Competency Framework
Guidelines, Policies, and Best Practices for Success

 Phone Number
+352
423939- 837

 For More Information at
WWW.C4L.LU

Presented by Daniel Kohl
Director of the
Cluster for Logistics Asbl
Luxembourg



The Ultimate Transport and Logistics Product Guide



Foreword

The transport and logistics sector has always been the quiet engine behind global progress. Every product we use, every meal we enjoy, every technological breakthrough we celebrate has travelled through a complex network of systems designed to move goods safely, efficiently, and reliably. Yet, despite its central role in shaping modern life, the true breadth of products and solutions that make this sector function often remains hidden behind the scenes.

This book aims to bring those products into the spotlight.

In an era defined by rapid technological change, shifting consumer expectations, and unprecedented global interconnectivity, understanding the tools and innovations that power transport and logistics has never been more important. From traditional freight solutions to cutting-edge digital platforms, from warehousing technologies to last-mile delivery systems, the sector is evolving at a pace that demands both curiosity and clarity.

What you will find in these pages is not just a catalogue of products, but a narrative of transformation. Each chapter explores how specific solutions whether physical, digital, or service-based contribute to the resilience and agility of supply chains worldwide. Together, they form a mosaic of an industry that is constantly reinventing itself to meet the needs of businesses, communities, and individuals.

My hope is that this book serves as both a reference and an inspiration. Whether you are a seasoned logistics professional, a student entering the field, or a curious reader seeking to understand the systems that keep our world moving, this work offers a window into the remarkable diversity and ingenuity that define transport and logistics today.

As you turn the pages, I invite you to reflect on the profound impact these products have not only on the movement of goods, but on the movement of societies. The future of logistics is being shaped right now, and it is built on the foundations explored in this book.

If you'd like, I can also help you craft a preface, introduction, acknowledgements, or even tailor the foreword to a specific audience industry executives, students, policymakers, or general readers.

Here's a clear, professional disclaimer you can include in your book. I've written it in a style commonly used for industry publications protective, neutral, and suitable for both print and digital formats.

Daniel Kohl

Director of the Cluster for Logistics Asbl, Luxembourg



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Product Matrix – Transport & Logistics

A complete, structured overview of **7 main categories** and **40+ concrete products** in the logistics sector.

1-5. Transport Products

Category	Product	Description
1. Road Transport	1.1. FTL	Full truckload, direct transport
	1.2. LTL	Less-than-truckload
	1.3. Groupage	Network-based distribution
	1.4. Express	Same-day / next-day
	1.5. Courier	Small, time-critical shipments
	1.6. Temperature-controlled	Refrigerated / frozen transport
	1.7. ADR	Dangerous goods transport
	1.8. Heavy & Oversized	Special transports
2. Air Freight	2.0. Standard Air	Consolidated air freight
	2.1. Express Air	Priority, time-critical
	2.2. AOG	Aircraft-on-Ground service
	2.3. Pharma Air	GDP-compliant
	2.4. High-Value Air	Secure, high-value cargo
3. Sea Freight	2.5. Charter	Full or partial aircraft charter
	3.0. FCL	Full container load
	3.1. LCL	Less-than-container load
	3.2. Break Bulk	Non-containerized cargo
	3.3. RoRo	Rolling cargo
	3.4. Reefer	Refrigerated containers



Category	Product	Description
Rail	4.0. Intermodal	Rail-road combination
	4.1. Block Train	Full train loads
	4.2. Combined Transport	Trailer/container by rail
Inland Waterway	5.0. Container	River container transport
	5.1. Bulk	Dry bulk
	5.2. Project Cargo	Heavy lift via waterways

6. Warehousing & Fulfillment

Category	Product	Description
6. Storage	6.0. Pallet Storage	Standard warehouse
	6.1. High-bay Storage	Automated or manual
	6.2. Temperature-controlled	Refrigerated / frozen storage
	6.3. Hazardous Goods	ADR-compliant storage
Fulfillment	6.4. E-commerce Fulfillment	Pick/pack/ship
	6.5. Returns Management	Reverse logistics
	6.6. Value-Added Services	Labelling, kitting, assembly
Inventory Management	6.7. Inventory Control	Stock accuracy
	6.8 VMI	Vendor Managed Inventory

7. Supply Chain Management

Category	Product	Description
7. Planning	7.0. Transport Planning	Routing, capacity
	7.1. Network Design	Site & network optimization
	7.2. Capacity Planning	Forecasting
Execution	7.3. Control Tower	End-to-end visibility



Category	Product	Description
	7.4. Exception Management	Deviation handling
Optimization	7.5. Cost Analysis	Freight & process costs
	7.6. Route Optimization	Efficiency improvement
	7.7. Packaging Optimization	Packaging design
Visibility	7.8. Tracking	Multi-carrier tracking
	7.9. ETA Predictions	AI-based forecasts
	7.10. KPI Dashboards	Performance monitoring

8. Customs & Compliance

Category	Product	Description
Customs	8.0. Import/Export	Customs clearance
	8.1. Preference Calculation	Origin rules
	8.2. AEO Consulting	Certification support
Compliance	8.3. Dangerous Goods Consulting	ADR compliance
	8.4. ESG Reporting	Sustainability reporting
	8.5. CO ₂ Calculation	Emissions data
	8.6. CSRD Documentation	EU compliance

9. Special Logistics

Category	Product	Description
9. Industry Solutions	9.0. Pharma Logistics	GDP-compliant
	9.1. Art Logistics	High-value handling
	9.2. High-Tech Logistics	Sensitive equipment
	9.3. Automotive Sequencing	Just-in-sequence
	9.4. Battery Logistics	Lithium-ion ADR



Category	Product	Description
Time-Critical	9.5. OBC	On-board courier
	9.6. NFO	Next Flight Out
	9.7. Spare Parts	24/7 service

10. Digital Products

Category	Product	Description
10. Software	10.0. TMS	Transport management system
	10.1. WMS	Warehouse management system
	10.2. Visibility Platform	Real-time data
	10.3. CO ₂ Tools	Emissions calculation
Automation	10.4. API Integrations	System connectivity
	10.5. Document Automation	EDI, OCR
	10.6. Slot Management	Dock scheduling

11. Consulting Products

Category	Product	Description
11. Strategic	11.0. Logistics Strategy	Network & site planning
	11.1. Outsourcing Strategy	Make-or-buy
	11.2. Digitalization	Automation roadmap
Operational	11.3. Lean Logistics	Efficiency improvement
	11.4. Process Design	SOP creation
	11.5. Training	Operational training



1.1. Road Freight – FTL (Full Truckload)

Definition:

FTL is a transport product where a single customer books an entire truck for a direct, point-to-point movement. No consolidation, no cross-docking, no intermediate stops.

It is the **simplest operational**, but one of the **most strategically important** products in road freight.

1. Product Description

FTL involves transporting a full truckload of goods from origin to destination without intermediate handling.

Key characteristics

- Direct transport (A → B)
- One shipper, one consignee
- No transshipment
- High speed and reliability
- Suitable for large volumes or sensitive cargo

Typical equipment

- Standard tautliner / curtainsider
- Box trailer
- Mega trailer
- Refrigerated trailer (if needed)
- Flatbed / low loader (for special cargo)

2. Customer Segments

FTL is used by companies with **consistent or high-volume shipments**.

Ideal customers

- Manufacturing (automotive, machinery, steel)
- Retail & FMCG
- Food & beverage
- Chemicals (non-ADR or ADR)
- E-commerce bulk replenishment



- Construction materials
- High-value goods (with secure trailers)

Customer needs

- Predictability
- Speed
- Cost efficiency
- Minimal handling
- High load security

3. Value Proposition

Why customers choose FTL:

Operational value

- Fastest road transport option
- Lowest risk of damage (no handling)
- High reliability
- Full control over timing

Commercial value

- Transparent pricing
- Economies of scale for large volumes
- Predictable lead times

Strategic value

- Ideal for just-in-time (JIT) and just-in-sequence (JIS) flows
- Supports stable supply chains

4. Service Scope

Included

- Truck provision
- Driver
- Direct transport
- Basic load securing



- Standard insurance
- Tracking (if available)

Optional add-ons

- Express / dedicated truck
- Temperature control
- High-security trailer
- Double driver
- CO₂ reporting
- Time-window delivery
- Loading/unloading assistance
- Customs services (for cross-border)

5. Operational Workflow

1. Booking

- Customer requests truck
- Load details: weight, volume, pallets, equipment
- Pickup/delivery windows

2. Planning

- Assign truck & driver
- Route planning
- Compliance check (driving hours, ADR, etc.)

3. Execution

- Truck arrives at pickup
- Loading & securing
- Direct transport
- Delivery & POD (proof of delivery)

4. Post-processing

- Billing
- KPI reporting



- Claims handling (if needed)

6. Pricing Model

Common pricing structures

- **Per km** (most common)
- **Per trip** (fixed rate)
- **Per day / per truck** (dedicated fleet)
- **Fuel surcharge** (indexed)
- **Toll surcharge**
- **Waiting time fees**
- **Weekend/holiday surcharges**

Cost drivers

- Distance
- Equipment type
- Market capacity
- Seasonality
- Border crossings
- ADR requirements

7. Key KPIs

Operational KPIs

- On-time pickup (%)
- On-time delivery (%)
- Damage rate (%)
- Empty km (%)
- Driver utilization (%)

Commercial KPIs

- Revenue per km
- Margin per trip
- Load factor



- Customer retention

Sustainability KPIs

- CO₂ emissions per trip
- Fuel efficiency

8. Risks & Challenges

Operational risks

- Driver shortages
- Traffic delays
- Border delays
- Equipment breakdown

Commercial risks

- High competition
- Price pressure
- Volatile fuel prices

Regulatory risks

- Driving time regulations
- Emission regulations
- ADR compliance

9. Differentiators (How to stand out)

Most FTL providers look the same. You differentiate by:

A. Reliability

- 98–99 % on-time delivery
- Real-time tracking
- Exception management

B. Transparency

- Clear pricing
- CO₂ reporting
- KPI dashboards



C. Service quality

- Trained drivers
- Modern fleet
- High load security

D. Specialization

- Automotive
- Pharma
- High-value
- Temperature-controlled

E. Customer experience

- Dedicated account manager
- Fast response times
- Proactive communication

10. When FTL is the best solution

FTL is ideal when:

- The shipment fills most of a truck
- The cargo is sensitive or high-value
- Speed is critical
- Handling must be minimized
- The route is long-distance
- The customer wants predictable lead times



1.2. Road Freight – LTL

(Part-Load Transport)

Definition

LTL (Less-Than-Truckload) is a road freight product designed for **medium-sized shipments** that are too large for groupage but too small to justify a full truckload. Shipments typically move **directly or with minimal handling**, often via regional hubs or direct linehauls.

LTL is less network-intensive than groupage but requires strong planning, capacity management, and pricing discipline. It is a core product for industrial and B2B supply chains across Europe.

1. Product Description

LTL involves transporting shipments that range from **2–6 pallets**, often with higher weight and volume than groupage.

Shipments may be **direct-loaded** onto linehaul trailers or consolidated with a small number of other LTL shipments.

Key characteristics

- Medium consolidation density
- Limited handling (1–2 touches)
- Flexible routing (direct or via hub)
- Lower operational complexity than groupage
- Suitable for heavier freight
- Often palletized shipments

Typical shipment size

- 2–6 pallets
- 500–2,500 kg
- 3–12 m³
- Often 1–6 loading meters

2. Customer Segments

LTL is ideal for companies with **regular medium-sized shipments** that do not fill a truck.

Ideal customers



- Industrial manufacturers
- Automotive suppliers
- Machinery & equipment
- Building materials
- Consumer goods
- Food & beverage (non-temperature)
- B2B replenishment flows

Customer needs

- Cost-effective alternative to FTL
- Reliable transit times
- Lower handling risk
- Flexible pickup/delivery
- Ability to ship medium-sized loads without minimum volume

3. Value Proposition

Operational value

- Fewer handling steps → lower damage risk
- Direct or semi-direct transport
- Suitable for heavy or bulky freight
- Predictable transit times

Commercial value

- Cheaper than FTL
- More flexible than groupage
- Attractive for medium-volume shippers
- Transparent pricing (per loading meter / per pallet)

Strategic value

- Supports industrial supply chains
- Ideal for regular B2B flows
- Bridges the gap between groupage and FTL



4. Service Scope

Included

- Pickup
- Palletized loading
- Linehaul transport (direct or via hub)
- Limited cross-docking
- Standard delivery
- Basic insurance

Optional add-ons

- Time-definite delivery
- Tail-lift service
- Appointment delivery
- Inside delivery
- Dangerous goods (ADR)
- Temperature-controlled LTL
- Oversized freight handling
- CO₂ reporting
- Additional insurance

5. Operational Workflow

LTL has a simpler workflow than groupage but requires careful load planning.

1. Pickup

- Local truck collects 1–3 LTL shipments
- Scanning & documentation

2. Origin terminal (optional)

- Minimal sorting
- Direct loading onto outbound trailer
- Often no pallet breakdown

3. Linehaul



- Direct transport to destination region
- Or via one central hub
- Typically, overnight or 24–48 hours

4. Destination terminal

- Limited deconsolidation
- Preparation for final delivery

5. Delivery

- Local truck delivers to consignee
- POD capture

6. Pricing Model

LTL pricing is more flexible than groupage and often based on **space and weight**.

Common pricing structures

- Per loading meter
- Per pallet
- Weight/volume brackets
- Zone-based tariffs
- Fuel surcharge
- Accessorial charges

Cost drivers

- Weight
- Volume (m³)
- Loading meters
- Distance
- Handling requirements
- Special equipment (e.g., liftgate)
- Service level

7. Key KPIs

Operational KPIs



- On-time pickup (%)
- On-time delivery (%)
- Damage rate (%)
- Linehaul utilization (%)
- Handling accuracy
- Direct-load ratio (%)

Commercial KPIs

- Revenue per loading meter
- Margin per shipment
- Customer retention
- Trailer fill rate

Sustainability KPIs

- CO₂ emissions per shipment
- Empty km (%)
- Direct-load efficiency

8. Risks & Challenges

Operational risks

- Lower consolidation → higher cost per unit
- Incorrect loading meter calculation
- Damage risk for heavy freight
- Capacity fluctuations

Commercial risks

- High price sensitivity
- Competition from FTL spot market
- Complex pricing for mixed freight

Regulatory risks

- Weight restrictions (axle loads)
- ADR compliance



- Driver hours & cabotage rules

9. Differentiators (How to stand out)

A. Network & capacity

- High direct-load ratio
- Strong regional coverage
- Reliable capacity availability

B. Technology

- Real-time tracking
- Digital load planning
- Automated pricing tools

C. Customer experience

- Transparent loading meter calculation
- Predictable transit times
- Proactive communication

D. Specialization

- Heavy industrial LTL
- ADR LTL
- Temperature-controlled LTL
- Oversized LTL

E. Sustainability

- CO₂ reporting
- High-efficiency trailers
- Alternative fuel linehauls

10. When LTL is the best solution

LTL is ideal when:

- Shipments are **medium-sized** (2–6 pallets)
- FTL is too expensive
- Groupage is too slow or too risky



- The customer needs **lower handling**
- Freight is heavy or bulky
- Transit time reliability is important



1.3. Road Freight – Groupage

(Network-Based Distribution)

Definition:

Groupage is a transport product where **multiple small shipments** from different customers are **consolidated into a single truckload** through a **hub-and-spoke distribution network**.

It is the **most network-intensive** and **operationally complex** road freight product but also one of the **most profitable** when executed well.

Groupage is the backbone of **European distribution logistics**.

1. Product Description

Groupage involves collecting many small shipments (parcels, boxes, 1–2 pallets) and consolidating them into linehaul trucks that move between regional hubs.

Key characteristics

- High consolidation density
- Multiple handling steps
- Fixed network schedules
- Standardized processes
- High frequency (often daily)
- Optimized for small shipments

Typical shipment size

- 1 parcel to 1–2 pallets
- 1–500 kg
- Small cubic meter volumes

2. Customer Segments

Groupage is ideal for companies with **small, frequent shipments**.

Ideal customers

- SMEs
- E-commerce sellers
- Retail replenishment



- Spare parts distributors
- High-tech & electronics
- Pharma (non-temperature)
- Industrial suppliers

Customer needs

- Frequent departures
- Low cost per shipment
- Reliable transit times
- Nationwide or pan-European coverage
- Predictable pricing

3. Value Proposition

Operational value

- Daily pickup and delivery
- Dense network coverage
- Predictable transit times
- Efficient for small shipments

Commercial value

- Very cost-effective
- No minimum volume required
- Standardized tariffs

Strategic value

- Ideal for B2B replenishment
- Supports distributed supply chains
- Enables pan-European distribution

4. Service Scope

Included

- Pickup
- Terminal consolidation



- Linehaul transport
- Sorting & cross-docking
- Last-mile delivery
- Standard insurance

Optional add-ons

- Time-definite delivery
- Saturday delivery
- Notification services
- Liftgate service
- Inside delivery
- Dangerous goods (ADR)
- CO₂ reporting
- Additional insurance

5. Operational Workflow

Groupage has the most structured workflow of all road freight products.

1. Pickup

- Local truck collects many small shipments
- Scanning and documentation

2. Origin terminal

- Sorting by destination
- Consolidation into linehaul units
- Palletizing or containerizing

3. Linehaul

- Scheduled transport between hubs
- Often overnight

4. Destination terminal

- Deconsolidation
- Sorting for last-mile delivery



5. Delivery

- Local truck delivers to consignee
- POD (proof of delivery)

6. Pricing Model

Groupage pricing is **highly standardized**.

Common pricing structures

- **Per kg** (tiered brackets)
- **Per parcel**
- **Per shipment**
- **Zone-based tariffs**
- **Fuel surcharge**
- **Accessorial charges**

Cost drivers

- Weight
- Volume (m³)
- Density (kg/m³)
- Number of handling steps
- Distance
- Service level

7. Key KPIs

Operational KPIs

- On-time pickup (%)
- On-time delivery (%)
- Damage rate (%)
- Terminal dwell time
- Linehaul fill rate (%)
- Misrouting rate (%)

Commercial KPIs



- Revenue per kg / per shipment
- Margin per shipment
- Network utilization
- Customer retention

Sustainability KPIs

- CO₂ emissions per kg
- Empty km (%)

8. Risks & Challenges

Operational risks

- High damage risk (multiple handling steps)
- Terminal congestion
- Misrouting
- Network delays

Commercial risks

- High competition
- Price pressure
- Complex cost structure

Regulatory risks

- ADR compliance
- Weight restrictions
- Driver hours

9. Differentiators (How to stand out)

A. Network quality

- High frequency
- Reliable schedules
- Low damage rates

B. Technology

- Real-time tracking



- Barcode/RFID scanning
- Automated sorting

C. Customer experience

- Transparent pricing
- Predictable transit times
- Proactive communication

D. Specialization

- Pharma groupage
- High-value groupage
- Temperature-controlled groupage
- ADR groupage

E. Sustainability

- CO₂ reporting
- Green linehauls
- Electric last-mile

10. When Groupage is the best solution

Groupage is ideal when:

- Shipments are small and frequent
- Cost efficiency is important
- Transit time is flexible
- The customer needs wide network coverage
- The shipment does not justify LTL or FTL



⚡ 1.4. Road Freight – Express

(Same-Day / Next-Day Delivery)

Definition:

Express Road freight is a premium transport product designed for **time-critical shipments** that must arrive **same day** or **next day**.

It relies on **dedicated vehicles**, **priority handling**, and **direct routing** to guarantee the fastest possible transit times.

Express is one of the **highest-margin** and **highest-value** products in road logistics.

1. Product Description

Express transport provides ultra-fast delivery using dedicated vans, sprinters, or trucks. Unlike standard road freight, express shipments **do not get consolidated** and **do not follow network schedules**.

Key characteristics

- Direct, priority transport
- Dedicated vehicle (no sharing)
- Guaranteed delivery windows
- Minimal handling
- High reliability and speed

Typical shipment size

- 1 parcel to 4–6 pallets
- 1–1,500 kg
- Often high-value or urgent cargo

2. Customer Segments

Express is used by companies with **critical, time-sensitive shipments**.

Ideal customers

- Automotive (JIT/JIS)
- Aerospace (AOG – Aircraft on Ground)
- High-tech & electronics
- Medical & pharma



- E-commerce (premium delivery)
- Industrial spare parts
- Legal & financial documents

Customer needs

- Speed
- Reliability
- Guaranteed delivery
- Real-time visibility
- Zero tolerance for delays

3. Value Proposition

Operational value

- Fastest possible road transport
- Direct routing (no hubs)
- Minimal damage risk
- 24/7 availability

Commercial value

- Premium pricing
- High willingness to pay
- Predictable delivery windows

Strategic value

- Prevents production downtime
- Supports emergency supply chains
- Enables competitive service levels

4. Service Scope

Included

- Dedicated vehicle
- Priority pickup
- Direct transport



- Real-time tracking
- Standard insurance
- POD (proof of delivery)

Optional add-ons

- Double driver (non-stop driving)
- Temperature control
- High-security transport
- Weekend/holiday delivery
- CO₂ reporting
- White-glove delivery
- On-Board Courier (OBC) for air express

5. Operational Workflow

1. Booking

- Immediate request
- Shipment details (weight, dimensions, urgency)
- Delivery deadline

2. Dispatch

- Assign nearest available vehicle
- Driver receives route & instructions
- Vehicle goes directly to pickup

3. Execution

- Priority loading
- Direct transport (A → B)
- Real-time updates

4. Delivery

- Immediate unloading
- POD sent to customer

5. Post-processing



- Billing
- KPI reporting
- Incident review (if needed)

6. Pricing Model

Express pricing is **premium** and reflects urgency.

Common pricing structures

- **Per km** (higher rate than standard)
- **Per trip** (fixed urgent delivery fee)
- **Urgency surcharge**
- **Night/weekend surcharge**
- **Waiting time fees**
- **Double-driver surcharge**

Cost drivers

- Distance
- Urgency level
- Vehicle type
- Driver availability
- Time of day
- Border crossings

7. Key KPIs

Operational KPIs

- Pickup response time
- On-time delivery (%)
- Transit time accuracy
- Incident rate
- Driver availability

Commercial KPIs

- Revenue per km



- Margin per trip
- Customer retention
- Repeat business rate

Sustainability KPIs

- CO₂ emissions per trip
- Empty km (%)

8. Risks & Challenges

Operational risks

- Driver shortages
- Traffic delays
- Border delays
- Vehicle breakdowns

Commercial risks

- High expectations
- Penalties for delays
- Competition from integrators (DHL Express, UPS, FedEx)

Regulatory risks

- Driving time regulations
- ADR compliance (if applicable)

9. Differentiators (How to stand out)

A. Speed

- 60–90 min pickup time
- Direct routing
- Double-driver option

B. Visibility

- Real-time GPS tracking
- ETA updates
- Proactive communication



C. Reliability

- 98–99 % on-time delivery
- Dedicated vehicles
- Priority handling

D. Specialization

- AOG express
- Pharma express
- High-value express
- Temperature-controlled express

E. Customer experience

- 24/7 hotline
- Instant quotes
- Transparent pricing

10. When Express is the best solution

Express is ideal when:

- A shipment must arrive on the same day or next day
- Production downtime must be avoided
- Cargo is high-value or sensitive
- Standard transit times are too slow
- The customer needs guaranteed delivery



1.5. Road Freight –

Courier Services (Small, Time-Critical Shipments)

Definition:

Courier services handle **small, urgent shipments** that require **immediate pickup, fast delivery**, and **high-touch handling**.

Couriers typically use **small vehicles** (bikes, scooters, cars, vans) and operate in **local or regional areas**, often with **same-day** or **within-hours** delivery windows.

Courier is the **fastest and most flexible** ground-based transport product for small shipments.

1. Product Description

Courier services focus on transporting small, time-critical items with **direct or near-direct routing**.

Unlike Express (which often uses vans or trucks), Courier is optimized for **lightweight, urgent, and high-priority shipments**.

Key characteristics

- Immediate pickup (often within 30–90 minutes)
- Small vehicle fleet (bike, scooter, car, small van)
- Direct or semi-direct routing
- High flexibility
- Local or regional coverage
- High service level

Typical shipment size

- Documents
- Small parcels
- Envelopes
- Small boxes
- Up to 50–200 kg (depending on vehicle)

2. Customer Segments

Courier services are used by companies with **urgent, lightweight shipments**.

Ideal customers



- Legal firms (contracts, documents)
- Financial institutions
- Medical labs (samples, diagnostics)
- Hospitals (urgent supplies)
- High-tech companies (components, prototypes)
- Retailers (same-day delivery)
- E-commerce (premium delivery)
- Automotive (small spare parts)

Customer needs

- Immediate pickup
- Guaranteed delivery
- Real-time visibility
- High reliability
- Secure handling

3. Value Proposition

Operational value

- Fastest possible local delivery
- Direct routing
- Minimal handling
- High flexibility

Commercial value

- Premium pricing
- High willingness to pay
- No minimum volume

Strategic value

- Supports emergency operations
- Enables same-day e-commerce
- Reduces downtime in critical industries



4. Service Scope

Included

- Immediate pickup
- Direct or priority routing
- Basic tracking
- Standard insurance
- POD (proof of delivery)

Optional add-ons

- Ultra-fast delivery (1–2 hours)
- Scheduled courier
- Temperature-controlled courier
- High-security courier
- Multi-stop courier
- CO₂ reporting
- White-glove delivery
- Weekend/holiday service

5. Operational Workflow

1. Booking

- Customer requests immediate pickup
- Shipment details (size, weight, urgency)
- Delivery deadline

2. Dispatch

- Nearest available courier assigned
- Courier receives route & instructions
- Immediate departure to pickup

3. Execution

- Priority loading
- Direct or optimized routing



- Real-time updates

4. Delivery

- Immediate handover
- POD sent to customer

5. Post-processing

- Billing
- KPI reporting
- Incident review

6. Pricing Model

Courier pricing is **premium** and reflects speed and urgency.

Common pricing structures

- **Per km** (higher than standard transport)
- **Per job** (flat rate for local deliveries)
- **Urgency surcharge**
- **Night/weekend surcharge**
- **Waiting time fees**
- **Multi-stop surcharge**

Cost drivers

- Distance
- Urgency
- Vehicle type
- Time of day
- Traffic conditions
- Special handling requirements

7. Key KPIs

Operational KPIs

- Pickup response time
- Delivery time accuracy



- On-time delivery (%)
- Incident rate
- Courier availability

Commercial KPIs

- Revenue per job
- Margin per job
- Repeat customer rate
- Customer satisfaction

Sustainability KPIs

- CO₂ emissions per delivery
- Share of bike/e-vehicle deliveries

8. Risks & Challenges

Operational risks

- Traffic congestion
- Courier availability
- Weather conditions
- Vehicle breakdown

Commercial risks

- High customer expectations
- Penalties for delays
- Competition from integrators and gig-economy platforms

Regulatory risks

- Urban access restrictions
- Emission zones
- Insurance requirements

9. Differentiators (How to stand out)

A. Speed

- 30–60 min pickup



- 1–3 hour delivery windows
- Priority routing

B. Visibility

- Real-time GPS tracking
- ETA updates
- Proactive communication

C. Reliability

- High on-time performance
- Professional couriers
- Secure handling

D. Specialization

- Medical courier
- Legal courier
- High-value courier
- Temperature-controlled courier

E. Sustainability

- Bike couriers
- Electric vehicles
- CO₂ reporting

10. When Courier is the best solution

Courier is ideal when:

- The shipment is small and urgent
- Delivery must happen within hours
- The customer needs guaranteed timing
- Standard or express services are too slow
- The shipment is sensitive or high-value



❄️ 1.6. Road Freight – Temperature-Controlled Transport (Refrigerated / Frozen)

Definition:

Temperature-controlled transport ensures that goods are moved within a **strict, predefined temperature range** using **refrigerated, heated, or insulated vehicles**. This product is essential for industries where **product integrity, safety, and regulatory compliance** depend on maintaining a stable temperature throughout the entire journey. It is one of the **highest-value and highest-compliance** segments in road logistics.

1. Product Description

Temperature-controlled transport uses specialized vehicles equipped with:

- Refrigeration units
- Heating units
- Insulated walls
- Temperature monitoring systems

The goal is to maintain a **continuous cold chain** from pickup to delivery.

Key characteristics

- Controlled temperature ranges (e.g., +2°C to +8°C, –18°C, ambient)
- Continuous monitoring
- High compliance requirements
- Specialized equipment and trained drivers
- Suitable for sensitive, perishable, or regulated goods

Typical temperature ranges

- **Frozen:** –18°C or lower
- **Chilled:** +2°C to +8°C
- **Ambient controlled:** +15°C to +25°C
- **Heated:** +25°C to +30°C (winter protection)

2. Customer Segments

Temperature-controlled transport is used by industries where **product quality and safety** depend on stable temperatures.



Ideal customers

- Pharmaceutical companies
- Medical distributors
- Food & beverage producers
- Supermarkets & retailers
- Meat, dairy, and seafood suppliers
- Chemical companies
- Cosmetics manufacturers
- High-value electronics (temperature-sensitive components)

Customer needs

- Guaranteed temperature integrity
- Regulatory compliance
- Real-time monitoring
- Zero tolerance for deviations
- High reliability

3. Value Proposition

Operational value

- Continuous cold chain
- Reduced spoilage and waste
- High product safety
- Specialized handling

Commercial value

- Premium pricing
- High customer loyalty
- Strong differentiation

Strategic value

- Enables compliance with GDP, HACCP, and food safety regulations
- Supports sensitive supply chains (pharma, food, chemicals)



4. Service Scope

Included

- Temperature-controlled vehicle
- Pre-cooling or pre-heating
- Continuous temperature monitoring
- Standard load securing
- POD (proof of delivery)

Optional add-ons

- Real-time temperature tracking
- Dual-temperature compartments
- High-security transport
- GDP-compliant pharma handling
- HACCP documentation
- CO₂ reporting
- Weekend/holiday delivery
- Express temperature-controlled service

5. Operational Workflow

1. Pre-trip preparation

- Vehicle pre-cooling
- Calibration check
- Temperature setpoint validation

2. Pickup

- Temperature check before loading
- Verification of packaging
- Loading according to SOPs

3. Transport

- Continuous temperature monitoring
- Alerts for deviations



- Route optimization

4. Delivery

- Temperature check at unloading
- POD with temperature log

5. Post-processing

- Temperature report
- Compliance documentation
- Incident review (if needed)

6. Pricing Model

Temperature-controlled transport commands **premium pricing** due to equipment, compliance, and risk.

Common pricing structures

- **Per km** (higher than standard FTL/LTL)
- **Per pallet** (for groupage or LTL)
- **Temperature surcharge**
- **Dual-compartment surcharge**
- **Weekend/night surcharge**
- **Waiting time fees**

Cost drivers

- Temperature range
- Equipment type
- Compliance requirements
- Distance
- Seasonality (winter/summer peaks)
- Handling complexity

7. Key KPIs

Operational KPIs

- Temperature deviation rate (%)



- On-time pickup/delivery (%)
- Equipment uptime (%)
- Incident rate
- Compliance audit score

Commercial KPIs

- Revenue per km
- Margin per trip
- Customer retention
- Claim rate

Sustainability KPIs

- Fuel consumption
- CO₂ emissions per trip
- Refrigeration unit efficiency

8. Risks & Challenges

Operational risks

- Equipment failure
- Temperature deviations
- Power loss
- Loading errors

Commercial risks

- High cost of equipment
- High liability exposure
- Strict customer expectations

Regulatory risks

- GDP (Good Distribution Practice)
- HACCP (Food safety)
- ADR (for temperature-sensitive chemicals)
- Local food safety laws



9. Differentiators (How to stand out)

A. Technology

- Real-time temperature tracking
- Automated alerts
- Digital temperature logs

B. Compliance

- GDP-certified processes
- HACCP-compliant handling
- Trained drivers

C. Equipment quality

- Modern refrigerated trailers
- Dual-temperature compartments
- Backup power systems

D. Customer experience

- Transparent reporting
- Proactive communication
- Zero-deviation guarantee

E. Specialization

- Pharma cold chain
- Frozen food distribution
- High-value temperature-sensitive goods

10. When Temperature-Controlled Transport is the best solution

It is ideal when:

- Product quality depends on temperature
- Regulations require cold chain integrity
- The shipment is perishable or sensitive
- The customer needs full traceability
- Standard transport risks product damage



1.7. Road Freight – ADR

(Dangerous Goods Transport)

Definition:

ADR transport refers to the **regulated movement of dangerous goods** by road under the European ADR Convention.

It covers substances and materials that pose risks to **health, safety, property, or the environment**, requiring **special vehicles, trained drivers, documentation, and strict compliance procedures**.

ADR is one of the **highest-risk, highest-compliance, and highest-value** segments in road logistics.

1. Product Description

ADR transport involves moving hazardous materials classified into **9 ADR classes**, each with specific handling, packaging, and transport requirements.

Key characteristics

- Strict regulatory compliance
- Mandatory driver certification (ADR license)
- Specialized vehicles and equipment
- Detailed documentation and labeling
- High safety standards
- Zero-tolerance for errors

ADR classes (overview)

1. Explosives
2. Gases
3. Flammable liquids
4. Flammable solids
5. Oxidizing substances
6. Toxic & infectious substances
7. Radioactive materials
8. Corrosive substances
9. Miscellaneous dangerous goods



2. Customer Segments

ADR transport is used by industries where **hazardous materials** are part of production, distribution, or waste management.

Ideal customers

- Chemical manufacturers
- Pharmaceutical companies
- Oil & gas companies
- Paint & coatings producers
- Battery manufacturers (lithium-ion)
- Waste management companies
- Industrial suppliers
- Agriculture (fertilizers, chemicals)

Customer needs

- Guaranteed compliance
- Safety and reliability
- Trained personnel
- Proper documentation
- Real-time visibility

3. Value Proposition

Operational value

- Safe and compliant transport of hazardous goods
- Reduced risk of incidents
- Specialized equipment and trained drivers

Commercial value

- Premium pricing
- High entry barriers (less competition)
- Strong customer loyalty

Strategic value



- Enables regulated industries to operate
- Supports critical supply chains (chemicals, pharma, energy)

4. Service Scope

Included

- ADR-certified driver
- ADR-compliant vehicle
- Proper labeling and placarding
- Documentation (transport documents, safety data sheets)
- Load securing
- Standard insurance

Optional add-ons

- Temperature-controlled ADR
- High-security ADR transport
- Escort vehicles (for high-risk classes)
- Waste ADR transport
- CO₂ reporting
- Emergency response service
- Route risk assessment

5. Operational Workflow

1. Pre-trip preparation

- Verification of packaging and labeling
- Review of Safety Data Sheets (SDS)
- Vehicle inspection
- Equipment check (fire extinguishers, PPE, ADR kit)

2. Pickup

- Controlled loading
- Documentation check
- Placarding of vehicle



3. Transport

- Compliance with ADR routing rules
- Monitoring of vehicle and cargo
- Incident prevention measures

4. Delivery

- Controlled unloading
- Documentation handover
- Removal of placards

5. Post-processing

- Incident reporting (if any)
- Compliance documentation
- Customer reporting

6. Pricing Model

ADR transport commands **premium pricing** due to risk, compliance, and equipment.

Common pricing structures

- **Per km** (higher than standard FTL/LTL)
- **ADR surcharge** (per shipment or per truck)
- **Class-based surcharge** (higher for classes 1, 2, 7)
- **Waiting time fees**
- **Special equipment surcharge**

Cost drivers

- ADR class
- Equipment type
- Distance
- Route restrictions
- Handling complexity
- Documentation requirements

7. Key KPIs



Operational KPIs

- Incident rate
- Compliance audit score
- On-time delivery (%)
- Equipment readiness
- Driver certification compliance

Commercial KPIs

- Revenue per km
- Margin per trip
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per trip
- Fuel efficiency

8. Risks & Challenges

Operational risks

- Accidents or spills
- Equipment failure
- Incorrect labeling or packaging
- Driver error

Commercial risks

- High liability exposure
- High insurance costs
- Strict customer expectations

Regulatory risks

- ADR violations
- Environmental regulations
- Route restrictions (tunnels, cities)



9. Differentiators (How to stand out)

A. Compliance excellence

- Zero-incident track record
- Regular audits
- Certified processes

B. Equipment quality

- Modern ADR-compliant fleet
- Temperature-controlled ADR
- High-security vehicles

C. Driver expertise

- ADR-certified drivers
- Regular training
- Emergency response knowledge

D. Technology

- Real-time tracking
- Digital documentation
- Automated compliance checks

E. Specialization

- Lithium-ion battery transport
- Pharma ADR
- Waste ADR
- High-risk classes (1, 2, 7)

10. When ADR Transport is the best solution

ADR is essential when:

- The cargo is hazardous or regulated
- Safety and compliance are critical
- The customer needs specialized handling
- Standard transport is not allowed



- The shipment poses environmental or health risks



1.8. Road Freight – Heavy & Oversized Transport (Special Transports)

Definition:

Heavy & Oversized Transport refers to the movement of cargo that **exceeds standard legal limits** for weight, dimensions, or both.

These transports require **specialized equipment, permits, route planning**, and often **escort vehicles**.

It is one of the **most complex, regulated, and high-value** segments in road logistics.

1. Product Description

Heavy & Oversized Transport handles cargo that cannot be moved using standard trucks due to its size or weight.

Key characteristics

- Exceeds legal limits (length, width, height, weight)
- Requires special trailers and equipment
- Needs permits and route approvals
- Often requires escort vehicles
- High operational complexity
- High safety requirements

Typical cargo

- Construction machinery (excavators, cranes)
- Industrial equipment
- Wind turbine components
- Transformers and generators
- Steel structures
- Boats and yachts
- Prefabricated buildings
- Oversized pipes or tanks

2. Customer Segments

This service is used by industries with **large, heavy, or irregular cargo**.



Ideal customers

- Construction companies
- Heavy industry
- Energy sector (wind, solar, oil & gas)
- Mining
- Manufacturing
- Infrastructure projects
- Maritime industry
- Engineering firms

Customer needs

- Safe handling
- Regulatory compliance
- Route planning
- Specialized equipment
- High reliability

3. Value Proposition

Operational value

- Safe movement of oversized cargo
- End-to-end planning and execution
- Specialized equipment and expertise

Commercial value

- Premium pricing
- High entry barriers (few competitors)
- Long-term project contracts

Strategic value

- Enables major infrastructure and industrial projects
- Supports energy transition (wind turbines, transformers)

4. Service Scope



Included

- Specialized trailer and equipment
- Certified driver
- Load securing
- Permit management
- Route planning
- Escort vehicle coordination
- Standard insurance

Optional add-ons

- Police escort (if required)
- Crane services
- Storage and staging
- Project management
- Engineering drawings
- CO₂ reporting
- Night transport (if required by law)

5. Operational Workflow

1. Pre-planning

- Cargo assessment (dimensions, weight, center of gravity)
- Route survey (bridges, tunnels, road width)
- Permit application
- Equipment selection

2. Pickup

- Crane loading or ramp loading
- Load securing according to regulations
- Safety inspection

3. Transport

- Escort vehicles (front/back)



- Compliance with speed and route restrictions
- Real-time monitoring

4. Delivery

- Controlled unloading
- Crane coordination
- Final inspection

5. Post-processing

- Documentation
- Incident reporting
- Customer reporting

6. Pricing Model

Heavy & Oversized Transport commands **very high pricing** due to complexity and risk.

Common pricing structures

- **Per project** (most common)
- **Per km** (for simpler moves)
- **Equipment surcharge** (low loader, extendable trailer)
- **Permit fees**
- **Escort vehicle fees**
- **Crane service fees**
- **Night transport surcharge**

Cost drivers

- Dimensions and weight
- Equipment type
- Route complexity
- Permit requirements
- Escort requirements
- Loading/unloading complexity

7. Key KPIs



Operational KPIs

- Incident rate
- Permit approval time
- On-time delivery (%)
- Route deviation rate
- Equipment utilization

Commercial KPIs

- Revenue per project
- Margin per project
- Customer retention
- Claim rate

Sustainability KPIs

- Fuel consumption
- CO₂ emissions per project

8. Risks & Challenges

Operational risks

- Route obstructions
- Equipment failure
- Weather conditions
- Loading/unloading accidents

Commercial risks

- High liability exposure
- Permit delays
- Project delays

Regulatory risks

- Weight and dimension limits
- Escort requirements
- Night transport restrictions



- Infrastructure limitations

9. Differentiators (How to stand out)

A. Engineering expertise

- Route surveys
- Load distribution calculations
- Project planning

B. Equipment quality

- Modern low loaders
- Extendable trailers
- Modular trailers (SPMTs)

C. Compliance & safety

- Certified drivers
- Safety audits
- Zero-incident track record

D. Customer experience

- End-to-end project management
- Transparent communication
- Real-time tracking

E. Specialization

- Wind turbine logistics
- Industrial relocations
- Heavy machinery transport

10. When Heavy & Oversized Transport is the best solution

It is essential when:

- Cargo exceeds legal limits
- Specialized handling is required
- Safety and compliance are critical
- The shipment is part of a major project



- Standard transport is not possible



2.0. Air Freight – Standard Air

(Consolidated Air Freight)

Definition:

Standard Air Freight refers to the movement of cargo via **scheduled commercial or cargo flights**, where shipments from multiple customers are **consolidated into unit load devices (ULDs)** or bulk compartments.

It is the **most common and cost-efficient** form of air freight, balancing **speed, reliability, and price**.

1. Product Description

Standard Air Freight uses **scheduled airline capacity** (passenger belly space or freighter aircraft) to move consolidated shipments across global routes.

Key characteristics

- Consolidated shipments from multiple customers
- Scheduled departures (daily/weekly)
- Airport-to-airport service
- High reliability
- Faster than sea/road, cheaper than express air
- Suitable for medium-urgency cargo

Typical shipment size

- 50 kg to several tons
- Palletized or loose cargo
- Standard ULDs (e.g., PMC, AKE, PAG)

2. Customer Segments

Standard Air Freight is used by companies needing **fast, reliable international transport** without the premium cost of express services.

Ideal customers

- High-tech & electronics
- Automotive (non-AOG)
- Fashion & retail
- Pharmaceuticals



- E-commerce (international)
- Industrial manufacturers
- Perishables (non-express)

Customer needs

- Faster transit than sea
- Predictable schedules
- Global coverage
- Reasonable cost
- Secure handling

3. Value Proposition

Operational value

- Fast global transit times
- High reliability
- Secure handling and storage
- Suitable for a wide range of cargo types

Commercial value

- Lower cost than express air
- Predictable pricing
- Consolidation reduces cost per kg

Strategic value

- Supports global supply chains
- Ideal for replenishment and mid-urgency shipments

4. Service Scope

Included

- Airport-to-airport transport
- Consolidation into ULDs
- Handling at origin and destination airports
- Standard security screening



- Basic tracking
- Standard insurance

Optional add-ons

- Door-to-door service
- Customs clearance
- Temperature-controlled air freight
- Dangerous goods (IATA DGR)
- Priority loading
- CO₂ reporting
- White-glove handling
- Cargo insurance upgrades

5. Operational Workflow

1. Pickup (optional)

- Cargo collected from shipper
- Export documentation prepared

2. Origin handling

- Security screening
- Weighing and dimensioning
- Consolidation into ULDs
- Airline booking confirmation

3. Air transport

- Loaded onto scheduled flight
- Transit via hub (if needed)
- Monitoring and tracking

4. Destination handling

- ULD breakdown
- Import clearance
- Cargo availability notice



5. Delivery (optional)

- Final mile delivery to consignee
- POD (proof of delivery)

6. Pricing Model

Standard Air Freight pricing is based on **chargeable weight** and airline tariffs.

Common pricing structures

- **Per kg** (based on chargeable weight)
- **Airline tariff rates**
- **Fuel surcharge**
- **Security surcharge**
- **Handling fees**
- **Airport fees**

Cost drivers

- Weight vs. volume (chargeable weight)
- Route and airline
- Transit time (standard vs. priority)
- Seasonality (peak season surcharges)
- Special handling requirements

7. Key KPIs

Operational KPIs

- On-time departure (%)
- On-time arrival (%)
- Damage rate (%)
- Transit time accuracy
- ULD utilization

Commercial KPIs

- Revenue per kg
- Margin per shipment



- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per kg
- Fuel efficiency

8. Risks & Challenges

Operational risks

- Flight delays
- Capacity shortages
- Airport congestion
- Misrouting

Commercial risks

- Rate volatility
- Competition from integrators
- Seasonal capacity constraints

Regulatory risks

- IATA DGR compliance
- Security screening requirements
- Customs regulations

9. Differentiators (How to stand out)

A. Network strength

- Access to multiple airlines
- Strong global coverage
- Priority space agreements

B. Visibility

- Real-time tracking
- Milestone updates
- Exception management



C. Handling quality

- Secure storage
- Professional ULD build-up
- Low damage rates

D. Specialization

- Pharma air (GDP)
- High-tech
- Perishables
- Dangerous goods

E. Customer experience

- Transparent pricing
- Fast quoting
- Proactive communication

10. When Standard Air Freight is the best solution

It is ideal when:

- The shipment is urgent but not critical
- Sea freight is too slow
- Cost is a factor (vs. express air)
- Global coverage is required
- Cargo needs secure, reliable handling



2.1. Air Freight – Express Air

(Priority, Time-Critical Air Freight)

Definition:

Express Air is the **fastest and highest-priority air freight service**, designed for shipments that must move **immediately**, often on the **next available flight (NAF)** or via **priority loading** on scheduled flights.

It is used for **critical, high-value, or emergency shipments** where every hour counts.

Express Air is the **premium tier** of air cargo — faster than Standard Air, more flexible, and often supported by **dedicated handling teams**.

1. Product Description

Express Air uses **priority booking, fast-lane handling, and guaranteed uplift** to ensure the shipment moves on the **earliest possible flight**.

Key characteristics

- Priority handling at origin and destination
- Guaranteed space allocation
- Next Flight Out (NFO) options
- Shortest possible transit times
- Airport-to-airport or door-to-door
- High reliability and visibility

Typical shipment size

- 1 kg to several hundred kg
- Small pallets or boxes
- High-value or urgent cargo

2. Customer Segments

Express Air is used by industries where **time is critical**, and delays cause major financial or operational impact.

Ideal customers

- Aerospace (AOG – Aircraft on Ground)
- Automotive (line-stopping parts)



- High-tech & electronics
- Medical & pharma (urgent supplies)
- E-commerce premium shipments
- Industrial spare parts
- Luxury goods

Customer needs

- Fastest possible transit
- Guaranteed uplift
- Real-time visibility
- Minimal handling
- High security

3. Value Proposition

Operational value

- Fastest global transport option
- Priority loading and unloading
- Minimal dwell time at airports
- Dedicated handling teams

Commercial value

- Premium pricing
- High customer willingness to pay
- Reduced downtime costs

Strategic value

- Supports emergency supply chains
- Prevents production stoppages
- Enables global just-in-time operations

4. Service Scope

Included

- Priority booking



- Fast-lane airport handling
- Guaranteed uplift on earliest flight
- Standard security screening
- Basic tracking
- POD (proof of delivery)

Optional add-ons

- Door-to-door service
- On-Board Courier (OBC)
- Charter flight options
- Temperature-controlled express
- Dangerous goods (IATA DGR)
- CO₂ reporting
- White-glove handling
- Customs clearance

5. Operational Workflow

1. Booking

- Immediate request
- Shipment details (weight, dimensions, urgency)
- Flight availability check

2. Origin handling

- Priority acceptance
- Security screening
- Fast-lane ULD build-up
- Guaranteed loading

3. Air transport

- Next available flight
- Direct or hub-based routing
- Real-time tracking



4. Destination handling

- Priority breakdown
- Immediate availability
- Customs clearance (if required)

5. Delivery (optional)

- Express last-mile delivery
- POD sent to customer

6. Pricing Model

Express Air pricing is **premium** and reflects urgency and guaranteed uplift.

Common pricing structures

- **Per kg** (higher than standard air)
- **Priority surcharge**
- **NFO surcharge**
- **Fuel surcharge**
- **Security surcharge**
- **Handling fees**

Cost drivers

- Chargeable weight
- Route and airline
- Urgency level
- Special handling requirements
- Seasonality (peak periods)

7. Key KPIs

Operational KPIs

- On-time uplift (%)
- On-time arrival (%)
- Transit time accuracy
- Incident rate



- Priority handling performance

Commercial KPIs

- Revenue per kg
- Margin per shipment
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per kg
- Fuel efficiency

8. Risks & Challenges

Operational risks

- Flight delays
- Capacity shortages
- Airport congestion
- Misrouting

Commercial risks

- High cost
- Competition from integrators (DHL Express, FedEx, UPS)
- Rate volatility

Regulatory risks

- IATA DGR compliance
- Security screening requirements
- Customs regulations

9. Differentiators (How to stand out)

A. Speed

- Guaranteed uplift
- Next Flight Out
- Priority handling



B. Visibility

- Real-time tracking
- Milestone updates
- Proactive communication

C. Handling quality

- Dedicated express teams
- Secure storage
- Low damage rates

D. Specialization

- AOG express
- Pharma express
- High-value express
- Temperature-controlled express

E. Customer experience

- Fast quoting
- Transparent pricing
- 24/7 support

10. When Express Air is the best solution

Express Air is ideal when:

- The shipment is extremely urgent
- Standard air freight is too slow
- Production downtime must be avoided
- Cargo is high-value or sensitive
- The customer needs guaranteed uplift



2.2. Air Freight – AOG (Aircraft on Ground Service)

Definition:

AOG service is an **ultra-priority air logistics product** designed to deliver aircraft parts and critical components **as fast as physically possible** to get a grounded aircraft back into operation.

Every hour an aircraft is grounded can cost an airline **tens of thousands of euros**, making AOG logistics one of the **highest-urgency and highest-value** services in global freight.

AOG is the **top tier** of time-critical logistics faster than Express Air, faster than NFO, and often involving **hand-carried shipments**.

1. Product Description

AOG shipments are handled with **maximum priority**, bypassing standard processes and receiving **immediate uplift** on the next available flight or via **dedicated charter**.

Key characteristics

- Immediate pickup (often within 30–60 minutes)
- Next Flight Out (NFO) or dedicated charter
- 24/7/365 operations
- Minimal handling, maximum speed
- Often hand-carried (OBC) for small parts
- Highest priority at airports and airlines

Typical shipment types

- Aircraft spare parts (engines, avionics, landing gear)
- Tools and repair equipment
- Emergency replacement components
- Critical documentation

2. Customer Segments

AOG logistics is used by companies where **every minute of downtime is extremely costly**.

Ideal customers

- Airlines
- MROs (Maintenance, Repair & Overhaul providers)



- Aircraft manufacturers (OEMs)
- Aerospace suppliers
- Leasing companies
- Airport maintenance teams

Customer needs

- Fastest possible delivery
- Guaranteed uplift
- Real-time visibility
- Zero tolerance for delays
- 24/7 availability

3. Value Proposition

Operational value

- Fastest global transport option
- Immediate handling and uplift
- Dedicated AOG teams
- Minimal dwell time

Commercial value

- Premium pricing
- High willingness to pay
- Avoids massive downtime costs

Strategic value

- Keeps aircraft operational
- Supports global airline reliability
- Reduces operational disruptions

4. Service Scope

Included

- Immediate pickup
- Priority handling at airports



- Next Flight Out (NFO)
- Dedicated AOG coordination
- Real-time tracking
- Standard security screening
- POD (proof of delivery)

Optional add-ons

- On-Board Courier (OBC)
- Dedicated charter aircraft
- Customs pre-clearance
- Temperature-controlled AOG
- Dangerous goods (IATA DGR)
- CO₂ reporting
- White-glove handling

5. Operational Workflow

1. Booking

- AOG alert received
- Immediate response (24/7)
- Flight availability check
- Fast documentation preparation

2. Pickup

- Courier or van dispatched instantly
- Cargo collected within 30–60 minutes

3. Airport handling

- Priority acceptance
- Fast-lane screening
- Immediate loading

4. Air transport

- Next available flight



- Direct or hub-based routing
- Real-time tracking

5. Delivery

- Priority unloading
- Immediate handover to MRO/airline
- POD with timestamp

6. Post-processing

- Incident review
- Customer reporting
- Cost breakdown

6. Pricing Model

AOG pricing is **premium** and reflects urgency, risk, and guaranteed uplift.

Common pricing structures

- **Per kg** (premium rate)
- **AOG surcharge**
- **NFO surcharge**
- **OBC surcharge**
- **Charter flight cost**
- **Handling fees**
- **Night/weekend surcharge**

Cost drivers

- Urgency
- Route and airline
- Weight and dimensions
- Special handling
- Customs complexity

7. Key KPIs

Operational KPIs



- Response time
- On-time uplift (%)
- On-time delivery (%)
- Transit time accuracy
- Incident rate

Commercial KPIs

- Revenue per shipment
- Margin per shipment
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per shipment
- Fuel efficiency

8. Risks & Challenges

Operational risks

- Flight delays
- Capacity shortages
- Customs delays
- Misrouting

Commercial risks

- Very high customer expectations
- High liability exposure
- Competition from integrators

Regulatory risks

- IATA DGR compliance
- Security screening
- Customs regulations

9. Differentiators (How to stand out)



A. Speed

- 24/7 AOG desk
- Guaranteed uplift
- OBC availability

B. Visibility

- Real-time tracking
- Proactive updates
- Milestone reporting

C. Handling quality

- Dedicated AOG teams
- Secure storage
- Minimal handling

D. Specialization

- Engine transport
- Avionics
- High-value components
- Temperature-controlled AOG

E. Customer experience

- Instant quoting
- Transparent communication
- End-to-end coordination

10. When AOG is the best solution

AOG is essential when:

- An aircraft is grounded
- Every hour of delay costs thousands
- The shipment is critical for safety or operations
- Standard or express air is too slow
- The customer needs guaranteed uplift and delivery



2.3. Air Freight – Pharma Air

(GDP-Compliant Transport)

Definition:

Pharma Air is a specialized air freight service designed for the **safe, compliant, and temperature-controlled transport of pharmaceutical products**.

It follows **GDP (Good Distribution Practice)** guidelines to ensure product integrity, patient safety, and regulatory compliance throughout the entire supply chain.

Pharma Air is one of the **highest-precision and highest-trust** logistics products in the industry.

1. Product Description

Pharma Air ensures that pharmaceutical cargo is transported under **strict temperature, handling, and documentation controls**.

Key characteristics

- Fully GDP-compliant processes
- Temperature-controlled handling and storage
- Dedicated pharma handling teams
- Secure, monitored ULDs and containers
- End-to-end traceability
- Zero-deviation tolerance

Typical temperature ranges

- **+2°C to +8°C** (chilled)
- **+15°C to +25°C** (ambient controlled)
- **-20°C** (frozen)
- **Dry ice shipments** (-78°C)
- **Cryogenic** (liquid nitrogen, -150°C and below)

2. Customer Segments

Pharma Air is used by industries where **product integrity and patient safety** are critical.

Ideal customers

- Pharmaceutical manufacturers



- Biotech companies
- Clinical trial organizations
- Hospitals and medical distributors
- Vaccine producers
- Life science companies
- Blood and plasma suppliers

Customer needs

- Temperature integrity
- Regulatory compliance
- Real-time visibility
- Secure handling
- Zero-deviation operations

3. Value Proposition

Operational value

- Continuous temperature control
- Dedicated pharma handling at airports
- Secure storage and transport
- Reduced risk of spoilage

Commercial value

- Premium pricing
- High customer loyalty
- Strong differentiation

Strategic value

- Supports global healthcare supply chains
- Enables safe distribution of vaccines, medicines, and biologics

4. Service Scope

Included

- GDP-compliant handling



- Temperature-controlled storage
- Temperature-controlled ULDs or packaging
- Security screening
- Standard tracking
- Documentation management

Optional add-ons

- Real-time temperature monitoring
- Active containers (Envirotainer, CSafe, DoKaSch)
- Passive packaging solutions
- Dry ice replenishment
- Customs pre-clearance
- CO₂ reporting
- White-glove handling
- Door-to-door service

5. Operational Workflow

1. Pre-shipment

- Temperature setpoint validation
- Packaging verification
- Documentation check (SOPs, GDP forms)

2. Origin handling

- Temperature-controlled acceptance
- Secure storage
- ULD build up in controlled environment

3. Air transport

- Priority loading
- Temperature-controlled compartments
- Real-time monitoring (if active containers)

4. Destination handling



- Temperature-controlled breakdown
- Immediate transfer to cold storage
- Customs clearance

5. Delivery

- Temperature-controlled last mile
- POD with temperature log

6. Pricing Model

Pharma Air commands **premium pricing** due to compliance, equipment, and risk.

Common pricing structures

- **Per kg** (premium rate)
- **Temperature-control surcharge**
- **Active container rental**
- **Dry ice surcharge**
- **Security surcharge**
- **Handling fees**

Cost drivers

- Temperature range
- Packaging type (active vs passive)
- Route and airline
- Seasonality
- Handling complexity

7. Key KPIs

Operational KPIs

- Temperature deviation rate (%)
- On-time delivery (%)
- Compliance audit score
- Incident rate
- Container performance



Commercial KPIs

- Revenue per kg
- Margin per shipment
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per kg
- Packaging efficiency

8. Risks & Challenges

Operational risks

- Temperature excursions
- Handling errors
- Equipment failure
- Airport delays

Commercial risks

- High liability exposure
- Strict customer expectations
- High cost of active containers

Regulatory risks

- GDP compliance
- IATA CEIV Pharma requirements
- Local health authority regulations

9. Differentiators (How to stand out)

A. Compliance excellence

- GDP certification
- CEIV Pharma accreditation
- Regular audits

B. Technology



- Real-time temperature tracking
- Smart ULDs
- Automated alerts

C. Handling quality

- Dedicated pharma teams
- Cold-chain facilities
- Zero-deviation processes

D. Specialization

- Vaccine logistics
- Clinical trial logistics
- Biologics and cell therapy transport

E. Customer experience

- Transparent reporting
- Proactive communication
- End-to-end visibility

10. When Pharma Air is the best solution

Pharma Air is essential when:

- Product integrity depends on temperature
- Regulations require GDP compliance
- The shipment is high-value or sensitive
- Standard air freight is too risky
- The customer needs full traceability



2.4. Air Freight – High-Value Air

(Secure, High-Value Cargo)

Definition:

High-Value Air is a specialized air freight service designed for the **secure, monitored, and compliant transport of high-value or theft-sensitive cargo**.

It includes enhanced security measures, restricted handling, and priority processes to ensure **maximum protection and traceability** throughout the entire journey.

This is one of the **highest-margin, highest-trust** products in air logistics.

1. Product Description

High-Value Air ensures that valuable cargo is transported with **enhanced security, restricted access, and continuous monitoring**.

Key characteristics

- Secure handling at origin and destination
- Restricted access zones
- Priority loading and unloading
- Enhanced surveillance and monitoring
- Tamper-evident seals and documentation
- Dedicated high-value storage areas

Typical cargo

- Luxury goods (watches, jewelry, fashion)
- Consumer electronics
- High-value pharmaceuticals
- Cash, bullion, precious metals
- Artwork and collectibles
- High-value automotive parts
- Confidential documents or prototypes

2. Customer Segments

High-Value Air is used by industries where **security, confidentiality, and risk mitigation** are essential.



Ideal customers

- Luxury brands
- Electronics manufacturers
- Banks and financial institutions
- Art galleries and museums
- High-tech companies
- Automotive OEMs
- Pharmaceutical companies

Customer needs

- Maximum security
- Zero-loss tolerance
- Full traceability
- Priority handling
- Discreet operations

3. Value Proposition

Operational value

- Secure, controlled handling
- Reduced risk of theft or damage
- Priority processes reduce dwell time

Commercial value

- Premium pricing
- High customer loyalty
- Strong differentiation

Strategic value

- Protects brand reputation
- Enables safe global distribution of high-value goods

4. Service Scope

Included



- Secure acceptance and handling
- Priority loading/unloading
- Restricted access storage
- Tamper-evident seals
- Standard tracking
- Security screening

Optional add-ons

- Real-time GPS tracking
- Escort services (airport or ground)
- High-security vault storage
- Armored vehicle pickup/delivery
- CO₂ reporting
- White-glove handling
- Insurance upgrades
- Dedicated charter for high-value cargo

5. Operational Workflow

1. Pre-shipment

- Security risk assessment
- Packaging verification
- Documentation check

2. Origin handling

- Secure acceptance
- Storage in high-value vault
- Priority ULD build-up
- Tamper-evident sealing

3. Air transport

- Priority loading
- Restricted access on aircraft



- Monitoring and tracking

4. Destination handling

- Secure breakdown
- Immediate transfer to vault
- Customs clearance

5. Delivery

- Secure last-mile transport
- POD with security confirmation

6. Pricing Model

High-Value Air commands **premium pricing** due to security, risk, and specialized handling.

Common pricing structures

- **Per kg** (premium rate)
- **High-value surcharge**
- **Security surcharge**
- **Escort fees**
- **Vault storage fees**
- **Insurance premiums**

Cost drivers

- Cargo value
- Security requirements
- Route and airline
- Handling complexity
- Packaging type

7. Key KPIs

Operational KPIs

- Zero-loss rate
- Zero-tamper rate



- On-time delivery (%)
- Security incident rate
- Handling compliance score

Commercial KPIs

- Revenue per kg
- Margin per shipment
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per kg
- Packaging efficiency

8. Risks & Challenges

Operational risks

- Theft or tampering
- Mishandling
- Airport security breaches
- Misrouting

Commercial risks

- High liability exposure
- High insurance costs
- Strict customer expectations

Regulatory risks

- Security screening requirements
- Customs regulations
- Export controls

9. Differentiators (How to stand out)

A. Security excellence

- Vault storage



- Restricted access
- Tamper-evident processes

B. Technology

- Real-time GPS tracking
- Smart seals
- Automated alerts

C. Handling quality

- Dedicated high-value teams
- Secure ULD build-up
- Priority processing

D. Specialization

- Luxury goods
- High-tech electronics
- Art and collectibles
- High-value pharma

E. Customer experience

- Discreet operations
- Transparent reporting
- 24/7 support

10. When High-Value Air is the best solution

High-Value Air is essential when:

- Cargo is theft-sensitive or extremely valuable
- Standard air freight is too risky
- The customer needs maximum security
- Full traceability is required
- Brand reputation must be protected



2.5. Air Freight – Charter

(Full or Partial Aircraft Charter)

Definition:

Air Charter is a premium air freight service where a **full aircraft** (or a defined portion of its capacity) is **exclusively reserved** for a customer's cargo.

It provides **maximum flexibility, speed, and control**, making it ideal for oversized, urgent, or high-volume shipments that cannot move efficiently on scheduled flights.

Charter is the **highest-flexibility product** in air logistics tailored routes, tailored schedules, tailored aircraft.

1. Product Description

Charter services use **dedicated aircraft** cargo planes, passenger aircraft belly holds, or specialized freighters to move cargo on **custom routes and schedules**.

Key characteristics

- Full or partial aircraft reservation
- Tailored departure times and routes
- No dependency on airline schedules
- Direct point-to-point transport
- Suitable for oversized, urgent, or high-volume cargo
- High operational control and reliability

Typical aircraft types

- Narrow-body freighters (B737F, A321F)
- Wide-body freighters (B747F, B777F, A330F)
- Turboprop freighters (ATR72F, AN-26)
- Heavy-lift aircraft (AN-124, IL-76)
- Passenger aircraft (for belly-only charters)

2. Customer Segments

Charter is used by industries with **critical, oversized, or time-sensitive cargo**.

Ideal customers

- Automotive (line-stopping parts)



- Aerospace (AOG, engines, components)
- Oil & gas (rig equipment)
- Energy sector (turbines, transformers)
- Humanitarian organizations
- Government & defense
- High-tech manufacturers
- Event logistics (concerts, exhibitions)

Customer needs

- Full control over timing
- Direct routing
- Ability to move large or unusual cargo
- Guaranteed capacity
- High reliability

3. Value Proposition

Operational value

- Direct, nonstop routing
- No transshipment or consolidation
- Maximum cargo protection
- Ability to move oversized or heavy cargo

Commercial value

- Predictable cost structure
- Guaranteed capacity
- Faster than scheduled air freight

Strategic value

- Enables emergency operations
- Supports large-scale industrial projects
- Provides global reach to remote locations

4. Service Scope



Included

- Aircraft sourcing and booking
- Flight planning and permits
- Ground handling at origin and destination
- Load planning and ULD buildup
- Standard security screening
- Basic tracking

Optional add-ons

- On-Board Courier (OBC)
- High-security handling
- Temperature-controlled charter
- Dangerous goods (IATA DGR)
- Military or humanitarian clearances
- CO₂ reporting
- Door-to-door service
- Crane and special loading equipment

5. Operational Workflow

1. Pre-planning

- Cargo assessment (dimensions, weight, packaging)
- Aircraft selection
- Route and permit planning
- Ground handling coordination

2. Pickup (optional)

- Cargo collected from shipper
- Export documentation prepared

3. Origin handling

- Build-up of pallets or bulk cargo
- Security screening



- Loading with specialized equipment if needed

4. Air transport

- Direct flight
- Real-time monitoring
- Dedicated operations team

5. Destination handling

- Unloading
- Customs clearance
- Transfer to final delivery

6. Delivery (optional)

- Last-mile transport
- POD (proof of delivery)

6. Pricing Model

Charter pricing is **project-based** and reflects aircraft type, distance, and operational complexity.

Common pricing structures

- **Per flight** (full aircraft charter)
- **Per block hour**
- **Partial charter rate** (shared capacity)
- **Fuel surcharge**
- **Airport and handling fees**
- **Permit and overflight fees**

Cost drivers

- Aircraft type
- Distance and routing
- Cargo weight and dimensions
- Airport availability
- Special handling requirements



- Seasonality and market capacity

7. Key KPIs

Operational KPIs

- On-time departure (%)
- On-time arrival (%)
- Load efficiency
- Incident rate
- Permit approval time

Commercial KPIs

- Revenue per flight
- Margin per project
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per ton-km
- Fuel efficiency

8. Risks & Challenges

Operational risks

- Permit delays
- Weather disruptions
- Aircraft availability
- Ground handling constraints

Commercial risks

- High cost
- Market volatility
- Limited aircraft availability in peak season

Regulatory risks

- Overflight and landing permits



- IATA DGR compliance
- Customs regulations

9. Differentiators (How to stand out)

A. Aircraft access

- Large global charter network
- Access to rare aircraft types
- Priority availability

B. Expertise

- Strong project management
- Engineering support for oversized cargo
- Permit and route planning expertise

C. Handling quality

- Specialized loading equipment
- Secure handling
- Dedicated charter teams

D. Flexibility

- Tailored schedules
- Remote or hard-to-reach destinations
- Multi-stop missions

E. Customer experience

- Transparent pricing
- 24/7 operations
- Real-time updates

10. When Charter is the best solution

Charter is ideal when:

- Cargo is oversized or extremely heavy
- Scheduled flights cannot meet the deadline
- The destination is remote or underserved



- Guaranteed capacity is required
- The shipment is mission-critical



3.0. Sea Freight – FCL (Full Container Load)

Definition:

FCL is a sea freight product where a **single customer books an entire container**, regardless of whether it is fully loaded or not.

It is the **most secure, efficient, and cost-effective** option for medium-to-large international shipments and forms the backbone of global trade.

FCL is the **standard product** for global supply chains due to its reliability, simplicity, and scalability.

1. Product Description

FCL involves transporting a sealed container from origin to destination with **no consolidation or deconsolidation**.

The container remains sealed throughout the journey, reducing risk and handling.

Key characteristics

- Entire container reserved for one shipper
- Sealed at origin, opened only at destination
- Minimal handling
- High security and reliability
- Suitable for large volumes or sensitive cargo

Typical container types

- **20' Standard**
- **40' Standard**
- **40' High Cube**
- **45' High Cube**
- **Reefer containers**
- **Open-top / flat rack** (for oversized cargo)

2. Customer Segments

FCL is used by companies with **medium to high shipment volumes** or cargo requiring **secure, sealed transport**.

Ideal customers

- Manufacturing (automotive, machinery, electronics)



- Retail & FMCG
- Chemicals (non-hazardous or ADR-compliant)
- Food & beverage
- E-commerce importers
- Construction materials
- Furniture and home goods

Customer needs

- Cost-effective long-distance transport
- Secure, sealed cargo
- Predictable transit times
- Global coverage
- Low handling risk

3. Value Proposition

Operational value

- Minimal handling reduces damage risk
- Predictable schedules
- High cargo security
- Suitable for large or heavy shipments

Commercial value

- Lower cost per unit than air freight
- Economies of scale
- Transparent pricing

Strategic value

- Supports global supply chains
- Ideal for regular import/export flows

4. Service Scope

Included

- Container provision



- Ocean transport
- Terminal handling
- Basic documentation
- Standard insurance
- Tracking (milestone-based)

Optional add-ons

- Door-to-door service
- Customs clearance
- Reefer temperature control
- Dangerous goods (IMDG)
- VGM (Verified Gross Mass) handling
- Pre-carriage and on-carriage
- CO₂ reporting
- Container stuffing/unstuffing

5. Operational Workflow

1. Pre-carriage (optional)

- Container delivered to shipper
- Loading and sealing
- Transport to port

2. Origin port handling

- Terminal acceptance
- Weighing (VGM)
- Loading onto vessel

3. Ocean transport

- Scheduled sailing
- Transshipment (if applicable)
- Tracking updates

4. Destination port handling



- Unloading
- Customs clearance
- Container release

5. On-carriage (optional)

- Delivery to consignee
- Unloading and container return

6. Pricing Model

FCL pricing is based on **container type, route, and market conditions.**

Common pricing structures

- **Per container** (flat rate)
- **BAF (Bunker Adjustment Factor)**
- **CAF (Currency Adjustment Factor)**
- **Peak season surcharge**
- **Terminal handling charges (THC)**
- **Documentation fees**

Cost drivers

- Container type
- Route and distance
- Market capacity (spot vs contract)
- Seasonality
- Port congestion
- Fuel prices

7. Key KPIs

Operational KPIs

- On-time departure (%)
- On-time arrival (%)
- Container dwell time
- Damage rate (%)



- Transshipment accuracy

Commercial KPIs

- Revenue per container
- Margin per shipment
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per TEU
- Fuel efficiency

8. Risks & Challenges

Operational risks

- Port congestion
- Vessel delays
- Container shortages
- Weather disruptions

Commercial risks

- Rate volatility
- Blank sailings
- High demurrage/detention charges

Regulatory risks

- Customs delays
- IMDG compliance (for dangerous goods)
- VGM requirements

9. Differentiators (How to stand out)

A. Reliability

- Strong carrier partnerships
- Priority space allocation
- Predictable schedules



B. Visibility

- Real-time tracking
- Milestone updates
- Exception management

C. Handling quality

- Professional stuffing/unstuffing
- Secure sealing
- Low damage rates

D. Specialization

- Reefer FCL
- Dangerous goods (IMDG)
- Oversized cargo (flat rack, open-top)

E. Customer experience

- Transparent pricing
- Fast quoting
- End-to-end coordination

10. When FCL is the best solution

FCL is ideal when:

- The shipment fills most of a container
- Cargo is sensitive or high-value
- Handling must be minimized
- Predictable transit times are needed
- The customer wants a sealed, secure solution



3.1. Sea Freight – LCL (Less-Than-Container Load)

Definition:

LCL is a sea freight product where **multiple customers share space in a single container**.

Shipments that are too small to fill a full container are **consolidated** at origin and **deconsolidated** at destination through a freight forwarders or consolidator's network.

LCL is the **most cost-effective** way to ship small to medium volumes internationally by sea.

1. Product Description

LCL involves combining multiple shipments into one container.

Each shipment is handled individually but travels as part of a consolidated load.

Key characteristics

- Shared container space
- Consolidation at Origin, deconsolidation at destination
- Fixed weekly sailings on major trade lanes
- Lower cost than FCL for small volumes
- Longer transit time due to handling steps
- Ideal for 1–12 m³ shipments

Typical shipment size

- 1–12 m³
- 50–3,000 kg
- Palletized or boxed cargo

2. Customer Segments

LCL is used by companies with **small, frequent, or irregular shipments**.

Ideal customers

- SMEs
- E-commerce importers
- Retailers
- Industrial suppliers



- Fashion & textiles
- Electronics distributors
- Spare parts suppliers

Customer needs

- Cost-effective global shipping
- No need to book a full container
- Predictable weekly departures
- Secure handling
- Flexible shipment sizes

3. Value Proposition

Operational value

- Efficient for small volumes
- Weekly consolidation schedules
- Global coverage
- Secure handling

Commercial value

- Lower cost than FCL for small shipments
- No minimum volume
- Predictable tariffs

Strategic value

- Supports flexible supply chains
- Ideal for regular replenishment flows

4. Service Scope

Included

- Consolidation at origin
- Ocean transport
- Deconsolidation at destination
- Terminal handling



- Standard documentation
- Basic tracking

Optional add-ons

- Door-to-door service
- Customs clearance
- Insurance upgrades
- Dangerous goods (IMDG)
- CO₂ reporting
- Pickup and delivery
- Palletization or repacking

5. Operational Workflow

1. Pre-carriage (optional)

- Pickup from shipper
- Delivery to consolidation warehouse

2. Origin CFS (Container Freight Station)

- Cargo acceptance
- Weighing and dimensioning
- Consolidation into LCL container

3. Ocean transport

- Weekly sailing
- Transshipment (if applicable)
- Tracking updates

4. Destination CFS

- Container devanning
- Sorting by consignee
- Cargo availability notice

5. On-carriage (optional)

- Delivery to consignee



- POD (proof of delivery)

6. Pricing Model

LCL pricing is based on **chargeable volume** and **handling fees**.

Common pricing structures

- **Per W/M** (weight/measure — whichever is higher)
- **Origin CFS charges**
- **Destination CFS charges**
- **Documentation fees**
- **BAF/CAF surcharges**
- **Peak season surcharge**

Cost drivers

- Volume (m³)
- Weight (kg)
- Trade lane
- Handling complexity
- Seasonality
- Port congestion

7. Key KPIs

Operational KPIs

- Consolidation accuracy
- On-time departure (%)
- On-time arrival (%)
- Damage rate (%)
- CFS dwell time

Commercial KPIs

- Revenue per W/M
- Margin per shipment
- Customer retention



- Claim rate

Sustainability KPIs

- CO₂ emissions per m³
- Container utilization

8. Risks & Challenges

Operational risks

- Longer transit times due to consolidation
- Higher damage risk (more handling)
- CFS congestion
- Misrouting

Commercial risks

- Price sensitivity
- Competition from FCL during low-rate periods
- High destination charges

Regulatory risks

- Customs delays
- IMDG compliance
- VGM requirements

9. Differentiators (How to stand out)

A. Network strength

- High-frequency consolidations
- Strong global CFS network
- Reliable weekly schedules

B. Visibility

- Milestone tracking
- Exception management
- Predictable ETAs

C. Handling quality



- Professional consolidation
- Secure packaging
- Low damage rates

D. Specialization

- LCL for dangerous goods
- Temperature-controlled LCL
- E-commerce LCL

E. Customer experience

- Transparent pricing
- Fast quoting
- End-to-end coordination

10. When LCL is the best solution

LCL is ideal when:

- Shipment volume is too small for FCL
- Cost efficiency is important
- The customer ships frequently
- Transit time flexibility exists
- The shipment does not justify a full container



3.2. Sea Freight – Break Bulk

(Non-Containerized Cargo)

Definition:

Break Bulk refers to the transport of **non-containerized cargo** that is loaded individually onto a vessel rather than inside containers.

This includes **oversized, heavy, irregular, or project cargo** that cannot fit into standard containers.

Break Bulk is essential for **industrial, energy, and infrastructure projects** where cargo dimensions exceed container limits.

It is one of the **most specialized and operationally complex** products in sea logistics.

1. Product Description

Break Bulk cargo is handled as **individual units**—lifted, rolled, or driven onto vessels using specialized equipment.

Key characteristics

- Cargo is not containerized
- Loaded individually using cranes or Ro-Ro ramps
- Suitable for oversized, heavy, or irregular cargo
- Requires specialized handling and stowage planning
- Often shipped on multipurpose (MPP) or heavy-lift vessels

Typical cargo

- Steel coils, pipes, beams
- Machinery and industrial equipment
- Wind turbine components
- Transformers and generators
- Construction materials
- Boats and yachts
- Project cargo for energy and infrastructure

2. Customer Segments

Break Bulk is used by industries with **large, heavy, or irregular cargo** that cannot be containerized.



Ideal customers

- Energy sector (wind, solar, oil & gas)
- Heavy industry
- Construction and infrastructure
- Mining
- Machinery manufacturers
- Maritime and offshore
- Engineering and project logistics firms

Customer needs

- Safe handling of oversized cargo
- Specialized equipment
- Route and stowage planning
- High reliability
- Compliance with port and vessel restrictions

3. Value Proposition

Operational value

- Ability to move cargo too large for containers
- Tailored stowage and lifting solutions
- Access to specialized vessels
- Reduced risk for heavy or sensitive cargo

Commercial value

- Predictable project-based pricing
- High value-added service
- Lower cost than air charter for oversized cargo

Strategic value

- Enables major industrial and infrastructure projects
- Supports global supply chains for heavy equipment

4. Service Scope



Included

- Cargo assessment
- Stowage planning
- Vessel booking
- Port handling
- Lifting and securing
- Standard documentation

Optional add-ons

- Engineering drawings
- Route surveys
- Heavy-lift cranes
- Barge transport
- Customs clearance
- CO₂ reporting
- Door-to-door project logistics
- Marine warranty surveys (MWS)

5. Operational Workflow

1. Pre-planning

- Cargo dimensions and weight assessment
- Lifting and securing plan
- Vessel and port capability check
- Engineering review

2. Port of loading

- Cargo arrival and staging
- Lifting or rolling onto vessel
- Securing and lashing
- Final stowage inspection

3. Sea transport



- Voyage monitoring
- Weather routing
- Cargo stability checks

4. Port of discharge

- Controlled unloading
- Transfer to trucks, barges, or storage
- Documentation handover

5. On-carriage (optional)

- Heavy-haul transport
- Delivery to project site
- Crane unloading

6. Pricing Model

Break Bulk pricing is **project-based** and reflects cargo complexity and vessel availability.

Common pricing structures

- **Per freight ton (W/M)**
- **Project-based lump sum**
- **Port handling charges**
- **Lifting and securing fees**
- **Heavy-lift surcharge**
- **Documentation fees**

Cost drivers

- Cargo dimensions and weight
- Lifting requirements
- Vessel type and availability
- Port capabilities
- Route complexity
- Seasonality



7. Key KPIs

Operational KPIs

- Lifting accuracy
- Stowage quality
- Damage rate (%)
- On-time departure/arrival
- Port dwell time

Commercial KPIs

- Revenue per freight ton
- Margin per project
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per ton-mile
- Vessel efficiency

8. Risks & Challenges

Operational risks

- Lifting accidents
- Weather delays
- Port equipment limitations
- Cargo damage due to improper securing

Commercial risks

- High liability exposure
- Market volatility
- Limited vessel availability

Regulatory risks

- Port restrictions
- IMDG compliance (if hazardous)



- Marine warranty survey requirements

9. Differentiators (How to stand out)

A. Engineering expertise

- Lifting plans
- Stowage calculations
- Route surveys

B. Vessel access

- Strong MPP and heavy-lift carrier network
- Priority space allocation
- Access to rare vessel types

C. Handling quality

- Professional lifting teams
- High-quality securing and lashing
- Zero-damage track record

D. Specialization

- Wind turbine logistics
- Industrial relocations
- Offshore and energy projects

E. Customer experience

- Transparent project management
- Real-time updates
- End-to-end coordination

10. When Break Bulk is the best solution

Break Bulk is ideal when:

- Cargo is too large or heavy for containers
- Specialized lifting is required
- The shipment is part of a major project
- Ports or routes cannot handle containerized alternatives



- The customer needs tailored stowage and handling

3.3. Sea Freight – RoRo

(Roll-On/Roll-Off, Rolling Cargo)

Definition:

RoRo is a sea freight product designed for **rolling, wheeled, or self-propelled cargo** that can be **driven on and off** a vessel using built-in ramps.

It is the safest and most efficient method for transporting **vehicles, machinery, trailers, and oversized rolling units** without lifting.

RoRo is the **preferred mode** for automotive logistics and heavy rolling equipment due to its **low handling risk and high operational efficiency**.

1. Product Description

RoRo vessels are equipped with **ramps and internal decks** that allow cargo to be driven or towed on board.

Cargo is secured inside the vessel, protected from weather and sea conditions.

Key characteristics

- No lifting — cargo is rolled or towed
- Ideal for vehicles and machinery
- Fast loading and unloading
- Low damage risk
- Suitable for oversized or heavy rolling units
- Enclosed decks protect cargo from weather

Typical cargo

- Cars, SUVs, vans
- Trucks, buses, trailers
- Construction machinery (excavators, bulldozers, cranes)
- Agricultural machinery (tractors, harvesters)
- Industrial equipment on wheels or skids
- Mafi trailers with static cargo

2. Customer Segments



RoRo is used by industries with **rolling or towable cargo** or cargo that can be placed on **Mafi trailers**.

Ideal customers

- Automotive manufacturers and distributors
- Construction and mining companies
- Agricultural equipment producers
- Machinery manufacturers
- Project logistics companies
- Heavy industry
- Government and defense

Customer needs

- Safe handling without lifting
- Efficient loading/unloading
- Protection from weather
- Cost-effective long-distance transport
- Ability to move oversized rolling units

3. Value Proposition

Operational value

- Minimal handling reduces damage risk
- Fast port operations
- Suitable for heavy and oversized rolling cargo
- Enclosed decks protect cargo

Commercial value

- Lower cost than containerizing large machinery
- Predictable schedules
- Attractive for high-volume automotive flows

Strategic value

- Supports global automotive supply chains



- Enables movement of large industrial equipment

4. Service Scope

Included

- Roll-on/roll-off loading
- Securing and lashing
- Ocean transport
- Terminal handling
- Standard documentation
- Basic tracking

Optional add-ons

- Door-to-door service
- Customs clearance
- Mafi trailer rental
- High-security handling
- CO₂ reporting
- Pre-delivery inspection (PDI)
- Vehicle washing or fumigation (for certain countries)

5. Operational Workflow

1. Pre-carriage (optional)

- Pickup using drivers or tow trucks
- Delivery to RoRo terminal

2. Port of loading

- Vehicle inspection
- Roll-on via ramp
- Securing and lashing inside vessel

3. Sea transport

- Enclosed deck protection
- Voyage monitoring



- Minimal cargo movement

4. Port of discharge

- Roll-off via ramp
- Inspection
- Customs clearance

5. On-carriage (optional)

- Delivery to consignee
- POD (proof of delivery)

6. Pricing Model

RoRo pricing is based on **cargo dimensions, weight, and lane.**

Common pricing structures

- **Per RT (Revenue Ton)**
- **Per lane meter**
- **Vehicle-based tariff** (cars, trucks, machinery)
- **Port handling charges**
- **Documentation fees**

Cost drivers

- Length, width, height
- Weight
- Rolling capability (self-propelled vs towed)
- Route and frequency
- Port capabilities
- Seasonality

7. Key KPIs

Operational KPIs

- Damage rate (%)
- On-time departure/arrival
- Port dwell time



- Lashing quality
- Vehicle inspection accuracy

Commercial KPIs

- Revenue per RT
- Margin per shipment
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per RT
- Vessel efficiency

8. Risks & Challenges

Operational risks

- Vehicle damage during driving or lashing
- Weather delays
- Port congestion
- Limited RoRo port availability

Commercial risks

- Rate volatility
- Competition from containerized alternatives
- High port fees

Regulatory risks

- Customs inspections
- Fumigation requirements
- IMDG compliance (if hazardous cargo on Mafi trailers)

9. Differentiators (How to stand out)

A. Vessel access

- Strong RoRo carrier partnerships
- Priority space allocation



- Access to high-capacity vessels

B. Handling quality

- Professional drivers
- High-quality lashing
- Zero-damage track record

C. Flexibility

- Mafi trailers for static cargo
- Oversized machinery handling
- Multi-port rotations

D. Specialization

- Automotive logistics
- Heavy machinery
- Project cargo on Mafi trailers

E. Customer experience

- Transparent pricing
- Real-time updates
- End-to-end coordination

10. When RoRo is the best solution

RoRo is ideal when:

- Cargo is rolling, towable, or can be placed on a Mafi trailer
- Lifting is risky or impossible
- The shipment is oversized or heavy
- The customer needs fast port operations
- Containerization is inefficient or too costly



3.4. Sea Freight – Reefer

(Refrigerated Containers)

Definition:

Reefer transport uses **temperature-controlled shipping containers** to move perishable or temperature-sensitive goods across global sea routes.

Reefer containers maintain a **constant temperature**, humidity, and ventilation level throughout the entire journey, ensuring **product integrity and regulatory compliance**.

Reefers are the **backbone of global cold-chain logistics**, enabling long-distance transport of food, pharmaceuticals, and other sensitive goods.

1. Product Description

Reefer containers are equipped with **integrated refrigeration units** that maintain a precise temperature range during ocean transport, port handling, and inland moves.

Key characteristics

- Temperature-controlled (+30°C to -30°C, depending on model)
- Humidity and ventilation control
- Continuous monitoring and data logging
- Suitable for perishable and sensitive cargo
- Available in 20' and 40' High Cube formats

Typical cargo

- Fresh produce (fruits, vegetables)
- Meat, poultry, seafood
- Dairy products
- Pharmaceuticals and vaccines
- Chemicals requiring temperature control
- Flowers and plants
- Frozen foods

2. Customer Segments

Reefer services are used by industries where **temperature integrity** is essential.

Ideal customers



- Food & beverage producers
- Retailers and supermarkets
- Pharmaceutical companies
- Chemical manufacturers
- Agricultural exporters
- Cold-chain distributors
- Seafood and meat processors

Customer needs

- Guaranteed temperature stability
- Regulatory compliance
- Real-time visibility
- Low spoilage risk
- Reliable global coverage

3. Value Proposition

Operational value

- Continuous temperature control
- Reduced spoilage and waste
- High cargo protection
- Suitable for long-distance global transport

Commercial value

- Premium pricing with strong margins
- High customer loyalty
- Predictable cost structure

Strategic value

- Enables global cold-chain supply chains
- Supports food security and pharma distribution

4. Service Scope

Included



- Reefer container provision
- Temperature setting and pre-trip inspection (PTI)
- Ocean transport
- Terminal handling
- Basic monitoring
- Standard documentation

Optional add-ons

- Real-time temperature tracking
- Remote container management (RCM)
- Humidity and ventilation control
- Controlled atmosphere (CA) technology
- Customs clearance
- Door-to-door cold-chain service
- CO₂ reporting
- Insurance upgrades

5. Operational Workflow

1. Pre-carriage (optional)

- Reefer delivered to shipper
- Cargo loading and sealing
- Temperature setpoint validation

2. Origin port handling

- Pre-Trip Inspection (PTI)
- Power connection at terminal
- Loading onto vessel

3. Ocean transport

- Continuous power supply
- Temperature monitoring
- Automated alerts



4. Destination port handling

- Unloading
- Cold-chain integrity check
- Customs clearance

5. On-carriage (optional)

- Temperature-controlled inland transport
- Delivery to consignee
- POD (proof of delivery)

6. Pricing Model

Reefer pricing is **premium** due to equipment, energy consumption, and monitoring.

Common pricing structures

- **Per container** (flat rate)
- **Reefer surcharge**
- **Power plug-in fees**
- **Monitoring fees**
- **BAF/CAF surcharges**
- **Terminal handling charges (THC)**

Cost drivers

- Temperature range
- Route and distance
- Seasonality (reefer peak seasons)
- Port infrastructure
- Energy consumption

7. Key KPIs

Operational KPIs

- Temperature deviation rate (%)
- PTI compliance
- On-time departure/arrival



- Container dwell time
- Damage or spoilage rate

Commercial KPIs

- Revenue per container
- Margin per shipment
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per reefer container
- Energy efficiency
- Reefer fleet age and technology

8. Risks & Challenges

Operational risks

- Power outages
- Equipment failure
- Temperature deviations
- Port congestion

Commercial risks

- High equipment and energy costs
- Seasonal demand spikes
- Limited reefer availability

Regulatory risks

- Food safety regulations
- Pharma GDP compliance
- Customs inspections

9. Differentiators (How to stand out)

A. Technology

- Remote Container Management (RCM)



- Real-time temperature tracking
- Controlled atmosphere (CA) solutions

B. Handling quality

- Cold-chain trained staff
- Strict PTI processes
- Zero-deviation operations

C. Network strength

- Strong reefer carrier partnerships
- Priority space allocation
- Global cold-chain coverage

D. Specialization

- Pharma reefer
- Fresh produce reefer
- Frozen food reefer

E. Customer experience

- Transparent reporting
- Proactive communication
- End-to-end cold-chain management

10. When Reefer is the best solution

Reefer is ideal when:

- Cargo is perishable or temperature-sensitive
- Cold-chain integrity is mandatory
- Long-distance global transport is required
- Standard containers pose spoilage risk
- Regulatory compliance is essential



4.0. Rail Freight – Intermodal (Rail–Road Combination)

Definition:

Intermodal Rail is a transport product that combines **rail and road** to move containers or trailers across long distances efficiently.

Cargo travels the **main leg by rail**, while **first and last mile** are handled by trucks.

It is one of the most **cost-efficient, sustainable, and reliable** alternatives to long-haul trucking.

Intermodal is the backbone of **green logistics** and a key solution for reducing CO₂ emissions in supply chains.

1. Product Description

Intermodal transport uses **standardized loading unit** containers, swap bodies, or trailers—that can be transferred between rail and road without handling the cargo itself.

Key characteristics

- Combined rail (long distance) + road (local)
- Standardized loading units (20', 40', 45', swap bodies, trailers)
- Fixed rail schedules
- High reliability and capacity
- Lower emissions than road transport
- Ideal for medium to long distances (400–2,000 km)

Typical cargo

- Consumer goods
- Retail and FMCG
- Automotive parts
- Industrial goods
- Chemicals (non-hazardous or ADR-approved units)
- E-commerce replenishment flows

2. Customer Segments

Intermodal is used by companies with **regular flows** and a focus on **cost, reliability, and sustainability**.

Ideal customers

- Retailers and supermarkets



- Automotive manufacturers
- Industrial producers
- FMCG companies
- E-commerce distributors
- Chemical companies
- 3PLs and freight forwarders

Customer needs

- Reliable long-distance transport
- Lower cost than full-truck road transport
- Reduced CO₂ footprint
- Predictable schedules
- Secure and stable transit

3. Value Proposition

Operational value

- High reliability (rail less affected by traffic)
- High capacity for regular flows
- Reduced risk of delays
- Suitable for heavy cargo

Commercial value

- Lower cost per km than road
- Stable pricing (less fuel volatility)
- Attractive for long-term contracts

Strategic value

- Supports sustainability goals
- Reduces road congestion
- Enables scalable supply chains

4. Service Scope

Included



- Rail linehaul
- Terminal handling (loading/unloading)
- Road pre-carriage and on-carriage
- Standard tracking
- Basic documentation

Optional add-ons

- Temperature-controlled intermodal
- ADR-approved intermodal units
- Priority loading
- CO₂ reporting
- Customs clearance
- Door-to-door service
- Storage at terminals

5. Operational Workflow

1. Pre-carriage (road)

- Truck pickup at shipper
- Delivery to intermodal terminal

2. Terminal handling

- Lift-on using cranes or reach stackers
- Placement on rail wagon
- Departure on scheduled train

3. Rail linehaul

- Long-distance transport
- Monitoring and tracking
- Fixed transit times

4. Destination terminal

- Lift-off
- Sorting and preparation for delivery



5. On-carriage (road)

- Truck delivery to consignee
- POD (proof of delivery)

6. Pricing Model

Intermodal pricing is **distance-based** and benefits from economies of scale.

Common pricing structures

- **Per container** (flat rate per lane)
- **Rail linehaul rate**
- **Terminal handling charges**
- **Pre-/on-carriage trucking fees**
- **Fuel and energy surcharges**

Cost drivers

- Distance
- Container type (20', 40', 45', swap body)
- Weight
- Terminal fees
- Road distance for first/last mile
- Frequency and volume

7. Key KPIs

Operational KPIs

- On-time departure (%)
- On-time arrival (%)
- Terminal dwell time
- Wagon utilization
- Damage rate (%)

Commercial KPIs

- Revenue per container
- Margin per lane



- Customer retention
- Contract stability

Sustainability KPIs

- CO₂ emissions per ton-km
- Rail share vs road share
- Energy efficiency

8. Risks & Challenges

Operational risks

- Terminal congestion
- Rail network disruptions
- Weather impacts
- Limited flexibility vs road

Commercial risks

- Volume fluctuations
- Competition from road transport
- Capacity constraints on rail corridors

Regulatory risks

- Rail slot allocation
- Cross-border rail regulations
- ADR restrictions for certain cargo types

9. Differentiators (How to stand out)

A. Network strength

- High-frequency rail connections
- Access to major European corridors
- Strong terminal partnerships

B. Sustainability

- CO₂ reporting
- Green logistics certification



- High rail share

C. Reliability

- Fixed schedules
- Priority loading
- Predictable transit times

D. Flexibility

- Multiple loading unit types
- Temperature-controlled intermodal
- ADR-approved solutions

E. Customer experience

- Transparent pricing
- Real-time tracking
- End-to-end coordination

10. When Intermodal Rail is the best solution

Intermodal is ideal when:

- The distance is medium to long (400+ km)
- Cost efficiency is important
- Sustainability is a priority
- Cargo flows are regular and predictable
- Road transport is too expensive or unreliable



4.1. Rail Freight – Block Train (Full Train Loads)

Definition:

A Block Train is a **dedicated, full-train service** reserved for a single customer or a single origin–destination flow.

The train runs **directly from origin terminal to destination terminal without shunting or re-marshalling**, providing **maximum speed, reliability, and capacity**.

Block Trains are the **premium product** in rail logistics for high-volume, repetitive flows.

1. Product Description

A Block Train consists of a **fixed composition of wagons** that moves as one unit from start to finish.

There is **no mixing of cargo**, no intermediate stops for wagon sorting, and no dependency on other customers.

Key characteristics

- Full train reserved for one customer or flow
- Direct origin–destination movement
- No shunting or wagon switching
- High reliability and predictable transit times
- Ideal for large, regular volumes
- Highly cost-efficient at scale

Typical train configurations

- 20–40 wagons
- Container wagons (intermodal)
- Bulk wagons (grain, coal, minerals)
- Tank wagons (chemicals, fuels)
- Automotive wagons
- Specialized wagons for project cargo

2. Customer Segments

Block Trains are used by industries with **large, stable, and repetitive transport volumes**.

Ideal customers



- Automotive manufacturers
- Steel and metals industry
- Chemical producers
- Energy sector (coal, biomass, fuel)
- Agriculture (grain, feed, fertilizers)
- Retail and FMCG distribution
- Intermodal operators
- Large 3PLs and forwarders

Customer needs

- High capacity
- Predictable schedules
- Cost efficiency
- Sustainability
- End-to-end reliability

3. Value Proposition

Operational value

- Direct, uninterrupted transport
- High punctuality
- High load capacity
- Reduced handling and damage risk

Commercial value

- Lower cost per ton-km at scale
- Stable long-term pricing
- Attractive for contract logistics

Strategic value

- Supports large industrial supply chains
- Enables modal shift from road to rail
- Strong sustainability performance



4. Service Scope

Included

- Full train capacity
- Rail traction and operations
- Terminal handling
- Wagon provision
- Standard tracking
- Basic documentation

Optional add-ons

- Door-to-door service (road first/last mile)
- Temperature-controlled wagons
- ADR-compliant wagons
- Real-time GPS tracking
- CO₂ reporting
- Customs clearance
- Dedicated train branding
- Storage at terminals

5. Operational Workflow

1. Pre-planning

- Volume assessment
- Train configuration design
- Route planning
- Slot allocation

2. Loading

- Cargo delivered to terminal
- Loading onto wagons
- Safety and securing checks

3. Rail linehaul



- Direct origin–destination movement
- No shunting
- Real-time monitoring

4. Destination terminal

- Unloading
- Sorting and distribution
- Documentation handover

5. On-carriage (optional)

- Truck delivery to consignee
- POD (proof of delivery)

6. Pricing Model

Block Train pricing is **contract-based** and reflects volume, distance, and wagon type.

Common pricing structures

- **Per train** (flat rate)
- **Per wagon**
- **Per ton-km**
- **Energy surcharge**
- **Terminal handling fees**

Cost drivers

- Train length and wagon type
- Distance and route
- Frequency (daily/weekly)
- Terminal capabilities
- Energy and track access charges

7. Key KPIs

Operational KPIs

- On-time departure (%)
- On-time arrival (%)



- Train utilization
- Wagon availability
- Incident rate

Commercial KPIs

- Revenue per train
- Margin per lane
- Contract duration
- Customer retention

Sustainability KPIs

- CO₂ emissions per ton-km
- Rail share vs road share
- Energy efficiency

8. Risks & Challenges

Operational risks

- Rail network disruptions
- Track capacity constraints
- Weather impacts
- Terminal congestion

Commercial risks

- High volume commitment
- Long-term contract exposure
- Competition from road or intermodal

Regulatory risks

- Cross-border rail regulations
- Track access rules
- ADR restrictions for certain cargo types

9. Differentiators (How to stand out)

A. Network strength



- Access to major European and Eurasian corridors
- Priority train paths
- Strong terminal partnerships

B. Reliability

- Fixed schedules
- Dedicated train slots
- High punctuality

C. Flexibility

- Custom train configurations
- Temperature-controlled or ADR wagons
- Multi-stop or shuttle operations

D. Sustainability

- Significant CO₂ reduction vs road
- Green logistics certification
- Transparent emissions reporting

E. Customer experience

- Dedicated account management
- Real-time visibility
- End-to-end coordination

10. When Block Train is the best solution

Block Train is ideal when:

- Cargo volumes are high and regular
- Predictability and reliability are critical
- Sustainability is a priority
- Long-distance transport is required
- Road transport is too costly or capacity-constrained



4.2. Rail Freight – Combined Transport (Trailer/Container by Rail)

Definition:

Combined Transport is an intermodal logistics product where **trailers, containers, or swap bodies** are transported on **rail wagons** for long distances, while **road trucks** handle the first and last mile.

It is designed to combine the **flexibility of road** with the **efficiency and sustainability of rail**, without touching the cargo itself.

Combined Transport is the **standard solution** for shifting freight from road to rail while maintaining operational flexibility.

1. Product Description

Combined Transport uses **standardized loading units** that can be transferred between road and rail using cranes or terminal equipment.

Key characteristics

- Road + rail combination
- Non-craneable and craneable trailers possible
- Containers and swap bodies supported
- Fixed rail schedules
- High reliability and capacity
- Lower emissions than road transport
- Ideal for medium to long distances (400–2,000 km)

Typical loading units

- 20', 40', 45' containers
- Swap bodies (C-type)
- Craneable trailers
- Non-crane able trailers (with special pocket wagons)

2. Customer Segments

Combined Transport is used by companies with **regular flows, cost sensitivity, and sustainability goals**.

Ideal customers



- Retailers and supermarkets
- Automotive manufacturers
- FMCG companies
- Industrial producers
- E-commerce distributors
- Chemical companies
- 3PLs and freight forwarders

Customer needs

- Reliable long-distance transport
- Lower cost than full-truck road transport
- Reduced CO₂ footprint
- Predictable schedules
- Flexibility for first/last mile

3. Value Proposition

Operational value

- High reliability (rail avoids road congestion)
- High capacity for regular flows
- Reduced risk of delays
- Suitable for heavy cargo

Commercial value

- Lower cost per km than road
- Stable pricing (less fuel volatility)
- Attractive for long-term contracts

Strategic value

- Supports sustainability and ESG goals
- Reduces road congestion
- Enables scalable supply chains

4. Service Scope



Included

- Rail linehaul
- Terminal handling (lift-on/lift-off)
- Road pre-carriage and on-carriage
- Standard tracking
- Basic documentation

Optional add-ons

- Temperature-controlled combined transport
- ADR-approved intermodal units
- Priority loading
- CO₂ reporting
- Customs clearance
- Door-to-door service
- Storage at terminals

5. Operational Workflow

1. Pre-carriage (road)

- Truck pickup at shipper
- Delivery to intermodal terminal

2. Terminal handling

- Lift-on using cranes or reach stackers
- Placement on rail wagon
- Departure on scheduled train

3. Rail linehaul

- Long-distance transport
- Monitoring and tracking
- Fixed transit times

4. Destination terminal

- Lift-off



- Sorting and preparation for delivery

5. On-carriage (road)

- Truck delivery to consignee
- POD (proof of delivery)

6. Pricing Model

Combined Transport pricing is **distance-based** and benefits from economies of scale.

Common pricing structures

- **Per loading unit** (container or trailer)
- **Rail linehaul rate**
- **Terminal handling charges**
- **Pre-/on-carriage trucking fees**
- **Fuel and energy surcharges**

Cost drivers

- Distance
- Loading unit type
- Weight
- Terminal fees
- Road distance for first/last mile
- Frequency and volume

7. Key KPIs

Operational KPIs

- On-time departure (%)
- On-time arrival (%)
- Terminal dwell time
- Wagon utilization
- Damage rate (%)

Commercial KPIs

- Revenue per loading unit



- Margin per lane
- Customer retention
- Contract stability

Sustainability KPIs

- CO₂ emissions per ton-km
- Rail share vs road share
- Energy efficiency

8. Risks & Challenges

Operational risks

- Terminal congestion
- Rail network disruptions
- Weather impacts
- Limited flexibility vs road

Commercial risks

- Volume fluctuations
- Competition from road transport
- Capacity constraints on rail corridors

Regulatory risks

- Rail slot allocation
- Cross-border rail regulations
- ADR restrictions for certain cargo types

9. Differentiators (How to stand out)

A. Network strength

- High-frequency rail connections
- Access to major European corridors
- Strong terminal partnerships

B. Sustainability

- CO₂ reporting



- Green logistics certification
- High rail share

C. Reliability

- Fixed schedules
- Priority loading
- Predictable transit times

D. Flexibility

- Craneable and non-craneable trailers
- Temperature-controlled units
- ADR-approved solutions

E. Customer experience

- Transparent pricing
- Real-time tracking
- End-to-end coordination

10. When Combined Transport is the best solution

Combined Transport is ideal when:

- The distance is medium to long (400+ km)
- Cost efficiency is important
- Sustainability is a priority
- Cargo flows are regular and predictable
- Road transport is too expensive or unreliable



5.0. Inland Waterway – Container Transport

(River Container Shipping)

Definition:

Inland Waterway Container Transport uses **river barges** to move standard containers along major inland waterways.

It is a **high-capacity, low-emission, and cost-efficient** alternative to long-haul trucking and rail, ideal for connecting **seaports with inland terminals**.

This product is a cornerstone of **green logistics**, offering stable schedules, high reliability, and excellent scalability.

1. Product Description

Containers are transported on **river barges** between inland terminals and seaports. Cargo remains inside the container throughout the journey, ensuring **secure, sealed, and low-handling** operations.

Key characteristics

- Uses river barges and inland vessels
- Standard containers (20', 40', 45')
- High capacity and low cost
- Fixed schedules (daily/weekly depending on corridor)
- Low CO₂ emissions
- Ideal for long-distance inland flows

Typical corridors

- Rhine (Rotterdam/Antwerp ↔ Germany/Switzerland)
- Danube (Black Sea ↔ Central Europe)
- Seine, Elbe, Rhône, Maas, Scheldt
- Benelux inland networks

2. Customer Segments

Inland waterway container transport is used by companies with **regular import/export flows** and a focus on **cost efficiency and sustainability**.

Ideal customers

- Retailers and FMCG



- Automotive manufacturers
- Industrial producers
- Chemical companies
- Food & beverage
- E-commerce importers
- 3PLs and freight forwarders

Customer needs

- Reliable port-to-inland connections
- Lower cost than road or rail
- Reduced CO₂ footprint
- High capacity for regular flows
- Predictable schedules

3. Value Proposition

Operational value

- High capacity per barge
- Low congestion risk
- Stable transit times
- Minimal handling

Commercial value

- Lower cost than road and often rail
- Attractive for long-term contracts
- Predictable pricing

Strategic value

- Supports modal shift and ESG goals
- Reduces road congestion
- Strengthens inland supply chains

4. Service Scope

Included



- Barge transport
- Terminal handling (loading/unloading)
- Standard container acceptance
- Basic tracking
- Standard documentation

Optional add-ons

- Door-to-door service (truck first/last mile)
- Reefer plug-in on barge
- Dangerous goods (ADN compliant)
- Priority loading
- CO₂ reporting
- Customs clearance
- Storage at inland terminals

5. Operational Workflow

1. Pre-carriage (road or rail)

- Container pickup at shipper
- Delivery to inland terminal

2. Inland terminal handling

- Lift-on using cranes or reach stackers
- Stacking and staging
- Loading onto barge

3. River transport

- Scheduled barge departure
- Transit along inland waterways
- Monitoring and tracking

4. Destination terminal

- Lift-off
- Sorting and preparation for delivery



5. On-carriage (road or rail)

- Delivery to consignee
- POD (proof of delivery)

6. Pricing Model

Inland waterway pricing is **volume-based** and highly competitive.

Common pricing structures

- **Per container** (flat rate per lane)
- **Terminal handling charges**
- **Barge surcharge**
- **Fuel/energy surcharge**
- **Port fees**

Cost drivers

- Distance
- Container type (20', 40', 45')
- Weight
- Terminal fees
- First/last mile distance
- Frequency and volume

7. Key KPIs

Operational KPIs

- On-time departure (%)
- On-time arrival (%)
- Terminal dwell time
- Barge utilization
- Damage rate (%)

Commercial KPIs

- Revenue per container
- Margin per lane



- Customer retention
- Contract stability

Sustainability KPIs

- CO₂ emissions per container
- Modal shift rate
- Energy efficiency

8. Risks & Challenges

Operational risks

- Low water levels
- Weather disruptions
- Lock or canal closures
- Terminal congestion

Commercial risks

- Competition from road and rail
- Seasonal capacity fluctuations
- Dependency on waterway conditions

Regulatory risks

- ADN compliance for dangerous goods
- Waterway authority restrictions
- Environmental regulations

9. Differentiators (How to stand out)

A. Network strength

- Strong inland terminal network
- High-frequency barge services
- Priority berthing at ports

B. Sustainability

- CO₂ reporting
- Green logistics certification



- High modal shift impact

C. Reliability

- Fixed schedules
- Predictable transit times
- Low congestion risk

D. Flexibility

- Reefer plug-in
- Dangerous goods (ADN)
- Multi-modal integration (rail + barge)

E. Customer experience

- Transparent pricing
- Real-time tracking
- End-to-end coordination

10. When Inland Waterway Container Transport is the best solution

It is ideal when:

- Cargo flows between seaports and inland regions
- Cost efficiency is a priority
- Sustainability targets must be met
- Road congestion is a challenge
- Volumes are regular and predictable



⚓ 5.1. Inland Waterway – Bulk (Dry Bulk Transport)

Definition:

Dry Bulk Inland Waterway Transport uses **river barges** to move unpackaged, homogeneous commodities such as **grains, coal, ores, aggregates, fertilizers, and biomass**.

Cargo is loaded directly into the vessel's hold and transported efficiently along major inland waterways.

It is one of the **most cost-efficient, sustainable, and high-capacity** modes for moving large volumes of raw materials.

1. Product Description

Dry bulk cargo is transported in **open or covered barge holds**, depending on the commodity.

The mode is ideal for **large, heavy, and low-value-per-ton** commodities that require economical long-distance transport.

Key characteristics

- High-capacity river barges
- Suitable for unpackaged, loose commodities
- Low handling cost per ton
- Very low CO₂ emissions
- Ideal for long-distance inland flows
- Stable and predictable transit times

Typical cargo

- Grains (wheat, corn, barley)
- Coal and coke
- Iron ore and minerals
- Sand, gravel, aggregates
- Cement and clinker
- Fertilizers
- Biomass (wood pellets, chips)
- Salt, sugar, feedstock

2. Customer Segments



Dry bulk inland waterway transport is used by industries with **large, regular, and heavy commodity flows**.

Ideal customers

- Agriculture and grain traders
- Steel and mining companies
- Construction and cement producers
- Energy companies (coal, biomass)
- Chemical and fertilizer producers
- Feed and food processors
- Bulk commodity traders

Customer needs

- High-volume capacity
- Low cost per ton
- Reliable supply chain flows
- Sustainability and CO₂ reduction
- Access to inland terminals and silos

3. Value Proposition

Operational value

- Massive capacity per barge
- Minimal congestion risk
- Stable transit times
- Low handling requirements

Commercial value

- Lowest cost per ton among inland modes
- Attractive for long-term contracts
- Predictable pricing

Strategic value

- Supports industrial supply chains



- Enables modal shift from road
- Strong sustainability performance

4. Service Scope

Included

- Barge transport
- Loading and unloading at terminals
- Standard documentation
- Basic tracking
- Hold cleaning (depending on commodity)

Optional add-ons

- Covered barges for sensitive cargo
- Storage at inland terminals
- Quality sampling and testing
- CO₂ reporting
- Customs clearance (for cross-border flows)
- Door-to-door multimodal integration (road/rail + barge)

5. Operational Workflow

1. Pre-carriage (optional)

- Cargo delivered to loading terminal
- Storage in silos, warehouses, or stockpiles

2. Loading

- Conveyor belts, grabs, or pneumatic systems
- Quality sampling
- Hold leveling and securing

3. River transport

- Scheduled or spot barge departure
- Navigation along inland waterways
- Monitoring and tracking



4. Destination terminal

- Unloading via grabs, conveyors, or pumps
- Transfer to silos, warehouses, or trucks

5. On-carriage (optional)

- Truck or rail delivery to final destination
- POD (proof of delivery)

6. Pricing Model

Bulk inland waterway pricing is **volume-based** and highly competitive.

Common pricing structures

- **Per ton** (flat rate per lane)
- **Per barge** (full barge charter)
- **Fuel/energy surcharge**
- **Terminal handling charges**
- **Port fees**

Cost drivers

- Distance
- Commodity type
- Loading/unloading method
- Barge size and availability
- Water levels (impacting capacity)
- Seasonality

7. Key KPIs

Operational KPIs

- On-time departure/arrival
- Loading/unloading efficiency
- Barge utilization
- Damage or contamination rate
- Water level impact



Commercial KPIs

- Revenue per ton
- Margin per lane
- Contract stability
- Customer retention

Sustainability KPIs

- CO₂ emissions per ton-km
- Modal shift impact
- Energy efficiency

8. Risks & Challenges

Operational risks

- Low water levels reducing capacity
- Weather disruptions
- Lock or canal closures
- Terminal congestion

Commercial risks

- Commodity price volatility
- Competition from rail and road
- Seasonal demand fluctuations

Regulatory risks

- Waterway authority restrictions
- Environmental regulations
- Cross-border compliance

9. Differentiators (How to stand out)

A. Fleet capability

- Access to large, modern barge fleets
- Covered vs open hold options
- High-capacity vessels



B. Network strength

- Strong inland terminal network
- Priority berthing
- Multi-corridor coverage

C. Handling quality

- Efficient loading/unloading
- Clean holds
- Low contamination risk

D. Sustainability

- CO₂ reporting
- Green logistics certification
- High modal shift impact

E. Customer experience

- Transparent pricing
- Real-time updates
- End-to-end coordination

10. When Inland Waterway Bulk Transport is the best solution

It is ideal when:

- Cargo is heavy, loose, and high-volume
- Cost efficiency is critical
- Sustainability targets must be met
- Road or rail capacity is limited
- The customer has regular, predictable flows



5.2. Inland Waterway – Project Cargo

(Heavy Lift & Oversized Cargo Transport)

Definition:

Project Cargo via inland waterways involves transporting **oversized, heavy, or irregular industrial components** using **specialized barges** on rivers and canals.

These shipments exceed standard container or bulk dimensions and require **engineering, route planning, lifting expertise, and tailored barge solutions**.

It is the **safest and most efficient** way to move extremely large or heavy cargo inland, especially for **energy, construction, and industrial megaprojects**.

1. Product Description

Project Cargo on waterways uses **heavy-lift barges, semi-submersible barges, or deck barges** to move cargo that cannot be containerized or transported by road due to size or weight restrictions.

Key characteristics

- Transport of oversized, heavy, or irregular cargo
- Specialized barges and lifting equipment
- Engineering-driven operations
- Route surveys and feasibility studies
- Ideal for long-distance inland movements
- Low vibration and minimal handling

Typical cargo

- Wind turbine blades, towers, nacelles
- Transformers, generators, turbines
- Industrial reactors and pressure vessels
- Construction modules and prefabricated units
- Offshore components
- Large machinery and plant equipment
- Bridge sections and steel structures

2. Customer Segments



Project Cargo via waterways is used by industries with **large, heavy, or complex cargo** that cannot move efficiently by road or rail.

Ideal customers

- Energy sector (wind, hydro, nuclear, thermal)
- Oil & gas and petrochemical plants
- Heavy industry and steel
- Construction and infrastructure
- Mining and machinery manufacturers
- Engineering, procurement & construction (EPC) firms
- Project logistics companies

Customer needs

- Safe handling of oversized cargo
- Engineering support
- Route and feasibility planning
- High reliability
- Compliance with waterway restrictions

3. Value Proposition

Operational value

- Ability to move extremely heavy or oversized cargo
- Minimal handling reduces risk
- Waterways allow larger dimensions than road or rail
- Stable and vibration-free transport

Commercial value

- Lower cost than road heavy-haul for large units
- Predictable project-based pricing
- Attractive for long-term industrial projects

Strategic value

- Enables large-scale infrastructure and energy projects



- Supports industrial development in inland regions
- Reduces road congestion and permits complexity

4. Service Scope

Included

- Barge charter
- Engineering and stowage planning
- Route survey and feasibility analysis
- Port and terminal handling
- Lifting and securing
- Standard documentation

Optional add-ons

- Marine Warranty Survey (MWS)
- Heavy-lift cranes
- Semi-submersible barge operations
- Escort vessels
- Customs clearance
- CO₂ reporting
- Door-to-door multimodal integration (road/rail + barge)
- On-site installation support

5. Operational Workflow

1. Pre-planning

- Cargo assessment (dimensions, weight, COG)
- Engineering drawings and lifting plans
- Route survey (bridges, locks, water depth)
- Barge selection and scheduling

2. Loading

- Heavy-lift cranes or roll-on/roll-off ramps
- Securing and lashing



- Stability and safety checks

3. River transport

- Navigation along inland waterways
- Speed and stability monitoring
- Weather and water level management

4. Destination terminal

- Controlled unloading
- Transfer to heavy-haul trucks or site equipment
- Documentation handover

5. On-carriage (optional)

- Heavy-haul road transport
- Delivery to project site
- Crane installation

6. Pricing Model

Project Cargo pricing is **custom and engineering-based**.

Common pricing structures

- **Per project** (lump sum)
- **Per barge charter**
- **Per ton or freight ton**
- **Lifting and securing fees**
- **Engineering and survey fees**
- **Port and terminal charges**

Cost drivers

- Cargo dimensions and weight
- Barge type and availability
- Route complexity
- Lifting requirements
- Water levels and seasonality



- Permits and surveys

7. Key KPIs

Operational KPIs

- Lifting accuracy
- Stowage quality
- Damage rate (%)
- On-time departure/arrival
- Water level impact

Commercial KPIs

- Revenue per project
- Margin per shipment
- Customer retention
- Claim rate

Sustainability KPIs

- CO₂ emissions per ton-km
- Modal shift impact
- Energy efficiency

8. Risks & Challenges

Operational risks

- Low water levels
- Weather disruptions
- Bridge height restrictions
- Lifting accidents
- Terminal capacity limitations

Commercial risks

- High liability exposure
- Market volatility
- Limited barge availability



Regulatory risks

- Waterway authority restrictions
- ADN compliance (if hazardous)
- MWS requirements

9. Differentiators (How to stand out)

A. Engineering expertise

- Lifting plans
- Stowage calculations
- Route surveys
- Structural analysis

B. Fleet capability

- Access to heavy-lift and specialized barges
- Semi-submersible options
- High-capacity deck barges

C. Handling quality

- Professional heavy-lift teams
- High-quality securing and lashing
- Zero-damage track record

D. Network strength

- Strong inland terminal network
- Priority berthing
- Multi-corridor coverage

E. Customer experience

- Transparent project management
- Real-time updates
- End-to-end coordination

10. When Inland Waterway Project Cargo is the best solution

It is ideal when:



- Cargo is oversized, heavy, or irregular
- Road or rail transport is impossible or too costly
- Engineering and lifting expertise are required
- The project site is near a navigable waterway
- The customer needs safe, stable, and low-vibration transport



6.0 Storage – Pallet Storage (Standard Warehouse)

Definition:

Pallet Storage refers to the **standard warehousing service** where goods are stored on pallets in a **racked or block-stacked warehouse environment**.

It is the core product of warehouse logistics, providing **secure, organized, and scalable** storage for a wide range of goods.

This product is essential for **inventory management, distribution, and supply chain continuity**.

1. Product Description

Pallet Storage involves receiving, storing, and managing palletized goods in a warehouse.

Storage can be **short-term, long-term, or buffer-based**, depending on customer needs.

Key characteristics

- Standard palletized storage
- Racked or floor (block) storage
- FIFO, LIFO, or FEFO inventory methods
- Suitable for dry, ambient goods
- Scalable capacity
- Ideal for B2B distribution

Typical goods stored

- FMCG and retail products
- Industrial components
- Packaging materials
- Electronics and consumer goods
- Automotive parts
- E-commerce inventory
- Non-hazardous chemicals

2. Customer Segments

Pallet storage is used by companies needing **flexible, secure, and cost-efficient** warehousing.



Ideal customers

- Retailers and wholesalers
- E-commerce sellers
- Manufacturers
- Importers/exporters
- 3PLs
- Automotive suppliers
- FMCG distributors

Customer needs

- Safe and organized storage
- Inventory visibility
- Fast inbound/outbound handling
- Flexible capacity
- Cost-efficient warehousing

3. Value Proposition

Operational value

- Organized pallet storage
- Efficient inbound/outbound flows
- Inventory accuracy
- Scalable capacity

Commercial value

- Predictable monthly storage fees
- Flexible contract terms
- Cost-effective vs owning a warehouse

Strategic value

- Supports distribution networks
- Enables buffer stock and safety stock
- Reduces supply chain risk



4. Service Scope

Included

- Pallet reception and put-away
- Standard pallet storage
- Inventory management
- Basic WMS visibility
- Standard security (CCTV, access control)
- Outbound preparation

Optional add-ons

- Pick & pack
- Cross-docking
- Value-added services (labelling, kitting, repacking)
- Temperature-controlled storage
- Dangerous goods storage (ADR)
- Cycle counting
- CO₂ reporting
- Customs bonded storage

5. Operational Workflow

1. Inbound

- Truck arrival
- Pallet inspection
- Barcode scanning
- Put-away to assigned location

2. Storage

- Racked or block storage
- FIFO/LIFO/FEFO management
- WMS tracking
- Regular stock checks



3. Outbound

- Order picking (if applicable)
- Pallet retrieval
- Consolidation and staging
- Loading onto trucks

4. Inventory management

- Real-time stock visibility
- Cycle counts
- Reporting

6. Pricing Model

Pallet storage pricing is **capacity-based** and typically billed monthly.

Common pricing structures

- **Per pallet per week/month**
- **Inbound/outbound handling fees**
- **WMS fee**
- **Value-added service fees**
- **Long-term storage discounts**

Cost drivers

- Storage duration
- Pallet size and weight
- Handling complexity
- WMS and reporting requirements
- Value-added services

7. Key KPIs

Operational KPIs

- Inventory accuracy (%)
- On-time inbound/outbound
- Picking accuracy



- Warehouse utilization
- Damage rate (%)

Commercial KPIs

- Revenue per pallet
- Margin per customer
- Storage turnover
- Customer retention

Sustainability KPIs

- Energy usage per pallet
- CO₂ emissions per operation
- Waste reduction

8. Risks & Challenges

Operational risks

- Inventory discrepancies
- Damage during handling
- Space shortages
- Seasonal peaks

Commercial risks

- Price sensitivity
- High fixed warehouse costs
- Customer volume fluctuations

Regulatory risks

- Fire safety compliance
- ADR restrictions
- Insurance requirements

9. Differentiators (How to stand out)

A. Technology

- Advanced WMS



- Real-time inventory visibility
- Barcode/RFID tracking

B. Handling quality

- Trained warehouse staff
- Low damage rates
- Efficient inbound/outbound processes

C. Flexibility

- Short-term and long-term storage
- Scalable capacity
- Modular service packages

D. Value-added services

- Kitting, labelling, repacking
- E-commerce fulfilment
- Cross-docking

E. Customer experience

- Transparent pricing
- Detailed reporting
- Dedicated account management

10. When Pallet Storage is the best solution

Pallet storage is ideal when:

- Goods are palletized and ambient
- The customer needs flexible storage capacity
- Inventory must be organized and traceable
- Distribution requires fast inbound/outbound
- Owning a warehouse is too costly or inflexible



6.1.Storage – High-Bay Storage

(Automated or Manual)

Definition:

High-Bay Storage refers to warehousing systems with **very tall racking structures** typically **12 to 45 meters high** designed to maximize vertical storage density. These facilities can operate **manually** (using high-reach equipment) or **automatically** (using AS/RS systems such as stacker cranes or shuttles).

High-bay storage is the **most space-efficient and technologically advanced** form of pallet storage.

1. Product Description

High-bay warehouses use tall racking systems to store pallets at high density. Depending on the setup, operations can be **fully automated, semi-automated, or manual**.

Key characteristics

- Very tall racking (12–45 m)
- High storage density
- Automated or manual retrieval
- Ideal for large volumes and high throughput
- Suitable for ambient or temperature-controlled environments
- High accuracy and low error rates

Typical goods stored

- FMCG and retail goods
- Food & beverage
- Industrial components
- Packaging materials
- Automotive parts
- E-commerce inventory
- High-turnover palletized goods

2. Customer Segments



High-bay storage is used by companies with **large inventories, high throughput, or limited floor space.**

Ideal customers

- Retailers and supermarkets
- FMCG producers
- Automotive manufacturers
- Industrial suppliers
- E-commerce fulfilment centers
- 3PLs with high-volume clients
- Food & beverage distributors

Customer needs

- High-density storage
- Fast and accurate retrieval
- Automation for efficiency
- Reduced labor dependency
- Scalable capacity

3. Value Proposition

Operational value

- Maximum storage density
- High throughput
- Low error rates
- Reduced labor requirements (automated systems)

Commercial value

- Lower cost per pallet stored
- Predictable operational costs
- High scalability

Strategic value

- Supports high-volume distribution networks



- Enables automation and digitalization
- Reduces dependency on labor availability

4. Service Scope

Included

- Pallet reception and put-away
- High-bay storage (manual or automated)
- Inventory management
- WMS visibility
- Standard security (CCTV, access control)
- Outbound preparation

Optional add-ons

- Automated picking systems
- Shuttle or AS/RS integration
- Temperature-controlled high-bay
- Value-added services (labelling, kitting, repacking)
- Cycle counting
- CO₂ reporting
- Customs bonded storage

5. Operational Workflow

Manual high-bay

- Inbound pallets received
- High-reach trucks or VNA (Very Narrow Aisle) equipment used
- Pallets stored at height
- Manual retrieval for outbound

Automated high-bay (AS/RS)

- Pallets enter via conveyor or AGV
- Automated stacker cranes store pallets
- WMS assigns optimal locations



- Automated retrieval for outbound
- Minimal human intervention

Inventory management

- Real-time WMS visibility
- Automated stock reconciliation
- Exception handling

6. Pricing Model

High-bay storage pricing reflects **premium infrastructure** and **automation level**.

Common pricing structures

- **Per pallet per week/month**
- **Inbound/outbound handling fees**
- **Automation surcharge** (for AS/RS)
- **WMS fee**
- **Value-added service fees**

Cost drivers

- Automation level
- Storage duration
- Pallet size and weight
- Handling complexity
- Temperature control
- Value-added services

7. Key KPIs

Operational KPIs

- Inventory accuracy (%)
- Throughput per hour
- System uptime (automated)
- Picking accuracy
- Warehouse utilization



Commercial KPIs

- Revenue per pallet
- Margin per customer
- Storage turnover
- Customer retention

Sustainability KPIs

- Energy usage per pallet
- CO₂ emissions per operation
- Automation energy efficiency

8. Risks & Challenges

Operational risks

- Equipment breakdown (automated systems)
- High initial investment
- Limited flexibility for irregular pallet sizes
- Skilled technician requirements

Commercial risks

- High fixed costs
- Customer volume fluctuations
- Long-term ROI dependency

Regulatory risks

- Fire safety compliance
- Insurance requirements
- Building height regulations

9. Differentiators (How to stand out)

A. Technology

- Advanced AS/RS systems
- Real-time WMS integration
- Automated conveyors and shuttles



B. Efficiency

- High throughput
- Low error rates
- Minimal labor dependency

C. Space optimization

- Maximum vertical utilization
- High pallet density
- Reduced footprint

D. Flexibility

- Manual or automated options
- Temperature-controlled high-bay
- Modular expansion

E. Customer experience

- Transparent reporting
- Real-time inventory visibility
- Dedicated account management

10. When High-Bay Storage is the best solution

High-bay storage is ideal when:

- Inventory volumes are high
- Floor space is limited
- Automation is desired
- High throughput is required
- Accuracy and reliability are critical



6.2. Storage – Temperature-Controlled (Refrigerated / Frozen Storage)

Definition:

Temperature-controlled storage refers to warehousing environments designed to maintain **specific temperature ranges** for perishable or sensitive goods.

This includes **chilled, refrigerated, and deep-frozen** storage zones, ensuring **product integrity, regulatory compliance, and cold-chain continuity**.

It is a **premium warehousing product** essential for food, pharma, and high-value temperature-sensitive supply chains.

1. Product Description

Temperature-controlled warehouses maintain strict temperature ranges using **specialized insulation, cooling systems, monitoring technology, and cold-chain processes**.

Temperature zones

- **Chilled:** +2°C to +8°C
- **Refrigerated:** +8°C to +15°C
- **Frozen:** -18°C to -25°C
- **Deep-frozen:** -25°C to -30°C
- **Ambient-controlled:** +15°C to +25°C (for pharma)

Key characteristics

- Continuous temperature monitoring
- Alarm systems and redundancy
- Strict hygiene and food/pharma compliance
- FIFO/FEFO inventory management
- Suitable for palletized or case-level storage

Typical goods stored

- Fresh produce
- Meat, poultry, seafood
- Dairy products
- Frozen foods



- Pharmaceuticals and vaccines
- Cosmetics and chemicals require temperature control
- High-value perishables (flowers, specialty foods)

2. Customer Segments

Temperature-controlled storage is used by industries where **temperature integrity is mission-critical**.

Ideal customers

- Food & beverage producers
- Retailers and supermarkets
- Pharmaceutical companies
- Chemical manufacturers
- Cold-chain distributors
- E-commerce grocery players
- 3PLs with perishable clients

Customer needs

- Guaranteed temperature stability
- Regulatory compliance (GDP, HACCP, IFS)
- Low spoilage risk
- Real-time visibility
- Fast inbound/outbound handling

3. Value Proposition

Operational value

- Continuous temperature control
- Reduced spoilage and waste
- High hygiene and compliance standards
- Suitable for sensitive and high-value goods

Commercial value

- Premium pricing



- High customer loyalty
- Predictable cost structure

Strategic value

- Enables cold-chain distribution networks
- Supports food security and pharma supply chains
- Reduces risk of product loss

4. Service Scope

Included

- Temperature-controlled pallet storage
- Inbound inspection and put-away
- Continuous temperature monitoring
- Inventory management
- Standard WMS visibility
- Outbound preparation

Optional add-ons

- Pick & pack in chilled zones
- Cross-docking
- Value-added services (labelling, repacking, portioning)
- GDP-compliant pharma storage
- CO₂ reporting
- Customs bonded cold storage
- Reefer plug-in zones
- Temperature-controlled transport integration

5. Operational Workflow

1. Inbound

- Temperature check at arrival
- Hygiene inspection
- Barcode scanning



- Put-away into correct temperature zone

2. Storage

- Continuous monitoring
- FEFO/FIFO management
- WMS tracking
- Regular compliance checks

3. Outbound

- Temperature-controlled picking
- Consolidation in chilled staging areas
- Loading into refrigerated trucks

4. Inventory management

- Real-time visibility
- Automated alerts
- Compliance documentation

6. Pricing Model

Temperature-controlled storage pricing reflects **premium infrastructure, energy usage, and compliance.**

Common pricing structures

- **Per pallet per week/month** (temperature-dependent)
- **Inbound/outbound handling fees**
- **Energy surcharge**
- **WMS fee**
- **Value-added service fees**

Cost drivers

- Temperature zone (chilled vs frozen)
- Storage duration
- Handling complexity
- Energy consumption



- Compliance requirements
- Value-added services

7. Key KPIs

Operational KPIs

- Temperature deviation rate (%)
- Inventory accuracy
- On-time inbound/outbound
- Hygiene compliance score
- Damage/spoilage rate

Commercial KPIs

- Revenue per pallet
- Margin per customer
- Storage turnover
- Customer retention

Sustainability KPIs

- Energy usage per pallet
- CO₂ emissions per operation
- Refrigeration efficiency

8. Risks & Challenges

Operational risks

- Power outages
- Equipment failure
- Temperature deviations
- Hygiene non-compliance

Commercial risks

- High energy costs
- Seasonal demand spikes
- Limited cold-chain capacity



Regulatory risks

- Food safety regulations (HACCP, IFS)
- Pharma GDP compliance
- Customs inspections

9. Differentiators (How to stand out)

A. Technology

- Real-time temperature tracking
- Automated alarms
- Redundant cooling systems

B. Handling quality

- Cold-chain trained staff
- Strict hygiene protocols
- Zero-deviation operations

C. Compliance

- GDP, HACCP, IFS certification
- Full audit trail
- Temperature-controlled documentation

D. Flexibility

- Multiple temperature zones
- Cross-docking in chilled areas
- Value-added services

E. Customer experience

- Transparent reporting
- Proactive communication
- End-to-end cold-chain management

10. When Temperature-Controlled Storage is the best solution

It is ideal when:

- Goods are perishable or temperature-sensitive



- Cold-chain integrity is mandatory
- Long-term or buffer storage is needed
- Regulatory compliance is essential
- Spoilage risk must be minimized



6.3. Storage – Hazardous Goods

(ADR-Compliant Storage)

Definition:

ADR-compliant storage refers to warehousing facilities designed and certified to store **dangerous goods** according to **ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road)** and related regulations. These warehouses feature **specialized infrastructure, safety systems, segregation rules, and trained personnel** to ensure safe handling and storage of hazardous materials.

This is a **premium, high-liability, high-expertise** logistics product essential for chemical, industrial, and manufacturing supply chains.

1. Product Description

Hazardous goods storage involves receiving, storing, and managing dangerous goods in compliance with ADR, local fire codes, and environmental regulations.

Key characteristics

- Certified ADR storage zones
- Segregation by hazard class
- Fire-resistant construction
- Spill containment systems
- Ventilation and temperature control (where required)
- Trained and certified staff
- Strict documentation and traceability

Typical ADR classes stored

- **Class 2:** Gases
- **Class 3:** Flammable liquids
- **Class 4:** Flammable solids
- **Class 5:** Oxidizing substances
- **Class 6:** Toxic substances
- **Class 8:** Corrosive substances
- **Class 9:** Miscellaneous dangerous goods



(Explosives and radioactive materials typically require specialized facilities beyond standard ADR warehouses.)

2. Customer Segments

ADR storage is used by industries handling **chemicals, hazardous materials, or regulated substances**.

Ideal customers

- Chemical manufacturers and distributors
- Automotive suppliers
- Industrial producers
- Paints, coatings, and adhesives companies
- Agriculture (fertilizers, pesticides)
- Pharmaceuticals and biotech
- Oil & gas and lubricants
- 3PLs with hazardous goods clients

Customer needs

- Safe and compliant storage
- Segregation by hazard class
- Regulatory documentation
- Trained personnel
- Emergency response capability

3. Value Proposition

Operational value

- Safe handling of dangerous goods
- Segregation and compliance with ADR
- Reduced risk of incidents
- Specialized infrastructure

Commercial value

- Premium pricing
- High customer loyalty



- Reduced liability for shippers

Strategic value

- Enables chemical and industrial supply chains
- Ensures regulatory compliance
- Reduces risk exposure for customers

4. Service Scope

Included

- ADR-compliant pallet storage
- Inbound inspection and classification
- Segregation by hazard class
- Spill containment and fire protection
- Inventory management
- Standard WMS visibility
- Emergency response procedures

Optional add-ons

- Temperature-controlled ADR storage
- Repacking and labelling (ADR compliant)
- Safety data sheet (SDS) management
- CO₂ reporting
- Customs bonded hazardous storage
- Waste hazardous goods storage
- Dangerous goods transport integration

5. Operational Workflow

1. Inbound

- Documentation check (SDS, UN number, class)
- Packaging and labelling verification
- Barcode scanning
- Assignment to correct hazard zone



2. Storage

- Segregation by ADR class
- Fire-resistant compartments
- Spill containment pallets
- Continuous monitoring
- Regular safety inspections

3. Outbound

- Safe retrieval
- Compliance check
- Loading into ADR-approved vehicles

4. Inventory management

- Real-time WMS visibility
- Batch/lot tracking
- Compliance documentation

6. Pricing Model

ADR storage pricing reflects **high infrastructure cost, risk, and compliance requirements.**

Common pricing structures

- **Per pallet per week/month** (hazard-class dependent)
- **Inbound/outbound handling fees**
- **ADR surcharge**
- **WMS fee**
- **Safety and compliance fee**

Cost drivers

- Hazard class
- Storage duration
- Handling complexity
- Temperature control



- Safety equipment requirements
- Regulatory compliance

7. Key KPIs

Operational KPIs

- Safety incident rate
- Compliance audit score
- Inventory accuracy
- On-time inbound/outbound
- Spill or deviation rate

Commercial KPIs

- Revenue per pallet
- Margin per customer
- Storage turnover
- Customer retention

Sustainability KPIs

- Waste management efficiency
- Energy usage per pallet
- CO₂ emissions per operation

8. Risks & Challenges

Operational risks

- Chemical spills
- Fire hazards
- Incorrect segregation
- Equipment failure

Commercial risks

- High insurance costs
- Liability exposure
- Customer volume fluctuations



Regulatory risks

- ADR compliance
- Fire safety regulations
- Environmental protection laws
- SDS documentation requirements

9. Differentiators (How to stand out)

A. Compliance excellence

- ADR-certified staff
- Regular audits
- Full documentation management

B. Infrastructure

- Fire-resistant compartments
- Spill containment systems
- Temperature-controlled ADR zones

C. Safety

- Emergency response teams
- Automated alarm systems
- Zero-incident track record

D. Flexibility

- Multiple hazard classes
- Repacking and relabelling
- Waste hazardous storage

E. Customer experience

- Transparent reporting
- Real-time inventory visibility
- Dedicated dangerous goods specialists

10. When ADR-Compliant Storage is the best solution

It is ideal when:



- Goods are hazardous or regulated
- Safety and compliance are mandatory
- Long-term or buffer storage is needed
- The customer wants to reduce liability
- Cold-chain or temperature control is required for dangerous goods



⚡ **6.4. Fulfillment – E-Commerce Fulfillment (Pick / Pack / Ship)**

Definition:

E-commerce fulfillment is an end-to-end logistics service that manages **inventory storage, order picking, packing, and shipping** for online retailers.

It ensures that customer orders are processed **accurately, quickly, and cost-effectively**, enabling brands to scale without building their own logistics infrastructure.

This is a **high-value, high-speed** product at the heart of modern digital commerce.

1. Product Description

E-commerce fulfillment covers the entire operational chain from receiving goods to delivering parcels to end customers.

Key characteristics

- Fast order processing (same-day or next-day)
- High picking accuracy
- Customizable packaging
- Integration with online stores (API/EDI)
- Real-time inventory visibility
- Parcel carrier management
- Returns handling

Typical goods handled

- Fashion & apparel
- Consumer electronics
- Cosmetics & beauty
- Home goods
- Supplements & wellness
- Small industrial items
- D2C brand products

2. Customer Segments



Fulfillment services are used by companies selling **directly to consumers** and requiring **fast, accurate, scalable** logistics.

Ideal customers

- E-commerce brands
- D2C companies
- Online retailers
- Subscription box providers
- Marketplace sellers
- Crowdfunded product companies
- SMEs scaling their online presence

Customer needs

- Fast delivery
- High accuracy
- Inventory visibility
- Scalable operations
- Cost-efficient parcel shipping

3. Value Proposition

Operational value

- High-speed order processing
- Accurate picking and packing
- Integrated systems for real-time visibility
- Scalable capacity for peak seasons

Commercial value

- Lower logistics cost per order
- Access to discounted parcel rates
- No need for warehouse investment

Strategic value

- Enables rapid e-commerce growth



- Improves customer satisfaction and loyalty
- Supports international expansion

4. Service Scope

Included

- Goods reception (inbound)
- Storage (pallet or shelf)
- Order picking
- Packing (standard materials)
- Shipping via parcel carriers
- Inventory management
- WMS visibility
- Basic customer service support (tracking, exceptions)

Optional add-ons

- Custom packaging / branded unboxing
- Kitting and assembly
- Subscription box preparation
- Same-day fulfillment
- Returns processing (reverse logistics)
- Quality control checks
- CO₂ reporting
- Cross-border fulfillment
- Marketplace integration (Amazon, Shopify, Zalando, etc.)

5. Operational Workflow

1. Inbound

- Goods received and checked
- Barcode scanning
- Put-away to shelves or bins

2. Storage



- SKU-level organization
- Real-time inventory tracking
- Replenishment of picking locations

3. Order processing

- Order imported automatically from online store
- Picker retrieves items
- Quality check

4. Packing

- Standard or custom packaging
- Inserts, flyers, or promotional materials
- Shipping label creation

5. Shipping

- Handover to parcel carriers
- Tracking number sent to customer
- Delivery to end consumer

6. Returns (optional)

- Inspection
- Restocking or disposal
- Refund notification

6. Pricing Model

Fulfillment pricing is **transaction-based** and highly transparent.

Common pricing structures

- **Storage fee** (per pallet, shelf, or bin)
- **Pick fee** (per order + per additional item)
- **Packing fee**
- **Packaging material cost**
- **Shipping cost** (carrier rates)
- **Returns handling fee**



Cost drivers

- Order volume
- SKU complexity
- Packaging requirements
- Storage duration
- Carrier selection
- Value-added services

7. Key KPIs

Operational KPIs

- Order accuracy (%)
- On-time fulfillment (%)
- Cut-off time compliance
- Inventory accuracy
- Return processing time

Commercial KPIs

- Cost per order
- Revenue per client
- Customer retention
- Peak season performance

Sustainability KPIs

- Packaging waste reduction
- CO₂ emissions per order
- Carrier sustainability mix

8. Risks & Challenges

Operational risks

- Peak season overload
- Inventory discrepancies
- Carrier delays



- SKU complexity

Commercial risks

- High customer expectations
- Price sensitivity
- Volatile order volumes

Regulatory risks

- Customs for cross-border shipments
- Product safety compliance
- Data protection (customer data)

9. Differentiators (How to stand out)

A. Speed

- Same-day or next-day fulfillment
- Late cut-off times
- Fast returns processing

B. Technology

- Real-time WMS
- API integrations
- Automated picking systems

C. Customer experience

- Branded packaging
- Personalized inserts
- High delivery reliability

D. Flexibility

- Scalable capacity
- Multi-warehouse network
- International fulfillment

E. Cost efficiency

- Consolidated parcel rates



- Optimized packaging
- Efficient pick/pack processes

10. When E-Commerce Fulfillment is the best solution

It is ideal when:

- The customer sells online (D2C or marketplace)
- Fast delivery is essential
- Order volumes fluctuate
- Inventory must be visible in real time
- The brand wants to scale without building its own warehouse



6.5. Returns Management – Reverse Logistics

Definition:

Returns Management (Reverse Logistics) covers the **end-to-end process of receiving, inspecting, processing, and reintegrating returned goods** from customers back into the supply chain.

It ensures that returns are handled **quickly, accurately, and cost-effectively**, while maximizing recovery value and maintaining customer satisfaction.

Reverse logistics is a **core differentiator** for brands, especially in e-commerce where return rates can reach 20–40%.

1. Product Description

Returns Management includes all operational steps required to handle returned products, from customer drop-off to final disposition.

Key characteristics

- Fast processing of returned items
- Inspection and quality assessment
- Restocking, refurbishment, or disposal
- Integration with WMS and e-commerce platforms
- Transparent reporting and traceability
- Cost-optimized workflows

Typical goods handled

- Fashion & apparel
- Consumer electronics
- Cosmetics & beauty
- Home goods
- Small industrial items
- D2C brand products

2. Customer Segments

Reverse logistics are used by companies with **high return volumes** or **customer-centric service models**.

Ideal customers



- E-commerce brands
- Online retailers
- Fashion and apparel companies
- Consumer electronics sellers
- Subscription box providers
- Marketplace sellers
- 3PLs offering end-to-end fulfillment

Customer needs

- Fast refund processing
- Accurate inspection
- Inventory reintegration
- Cost-efficient handling
- Sustainability and waste reduction

3. Value Proposition

Operational value

- Streamlined return flows
- High inspection accuracy
- Fast reintegration into inventory
- Reduced waste and improved recovery value

Commercial value

- Lower cost per return
- Higher resale rate
- Improved customer loyalty

Strategic value

- Enhances brand reputation
- Supports circular economy initiatives
- Enables scalable e-commerce growth

4. Service Scope



Included

- Return reception
- Barcode scanning and identification
- Inspection and grading
- Restocking of sellable items
- WMS updates
- Basic reporting

Optional add-ons

- Refurbishment or repair
- Repackaging
- Cleaning or sanitization
- Recycling or certified disposal
- Return label generation
- Customer refund integration
- Cross-border returns
- CO₂ reporting
- Return-to-vendor (RTV) management

5. Operational Workflow

1. Return initiation

- Customer generates return label
- Return arrives at warehouse or drop-off point

2. Receiving

- Scanning and identification
- Verification against order data

3. Inspection

- Visual and functional check
- Grading (A/B/C/D quality)
- Decision: restock, refurbish, recycle, or dispose



4. Processing

- Repackaging
- Cleaning or repair (if applicable)
- Updating WMS and inventory

5. Final disposition

- Restocking into active inventory
- Return-to-vendor
- Liquidation
- Recycling or disposal

6. Customer communication

- Refund or replacement triggered
- Tracking and status updates

6. Pricing Model

Returns Management pricing is **transaction-based** and depends on complexity.

Common pricing structures

- **Per return received**
- **Inspection fee**
- **Repackaging fee**
- **Refurbishment fee**
- **Disposal or recycling fee**
- **Storage fee for returned goods**

Cost drivers

- Product category
- Inspection complexity
- Refurbishment requirements
- Packaging needs
- Return volume
- Sustainability requirements



7. Key KPIs

Operational KPIs

- Return processing time
- Inspection accuracy
- Restock rate (%)
- Refund cycle time
- Damage or loss rate

Commercial KPIs

- Cost per return
- Recovery value per item
- Customer retention
- Return rate trends

Sustainability KPIs

- Percentage of items recycled
- Waste reduction
- CO₂ emissions per return

8. Risks & Challenges

Operational risks

- High return volumes during peak seasons
- SKU complexity
- Fraudulent returns
- Inspection errors

Commercial risks

- High cost per return
- Low recovery value
- Customer dissatisfaction due to slow refunds

Regulatory risks

- Waste disposal regulations



- Data protection (customer data)
- Product safety compliance

9. Differentiators (How to stand out)

A. Speed

- Same-day return processing
- Fast refund triggers
- Automated workflows

B. Technology

- Real-time WMS integration
- Automated grading systems
- API connections with e-commerce platforms

C. Sustainability

- Recycling programs
- Refurbishment and resale
- CO₂ reporting

D. Customer experience

- Transparent return tracking
- Easy return label generation
- High-quality repackaging

E. Cost efficiency

- Optimized labor
- Consolidated carrier rates
- Smart routing of returned goods

10. When Returns Management is the best solution

It is ideal when:

- The customer sells online and faces high return rates
- Fast refunds are essential for customer satisfaction
- Inventory must be reintegrated quickly



- Sustainability and waste reduction matter
- The brand wants to scale without operational bottlenecks



6.6. Value-Added Services (VAS) – Labelling, Kitting, Assembly

Definition:

Value-Added Services (VAS) are **custom operational activities** performed in the warehouse to prepare products for sale, distribution, or final use.

These services go beyond standard storage and handling, enabling **product customization, compliance, and market readiness**.

VAS is a **high-impact, high-margin** product category that allows logistics providers to integrate deeper into customer supply chains.

1. Product Description

VAS includes a wide range of operational tasks performed on products or packaging to meet customer, regulatory, or market requirements.

Core VAS categories

- **Labelling:** Applying barcodes, compliance labels, price tags, or promotional stickers
- **Kitting:** Combining multiple SKUs into a single kit or bundle
- **Assembly:** Light assembly, pre-assembly, or product configuration
- **Repacking:** Changing packaging format or quantity
- **Quality checks:** Visual or functional inspections
- **Customization:** Inserts, branding, promotional materials

Typical use cases

- Retail compliance labelling
- E-commerce bundles and gift sets
- Subscription box preparation
- Pre-assembly for industrial components
- Promotional campaigns
- Market-specific packaging

2. Customer Segments

VAS is used by companies needing **customization, compliance, or value enhancement** before products reach the market.



Ideal customers

- E-commerce brands
- Retailers and wholesalers
- FMCG companies
- Consumer electronics
- Cosmetics and beauty
- Automotive and industrial suppliers
- Subscription box providers
- Marketing and promotional agencies

Customer needs

- Fast and accurate customization
- Compliance with retailer requirements
- Flexible, scalable operations
- Reduced in-house labor
- Improved speed-to-market

3. Value Proposition

Operational value

- Reduces customer workload
- Ensures compliance with retailer standards
- Increases supply chain flexibility
- Supports product launches and promotions

Commercial value

- High-margin service
- Strong customer retention
- Additional revenue streams

Strategic value

- Deepens integration into customer operations
- Enables end-to-end logistics solutions



- Supports omnichannel and e-commerce growth

4. Service Scope

Included

- Standard labelling
- Basic kitting
- Light assembly
- Repacking
- WMS updates
- Quality checks

Optional add-ons

- Custom packaging
- Branding and inserts
- Serial number tracking
- Shrink-wrapping or heat-sealing
- Batch/lot relabelling
- Multi-SKU promotional kits
- Technical assembly (light industrial)
- CO₂ reporting
- Return-to-vendor preparation

5. Operational Workflow

1. Work order creation

- Customer provides instructions
- WMS generates tasks
- Materials and SKUs allocated

2. Execution

- Labelling: barcode, price, compliance, promo
- Kitting: combining SKUs into kits
- Assembly: attaching components, adding accessories



- Repacking: changing packaging format

3. Quality control

- Visual inspection
- Functional checks (if applicable)
- Verification against work order

4. Completion

- WMS update
- Packaging and palletization
- Storage or outbound shipping

6. Pricing Model

VAS pricing is **activity-based** and depends on labor intensity.

Common pricing structures

- **Per unit** (label, kit, assembly)
- **Per hour** (labor-based)
- **Per project** (campaigns, promotions)
- **Material surcharge** (packaging, labels)

Cost drivers

- Complexity of task
- Number of SKUs involved
- Packaging requirements
- Volume and frequency
- Quality control needs

7. Key KPIs

Operational KPIs

- Processing accuracy (%)
- Throughput per hour
- Rework rate
- On-time completion



- Quality inspection pass rate

Commercial KPIs

- Margin per activity
- Revenue per project
- Customer retention
- Utilization of VAS teams

Sustainability KPIs

- Packaging waste reduction
- Reusable materials usage
- CO₂ emissions per activity

8. Risks & Challenges

Operational risks

- Human error in labelling or kitting
- SKU complexity
- Seasonal peaks
- Quality issues

Commercial risks

- Price sensitivity
- High labor dependency
- Fluctuating demand

Regulatory risks

- Incorrect compliance labelling
- Product safety regulations
- Packaging waste laws

9. Differentiators (How to stand out)

A. Flexibility

- Fast turnaround
- Scalable workforce



- Modular service packages

B. Quality

- High accuracy
- Standardized SOPs
- Dedicated VAS teams

C. Technology

- WMS-driven work orders
- Barcode/RFID tracking
- Real-time reporting

D. Customization

- Branded packaging
- Promotional kits
- Subscription box assembly

E. Customer experience

- Transparent pricing
- Detailed reporting
- Dedicated project management

10. When Value-Added Services are the best solution

VAS is ideal when:

- Products need customization before sale
- Retail compliance is required
- Promotions or campaigns require special packaging
- E-commerce bundles or kits are needed
- Customers want to outsource labor-intensive tasks



6.7. Inventory Management – Inventory Control & Stock Accuracy

Definition:

Inventory Management (Inventory Control) refers to the **processes, systems, and controls** used to ensure that stock levels in a warehouse are **accurate, traceable, and aligned with physical reality**.

It includes **cycle counting, reconciliation, stock audits, discrepancy resolution, and real-time visibility**.

High stock accuracy is the foundation of **reliable fulfillment, efficient operations, and customer trust**.

1. Product Description

Inventory Management ensures that every SKU is **correctly recorded, located, and available** when needed.

It combines **process discipline, technology, and continuous monitoring**.

Key characteristics

- Real-time inventory visibility
- High stock accuracy (typically 98–99.9%)
- Cycle counting and audits
- Discrepancy investigation
- SKU-level traceability
- Integration with WMS/ERP systems

Typical inventory types

- Palletized goods
- Shelf and bin stock
- E-commerce SKUs
- Lot/batch-controlled items
- Serialized products
- Temperature-controlled or ADR goods

2. Customer Segments

Inventory control is essential for any company to store goods in a warehouse.



Ideal customers

- Retailers and wholesalers
- E-commerce brands
- FMCG companies
- Industrial manufacturers
- Automotive suppliers
- Pharmaceutical and chemical companies
- 3PLs managing multi-client warehouses

Customer needs

- Accurate stock levels
- Real-time visibility
- Reduced stockouts and overstock
- Compliance with audits
- Efficient replenishment

3. Value Proposition

Operational value

- Fewer picking errors
- Faster order fulfillment
- Reduced operational waste
- Improved warehouse efficiency

Commercial value

- Lower working capital
- Reduced safety stock
- Fewer lost sales
- Lower write-off costs

Strategic value

- Supports omnichannel and e-commerce
- Enables automation and forecasting



- Strengthens customer trust

4. Service Scope

Included

- Cycle counting
- Annual or quarterly stock audits
- Real-time WMS updates
- Discrepancy investigation
- Inventory reporting
- Location accuracy checks

Optional add-ons

- RFID-based inventory tracking
- Serialized inventory management
- Lot/batch tracking
- ABC inventory classification
- Demand forecasting support
- CO₂ reporting
- Audit preparation for regulated industries (pharma, chemicals)

5. Operational Workflow

1. Inbound accuracy

- Barcode scanning
- Quantity verification
- Put-away confirmation

2. Storage accuracy

- Location control
- Real-time WMS updates
- Replenishment accuracy

3. Cycle counting

- Daily/weekly/monthly counts



- ABC prioritization
- Zero-pick location checks

4. Discrepancy management

- Root cause analysis
- Adjustment approval
- Corrective actions

5. Reporting

- Stock accuracy KPIs
- Aging reports
- Slow-moving and dead stock analysis

6. Pricing Model

Inventory management pricing is **activity-based** and depends on complexity.

Common pricing structures

- **Per cycle count**
- **Per SKU**
- **Per audit event**
- **Monthly inventory management fee**
- **Exception handling fee**

Cost drivers

- Number of SKUs
- Inventory turnover
- Storage type (pallet, bin, shelf)
- Compliance requirements
- Technology used (RFID, scanners, automation)

7. Key KPIs

Operational KPIs

- Stock accuracy (%)
- Location accuracy (%)



- Cycle count completion rate
- Discrepancy rate
- Shrinkage rate

Commercial KPIs

- Cost per SKU
- Working capital tied in inventory
- Write-off value
- Customer satisfaction

Sustainability KPIs

- Waste reduction
- CO₂ impact of reduced rework
- Packaging waste from corrections

8. Risks & Challenges

Operational risks

- Human error in picking or put-away
- Poor location discipline
- High SKU complexity
- Inadequate WMS configuration

Commercial risks

- Stockouts and lost sales
- Excess inventory
- High write-offs
- Customer dissatisfaction

Regulatory risks

- Pharma GDP compliance
- Chemical traceability
- Audit requirements

9. Differentiators (How to stand out)



A. Technology

- Real-time WMS
- RFID or barcode automation
- Automated cycle counting

B. Accuracy

- 99%+ stock accuracy
- Zero-error inbound processes
- Strong discrepancy management

C. Transparency

- Real-time dashboards
- Automated reporting
- Customer-facing visibility tools

D. Process excellence

- ABC cycle counting
- Root cause analysis
- Continuous improvement

E. Customer experience

- Predictable inventory
- Fewer backorders
- High service reliability

10. When Inventory Management is the best solution

It is ideal when:

- Stock accuracy is critical for operations
- The customer needs real-time visibility
- SKU complexity is high
- E-commerce or retail fulfillment is involved
- Compliance or audits are required



6.8. VMI – Vendor Managed Inventory (Vendor-Managed Stock Control)

Definition:

Vendor Managed Inventory (VMI) is a supply chain model where the **supplier takes responsibility for monitoring, planning, and replenishing the customer's inventory**. The vendor uses **real-time stock data, consumption patterns, and agreed service levels** to ensure optimal inventory availability.

VMI reduces stockouts, lowers working capital, and creates a **deep, long-term strategic partnership** between supplier and customer.

1. Product Description

Under VMI, the supplier manages inventory levels at the customer's warehouse, production site, or distribution center.

The customer provides **visibility**, while the vendor provides **planning and replenishment**.

Key characteristics

- Supplier monitors customer inventory
- Automated or semi-automated replenishment
- Agreed minimum/maximum stock levels
- Real-time data exchange (EDI/API)
- High stock accuracy and availability
- Reduced administrative workload

Typical inventory types

- Raw materials
- Components and spare parts
- Packaging materials
- FMCG and retail goods
- Industrial consumables
- Chemicals (non-hazardous or ADR-compliant zones)

2. Customer Segments

VMI is used by companies with **stable consumption patterns, high SKU volumes, or critical supply continuity needs**.



Ideal customers

- Manufacturers (automotive, industrial, electronics)
- Retailers and wholesalers
- FMCG companies
- Chemical and pharma producers
- E-commerce brands
- Construction and engineering firms

Customer needs

- Reliable stock availability
- Reduced administrative burden
- Lower working capital
- Accurate forecasting
- Supplier collaboration

3. Value Proposition

Operational value

- Fewer stockouts
- Optimized replenishment
- Reduced manual ordering
- Higher inventory accuracy

Commercial value

- Lower inventory carrying costs
- Reduced safety stock
- Improved cash flow
- Lower administrative costs

Strategic value

- Strong supplier–customer partnership
- Improved supply chain resilience
- Better forecasting and planning



4. Service Scope

Included

- Inventory monitoring
- Replenishment planning
- Order creation and execution
- Stock level reporting
- Minimum/maximum level management
- KPI tracking

Optional add-ons

- On-site vendor-managed storage
- Consignment stock
- Automated replenishment (EDI/API)
- Demand forecasting
- ABC classification
- CO₂ reporting
- Integration with ERP/WMS systems

5. Operational Workflow

1. Data integration

- Customer shares inventory and consumption data
- Vendor connects via EDI/API or WMS access

2. Inventory monitoring

- Real-time or scheduled stock checks
- Consumption trend analysis

3. Replenishment planning

- Vendor calculates required quantities
- Minimum/maximum levels applied
- Forecasting for seasonal or project demand

4. Order execution



- Vendor creates replenishment orders
- Customer receives goods automatically

5. Reporting & review

- KPI dashboards
- Monthly/quarterly performance reviews
- Continuous improvement

6. Pricing Model

VMI pricing is typically **service-based** and reflects the value of planning and visibility.

Common pricing structures

- **Monthly VMI service fee**
- **Per SKU fee**
- **Replenishment transaction fee**
- **Data integration fee**
- **Performance-based incentives**

Cost drivers

- Number of SKUs
- Data integration complexity
- Frequency of replenishment
- Inventory turnover
- Forecasting requirements

7. Key KPIs

Operational KPIs

- Stock accuracy (%)
- Stockout rate
- Replenishment accuracy
- Forecast accuracy
- Lead time adherence

Commercial KPIs



- Inventory carrying cost
- Working capital reduction
- Order frequency
- Supplier performance

Sustainability KPIs

- Waste reduction
- CO₂ impact of optimized replenishment
- Packaging reduction

8. Risks & Challenges

Operational risks

- Poor data quality
- Inaccurate consumption forecasts
- System integration issues
- Supplier dependency

Commercial risks

- Misaligned incentives
- Over- or under-stocking
- Contractual complexity

Regulatory risks

- Traceability requirements
- Compliance for regulated goods
- Data protection

9. Differentiators (How to stand out)

A. Technology

- Real-time dashboards
- Automated replenishment algorithms
- ERP/WMS integration

B. Accuracy



- High forecast accuracy
- Zero-stockout performance
- Strong data governance

C. Partnership

- Joint planning sessions
- Transparent communication
- Shared KPIs

D. Flexibility

- Multi-SKU, multi-site VMI
- Consignment stock options
- Custom replenishment rules

E. Customer experience

- Reduced administrative workload
- Predictable supply
- High service reliability

10. When VMI is the best solution

VMI is ideal when:

- The customer wants to reduce working capital
- Stockouts are costly or disruptive
- Consumption is stable or predictable
- Supplier collaboration is strong
- Administrative workload must be reduced



7.0. Transport Planning –

Routing & Capacity Management

Definition:

Transport Planning is the process of **designing, optimizing, and managing transport routes, vehicle capacity, and resource allocation** to ensure efficient, cost-effective, and reliable freight movements.

It includes **routing, load planning, scheduling, carrier selection, and capacity optimization** across road, rail, air, and sea.

Transport planning is the **brain of logistics operations**, balancing cost, service levels, and operational constraints.

1. Product Description

Transport Planning ensures that every shipment is moved using the **optimal route, mode, and capacity**, while respecting customer requirements and operational constraints.

Key characteristics

- Route optimization (distance, time, cost)
- Capacity planning (vehicle, trailer, container, wagon)
- Scheduling and dispatching
- Multi-stop and multi-drop planning
- Carrier and mode selection
- Real-time adjustments based on disruptions
- Integration with TMS, telematics, and WMS

Typical planning scopes

- Road transport (FTL, LTL, groupage)
- Rail and intermodal flows
- Air and ocean freight coordination
- Last-mile delivery
- Cross-border transport
- Multi-modal routing

2. Customer Segments



Transport planning is used by companies with **complex, multi-shipment, or time-sensitive logistics flows**.

Ideal customers

- Manufacturers (automotive, industrial, FMCG)
- Retailers and wholesalers
- E-commerce companies
- 3PLs and freight forwarders
- Chemical and pharma producers
- Construction and project logistics

Customer needs

- Reliable delivery times
- Cost-efficient routing
- Capacity availability
- Real-time visibility
- Compliance with regulations

3. Value Proposition

Operational value

- Optimized routes reduce transit time
- Better capacity utilization
- Fewer empty miles
- Improved on-time performance

Commercial value

- Lower transport cost per shipment
- Reduced fuel consumption
- Better carrier negotiation leverage
- Predictable cost structure

Strategic value

- Supports scalable logistics networks



- Enables multi-modal optimization
- Improves customer satisfaction
- Reduces environmental footprint

4. Service Scope

Included

- Route planning and optimization
- Capacity allocation (vehicles, trailers, containers)
- Scheduling and dispatching
- Carrier selection and booking
- Real-time monitoring and re-planning
- KPI reporting

Optional add-ons

- Dynamic routing (real-time traffic, weather)
- Multi-modal optimization
- CO₂-optimized routing
- Load consolidation and pooling
- Customs and cross-border planning
- Digital twin simulations
- AI-based demand forecasting

5. Operational Workflow

1. Order intake

- Customer orders received via TMS/EDI/API
- Shipment requirements validated

2. Routing

- Optimal route calculated
- Constraints applied (time windows, ADR, tolls, weight limits)

3. Capacity planning

- Vehicle or container assigned



- Load consolidation (LTL/groupage)
- Multi-stop sequencing

4. Scheduling & dispatch

- Driver or carrier assigned
- Departure and arrival times planned
- Documentation prepared

5. Execution & monitoring

- Real-time tracking
- Exception management
- Re-routing if needed

6. Post-trip analysis

- KPI reporting
- Cost analysis
- Continuous improvement

6. Pricing Model

Transport planning pricing is **service-based** and depends on complexity and volume.

Common pricing structures

- **Per shipment planned**
- **Monthly planning service fee**
- **Per route optimization**
- **Per vehicle/day planning fee**
- **TMS integration fee**

Cost drivers

- Shipment volume
- Network complexity
- Multi-modal requirements
- Real-time planning needs
- ADR or special cargo constraints



7. Key KPIs

Operational KPIs

- On-time pickup/delivery
- Route efficiency (km per shipment)
- Empty mileage (%)
- Capacity utilization (%)
- Planning accuracy

Commercial KPIs

- Cost per shipment
- Fuel efficiency
- Carrier performance
- Margin per lane

Sustainability KPIs

- CO₂ emissions per shipment
- Empty km reduction
- Energy-efficient routing

8. Risks & Challenges

Operational risks

- Traffic and weather disruptions
- Capacity shortages
- Incorrect data inputs
- Regulatory constraints (ADR, weight limits)

Commercial risks

- Volatile fuel prices
- Carrier availability
- Seasonal demand peaks

Regulatory risks

- Driving time regulations



- ADR routing restrictions
- Cross-border compliance

9. Differentiators (How to stand out)

A. Technology

- Advanced TMS
- AI-based routing
- Real-time telematics integration

B. Efficiency

- High capacity utilization
- Low empty mileage
- Fast planning cycles

C. Flexibility

- Multi-modal planning
- Dynamic re-routing
- Peak season scalability

D. Transparency

- Real-time visibility
- Customer dashboards
- Predictive ETA

E. Customer experience

- Reliable delivery performance
- Proactive communication
- Tailored routing strategies

10. When Transport Planning is the best solution

It is ideal when:

- The customer has frequented or complex shipments
- Cost and service levels must be optimized
- Capacity is limited or volatile



- Multi-modal routing is required
- Real-time visibility is essential



7.1. Network Design –

Site & Network Optimization

Definition:

Network Design is the analytical and strategic process of **designing, optimizing, and restructuring a company's logistics network** including warehouses, hubs, cross-docks, transport routes, and inventory flows.

It uses **data-driven modeling, scenario simulation, and optimization algorithms** to determine the **optimal number, size, and location** of sites and the most efficient transport flows between them.

This is a **board-level, high-impact** product that can reduce logistics costs by 10–30% while improving service levels.

1. Product Description

Network Design evaluates the entire supply chain footprint and identifies the **optimal configuration** to meet cost, service, and sustainability goals.

Key characteristics

- Strategic analysis of logistics footprint
- Optimization of warehouse and hub locations
- Transport network redesign (FTL, LTL, intermodal)
- Inventory positioning and flow optimization
- Scenario modeling (growth, nearshoring, demand shifts)
- Cost-to-serve analysis
- Digital twin simulations

Typical scope

- National or regional distribution networks
- European or global supply chains
- Multi-warehouse and multi-modal networks
- E-commerce and omnichannel networks
- Manufacturing supply chains

2. Customer Segments



Network Design is used by companies undergoing **growth, restructuring, or cost-optimization initiatives.**

Ideal customers

- Retailers and FMCG companies
- E-commerce and omnichannel brands
- Industrial manufacturers
- Automotive suppliers
- Chemical and pharma companies
- 3PLs designing networks for clients
- Private equity (due diligence on supply chains)

Customer needs

- Lower logistics costs
- Faster delivery times
- Better inventory placement
- Scalable network for growth
- Sustainability improvements

3. Value Proposition

Operational value

- Reduced lead times
- Optimized transport flows
- Better warehouse utilization
- Improved service levels

Commercial value

- 10–30% logistics cost reduction
- Lower inventory carrying costs
- Reduced transport spend
- Improved cost-to-serve transparency

Strategic value



- Supports expansion and market entry
- Enables omnichannel capabilities
- Strengthens resilience and risk mitigation
- Aligns supply chain with corporate strategy

4. Service Scope

Included

- Data collection and validation
- Baseline network assessment
- Transport and warehouse cost modeling
- Optimization algorithms (location, routing, flows)
- Scenario simulation
- Recommendations and implementation roadmap

Optional add-ons

- Digital twin creation
- Sustainability modeling (CO₂ optimization)
- Inventory optimization
- Transport mode shift analysis (road ↔ rail ↔ barge)
- Outsourcing vs insourcing evaluation
- Tender support for new network setup
- Change management and implementation support

5. Operational Workflow

1. Data intake

- Demand data (orders, volumes, SKUs)
- Transport flows
- Warehouse operations
- Costs and service levels

2. Baseline modeling

- Current network performance



- Cost-to-serve analysis
- Bottleneck identification

3. Optimization

- Facility location modeling
- Transport routing optimization
- Inventory positioning
- Capacity planning

4. Scenario simulation

- Growth scenarios
- Nearshoring/offshoring
- New warehouse locations
- Mode shift (road → rail/barge)
- Service level changes

5. Recommendation

- Optimal network configuration
- Cost and service impact
- Implementation roadmap

6. Pricing Model

Network Design pricing is **project-based** and reflects analytical complexity.

Common pricing structures

- **Fixed project fee**
- **Phase-based pricing** (diagnostic → modeling → roadmap)
- **Performance-based fee** (shared savings)
- **Digital twin subscription**

Cost drivers

- Number of sites
- Geographic scope
- Data complexity



- Number of scenarios
- Required modeling depth

7. Key KPIs

Operational KPIs

- Lead time reduction
- Warehouse utilization
- Transport efficiency
- Network reliability

Commercial KPIs

- Total logistics cost
- Cost-to-serve
- Inventory carrying cost
- ROI of network redesign

Sustainability KPIs

- CO₂ emissions per shipment
- Modal shift impact
- Energy efficiency

8. Risks & Challenges

Operational risks

- Poor data quality
- Incorrect demand forecasting
- Implementation complexity
- Change resistance

Commercial risks

- High upfront investment
- Misaligned incentives
- Underestimated transition costs

Regulatory risks



- Cross-border compliance
- Environmental regulations
- Labor and zoning restrictions

9. Differentiators (How to stand out)

A. Advanced analytics

- AI-driven optimization
- Digital twin simulations
- Real-time scenario modeling

B. Strategic expertise

- Deep industry knowledge
- End-to-end supply chain perspective
- Strong implementation support

C. Sustainability

- CO₂-optimized network design
- Modal shift strategies
- Green warehouse footprint

D. Customer experience

- Clear, actionable recommendations
- Transparent modeling
- Executive-level storytelling

10. When Network Design is the best solution

It is ideal when:

- Costs are rising and efficiency is needed
- The company is expanding or entering new markets
- Service levels must improve
- Inventory is poorly positioned
- The network is outdated or fragmented
- Sustainability targets require redesign





7.2. Capacity Planning – Forecasting

Definition:

Capacity Planning & Forecasting is the process of **predicting future transport and warehouse demand** and ensuring that the required **vehicles, drivers, equipment, warehouse space, and labor** are available at the right time and place.

It uses **historical data, seasonality, customer forecasts, and predictive analytics** to balance **capacity, cost, and service levels**.

This is a **strategic control tower function** that prevents bottlenecks, reduces cost volatility, and ensures operational stability.

1. Product Description

Capacity Planning ensures that logistics operations have the **right amount of resources** to meet demand without over- or under-capacity.

Key characteristics

- Demand forecasting (daily, weekly, monthly)
- Transport capacity planning (FTL, LTL, intermodal)
- Warehouse labor and space planning
- Peak season preparation
- Scenario modeling
- Customer forecast integration
- Predictive analytics

Typical planning scopes

- Road transport (fleet and subcontractors)
- Rail and intermodal capacity
- Warehouse labor and picking capacity
- Storage space forecasting
- Last-mile delivery peaks
- Cross-border and seasonal flows

2. Customer Segments

Capacity planning is used by companies with **variable demand, seasonal peaks, or complex multi-modal networks**.



Ideal customers

- Retailers and FMCG companies
- E-commerce brands
- Industrial manufacturers
- Automotive suppliers
- Chemical and pharma producers
- 3PLs managing multi-client operations

Customer needs

- Stable service levels
- Predictable capacity
- Cost control
- Peak season readiness
- Reduced operational risk

3. Value Proposition

Operational value

- Prevents capacity shortages
- Reduces last-minute carrier bookings
- Improves warehouse staffing accuracy
- Ensures smooth peak season operations

Commercial value

- Lower transport and labor costs
- Reduced premium/spot market rates
- Better carrier negotiation leverage
- Optimized resource utilization

Strategic value

- Supports long-term growth
- Improves customer satisfaction
- Strengthens supply chain resilience



- Enables proactive decision-making

4. Service Scope

Included

- Demand forecasting
- Transport capacity planning
- Warehouse labor planning
- Space utilization forecasting
- Customer forecast integration
- KPI reporting

Optional add-ons

- AI-based predictive forecasting
- Digital twin simulations
- Multi-modal capacity optimization
- CO₂-optimized capacity planning
- Workforce scheduling tools
- Peak season playbooks
- S&OP (Sales & Operations Planning) integration

5. Operational Workflow

1. Data collection

- Historical shipment data
- Customer forecasts
- Seasonality patterns
- Market trends
- Lead times and carrier availability

2. Forecasting

- Statistical models (moving average, regression)
- AI/ML forecasting (optional)
- Scenario analysis (best/expected/worst case)



3. Capacity calculation

- Required vehicles, trailers, containers
- Warehouse labor hours
- Storage space requirements
- Carrier and subcontractor needs

4. Planning & allocation

- Assigning capacity to lanes
- Securing carrier commitments
- Scheduling warehouse shifts
- Reserving storage space

5. Monitoring & adjustment

- Weekly/daily forecast updates
- Exception management
- Re-planning based on real-time data

6. Pricing Model

Capacity planning pricing is **service-based** and depends on data complexity and forecasting frequency.

Common pricing structures

- **Monthly planning service fee**
- **Per forecast cycle**
- **Per SKU or per lane**
- **Data integration fee**
- **Peak season planning fee**

Cost drivers

- Number of lanes or SKUs
- Forecasting frequency
- Data complexity
- Multi-modal requirements



- AI/ML forecasting tools

7. Key KPIs

Operational KPIs

- Forecast accuracy (%)
- Capacity utilization (%)
- On-time delivery
- Warehouse productivity
- Peak season performance

Commercial KPIs

- Cost per shipment
- Spot market spend
- Labor cost variance
- Carrier commitment adherence

Sustainability KPIs

- Empty km reduction
- CO₂ emissions per shipment
- Energy-efficient resource allocation

8. Risks & Challenges

Operational risks

- Poor data quality
- Sudden demand spikes
- Carrier shortages
- Seasonal volatility

Commercial risks

- High spot market costs
- Underutilized capacity
- Labor shortages

Regulatory risks



- Driving time regulations
- ADR capacity constraints
- Cross-border restrictions

9. Differentiators (How to stand out)

A. Technology

- AI-driven forecasting
- Real-time dashboards
- Digital twin simulations

B. Accuracy

- High forecast precision
- Strong data governance
- Continuous improvement loops

C. Flexibility

- Multi-modal capacity planning
- Rapid re-planning
- Peak season scalability

D. Transparency

- Customer-facing dashboards
- Clear capacity commitments
- Predictive alerts

E. Customer experience

- Stable service levels
- Proactive communication
- Reduced volatility

10. When Capacity Planning & Forecasting is the best solution

It is ideal when:

- Demand fluctuates significantly
- Peak seasons create bottlenecks



- Transport capacity is constrained
- Warehouse labor is difficult to scale
- Cost control is a priority
- Customers require high service reliability



7.3. Execution – Control Tower

(End-to-End Visibility)

Definition:

A Control Tower is a centralized, technology-enabled command center that provides **real-time, end-to-end visibility, monitoring, exception management, and decision support** across the entire supply chain.

It integrates data from **transport, warehousing, inventory, carriers, customers, and IoT devices** to enable **proactive, predictive, and coordinated execution**.

A Control Tower is the **nerve center** of modern logistics enabling transparency, speed, and resilience.

1. Product Description

The Control Tower monitors and manages the full supply chain in real time, from order creation to final delivery.

Key characteristics

- End-to-end visibility (order → warehouse → transport → delivery)
- Real-time tracking of shipments, inventory, and assets
- Predictive ETA and risk alerts
- Exception management and escalation
- Multi-party collaboration (customer, carrier, warehouse, supplier)
- Data integration across systems (TMS, WMS, ERP, telematics, IoT)
- 24/7 monitoring and proactive intervention

Typical scope

- Road, rail, ocean, air, and intermodal flows
- Warehousing and fulfillment operations
- Inventory and order lifecycle
- Carrier and supplier performance
- Customer service and communication

2. Customer Segments

Control Towers are used by companies with **complex, multi-node, multi-modal supply chains**.



Ideal customers

- Global manufacturers
- Retailers and FMCG companies
- E-commerce and omnichannel brands
- Automotive and industrial suppliers
- Chemical and pharma companies
- 3PLs managing multi-client networks

Customer needs

- Real-time visibility
- Predictive risk management
- Faster decision-making
- Lower operational cost
- Improved customer service

3. Value Proposition

Operational value

- Real-time monitoring of all flows
- Faster issue resolution
- Predictive alerts (delays, disruptions, shortages)
- Improved on-time performance

Commercial value

- Lower cost through proactive planning
- Reduced penalties and service failures
- Better carrier and supplier performance
- Optimized inventory and transport spend

Strategic value

- Enables resilient, agile supply chains
- Supports digital transformation
- Enhances customer trust and transparency



- Provides executive-level insights

4. Service Scope

Included

- End-to-end visibility dashboards
- Real-time tracking (shipments, inventory, orders)
- Exception detection and resolution
- Predictive ETA and risk scoring
- Daily operational monitoring
- KPI reporting and analytics

Optional add-ons

- 24/7 multilingual control tower operations
- AI-based predictive analytics
- Digital twin simulations
- CO₂ visibility and sustainability dashboards
- Carrier and supplier performance management
- Customer-specific SLA monitoring
- Automated workflow orchestration

5. Operational Workflow

1. Data integration

- TMS, WMS, ERP, telematics, IoT
- Carrier and supplier data feeds
- Customer order data

2. Real-time monitoring

- Shipment tracking
- Inventory levels
- Warehouse operations
- Exceptions and disruptions

3. Exception management



- Automated alerts
- Root cause analysis
- Proactive re-planning
- Customer communication

4. Decision support

- Predictive ETA
- Risk scoring
- Capacity and routing recommendations
- Inventory reallocation

5. Reporting & insights

- Daily operational dashboards
- Weekly performance reviews
- Monthly strategic insights

6. Pricing Model

Control Tower pricing is **service-based**, reflecting technology, analytics, and operational support.

Common pricing structures

- **Monthly subscription fee**
- **Per shipment monitored**
- **Per site or lane**
- **Tiered service levels (basic → advanced → 24/7)**
- **Integration fee**

Cost drivers

- Number of shipments
- Number of sites or regions
- Data integration complexity
- SLA requirements
- Level of automation



7. Key KPIs

Operational KPIs

- On-time delivery
- Exception resolution time
- Predictive ETA accuracy
- Visibility coverage (%)
- Inventory accuracy

Commercial KPIs

- Cost per shipment
- Penalty reduction
- Carrier performance
- Customer satisfaction

Sustainability KPIs

- CO₂ emissions per shipment
- Modal shift impact
- Empty km reduction

8. Risks & Challenges

Operational risks

- Poor data quality
- System integration issues
- Lack of real-time carrier data
- High complexity in multi-party networks

Commercial risks

- High initial setup cost
- Customer expectations for 24/7 coverage
- Data privacy and security requirements

Regulatory risks

- Cross-border compliance



- Data protection (GDPR)
- Industry-specific regulations (pharma, chemicals)

9. Differentiators (How to stand out)

A. Technology

- Real-time visibility platform
- AI-based predictive analytics
- Digital twin capabilities

B. Proactive operations

- Exception management before failure
- Predictive ETA
- Automated workflows

C. Transparency

- Customer-facing dashboards
- End-to-end traceability
- SLA monitoring

D. Scalability

- Multi-region, multi-modal
- Multi-client capability
- 24/7 global operations

E. Customer experience

- Proactive communication
- High service reliability
- Executive-level insights

10. When a Control Tower is the best solution

It is ideal when:

- The supply chain is complex or global
- Real-time visibility is required
- Service levels must improve



- Disruptions are frequent
- Customers demand transparency
- Cost and performance need optimization



7.4. Exception Management – Deviation Handling

Definition:

Exception Management (Deviation Handling) is the **real-time identification, assessment, and resolution of disruptions** across the supply chain.

It ensures that any deviation from the plan delays, damages, shortages, system errors, capacity issues is **detected early, escalated correctly, and resolved proactively**.

This is the **frontline defense** of operational excellence and a core pillar of Control Tower execution.

1. Product Description

Exception Management covers all activities required to **monitor, detect, analyze, and resolve deviations** in transport, warehousing, inventory, and order execution.

Key characteristics

- Real-time deviation detection
- Automated alerts and risk scoring
- Root cause analysis
- Proactive resolution and re-planning
- Multi-party coordination (carrier, warehouse, customer)
- SLA-driven escalation
- Full traceability and documentation

Typical exceptions handled

- Delayed pickup or delivery
- Missed time windows
- Damaged or missing goods
- Inventory discrepancies
- Capacity shortages
- Customs or border delays
- System or data errors
- Weather or traffic disruptions

2. Customer Segments



Exception Management is essential for companies with **time-critical, high-volume, or multi-party supply chains.**

Ideal customers

- Retailers and FMCG
- E-commerce and omnichannel
- Automotive and industrial
- Chemical and pharma
- 3PLs and freight forwarders
- Manufacturers with JIT/JIS flows

Customer needs

- Fast issue resolution
- Predictable service levels
- Transparent communication
- Reduced operational risk
- SLA compliance

3. Value Proposition

Operational value

- Faster detection and resolution of issues
- Reduced service failures
- Improved on-time performance
- Lower operational noise

Commercial value

- Reduced penalty costs
- Lower claims and damage costs
- Fewer expedited shipments
- Higher customer retention

Strategic value

- Strengthens supply chain resilience



- Enables proactive decision-making
- Enhances customer trust
- Supports Control Tower and visibility platforms

4. Service Scope

Included

- Real-time monitoring of shipments and orders
- Automated exception alerts
- Root cause analysis
- Proactive re-planning (rerouting, rebooking, rescheduling)
- Carrier and warehouse coordination
- Customer communication
- SLA-based escalation
- Documentation and reporting

Optional add-ons

- 24/7 exception desk
- Predictive exception analytics
- Automated workflows and bots
- Customer-specific playbooks
- Claims management
- CO₂-optimized re-routing
- Integration with Control Tower services

5. Operational Workflow

1. Detection

- System flags deviation (delay, damage, mismatch)
- Predictive ETA identifies risk before failure

2. Classification

- Severity (critical, major, minor)
- Impact (cost, service, compliance)



- SLA requirements

3. Root cause analysis

- Carrier feedback
- Warehouse investigation
- Data validation

4. Resolution

- Re-routing or re-booking
- Replacement shipment
- Inventory reallocation
- Customer notification

5. Escalation

- Triggered based on SLA or severity
- Involving management, customer, or carrier

6. Closure & documentation

- Final status update
- KPI logging
- Lessons learned

6. Pricing Model

Exception Management pricing is **service-based**, reflecting operational intensity.

Common pricing structures

- **Per shipment monitored**
- **Per exception handled**
- **Monthly exception desk fee**
- **Tiered SLA packages**
- **Integration fee**

Cost drivers

- Shipment volume
- Exception frequency



- SLA requirements
- Operating hours (business hours vs 24/7)
- Multi-party coordination complexity

7. Key KPIs

Operational KPIs

- Exception detection time
- Exception resolution time
- Predictive ETA accuracy
- On-time delivery improvement
- Escalation compliance

Commercial KPIs

- Cost per exception
- Penalty reduction
- Claims reduction
- Customer satisfaction

Sustainability KPIs

- CO₂ impact of re-routing
- Waste reduction (damage prevention)
- Empty km avoided

8. Risks & Challenges

Operational risks

- Poor data quality
- Delayed carrier feedback
- High exception volume
- Lack of standardized playbooks

Commercial risks

- High cost of manual handling
- Customer dissatisfaction



- SLA penalties

Regulatory risks

- Customs delays
- ADR or pharma compliance issues
- Documentation errors

9. Differentiators (How to stand out)

A. Proactive management

- Predictive alerts
- Automated risk scoring
- Early intervention

B. Technology

- Real-time visibility platform
- Automated workflows
- AI-based exception prediction

C. Process excellence

- Standardized playbooks
- Fast escalation paths
- Strong root cause analysis

D. Customer experience

- Transparent communication
- Clear status updates
- SLA-driven reliability

E. Scalability

- Multi-modal, multi-region
- 24/7 operations
- Multi-client capability

10. When Exception Management is the best solution

It is ideal when:



- The supply chain is time-critical
- Disruptions are frequent
- Customers demand transparency
- SLA compliance is essential
- Cost of failure is high
- A Control Tower or visibility platform is in place



7.5. Optimization – Cost Analysis (Freight & Process Costs)

Definition:

Cost Analysis is the systematic evaluation of **freight costs, operational processes, and end-to-end logistics expenses** to identify inefficiencies, cost drivers, and optimization opportunities.

It combines **data analytics, process mapping, benchmarking, and scenario modeling** to reduce total logistics cost while maintaining or improving service levels.

This is a **core consulting and operational excellence product**, often delivering 5–20% cost savings.

1. Product Description

Cost Analysis examines all cost components across the logistics chain, from transport to warehousing to administrative processes.

Key characteristics

- Full cost breakdown (transport, handling, storage, overhead)
- Lane-level freight cost analysis
- Process cost mapping (order → delivery)
- Benchmarking against market rates
- Identification of inefficiencies and waste
- Scenario modeling for cost reduction
- Clear, actionable recommendations

Typical cost categories analyzed

- Transport (FTL, LTL, parcel, intermodal)
- Warehousing (labor, space, equipment)
- Inventory carrying cost
- Administrative and process costs
- Accessorial (waiting time, demurrage, detention)
- Claims, damages, and penalties

2. Customer Segments



Cost Analysis is used by companies seeking **cost reduction, transparency, or operational improvement.**

Ideal customers

- Manufacturers (automotive, industrial, FMCG)
- Retailers and wholesalers
- E-commerce brands
- Chemical and pharma companies
- 3PLs optimizing their own networks
- Private equity (due diligence)

Customer needs

- Lower logistics costs
- Transparency of cost drivers
- Benchmarking vs market
- Identification of inefficiencies
- Data-driven decision-making

3. Value Proposition

Operational value

- Identifies bottlenecks and inefficiencies
- Reduces waste and non-value-added activities
- Improves process speed and reliability

Commercial value

- 5–20% cost savings
- Lower transport and warehousing spend
- Reduced accessorial charges
- Better carrier negotiation leverage

Strategic value

- Supports network redesign
- Enables long-term cost control



- Strengthens competitive advantage
- Provides executive-level insights

4. Service Scope

Included

- Freight cost analysis (lane-level)
- Process cost mapping (end-to-end)
- Benchmarking vs market rates
- Cost-to-serve analysis
- Root cause identification
- Savings opportunity assessment
- Recommendations and roadmap

Optional add-ons

- Digital twin cost simulation
- CO₂ cost modeling
- Carrier tender support
- Warehouse productivity analysis
- Inventory optimization
- S&OP integration
- Continuous cost monitoring dashboards

5. Operational Workflow

1. Data collection

- Transport invoices
- TMS/WMS data
- Process maps
- Carrier contracts
- Operational KPIs

2. Cost breakdown

- Transport cost per lane



- Handling cost per activity
- Storage cost per pallet/day
- Process cost per order

3. Benchmarking

- Market rate comparison
- Industry best practices
- Internal vs external performance

4. Root cause analysis

- Inefficient routing
- Poor capacity utilization
- Excessive manual processes
- High waiting/detention times
- Suboptimal warehouse layout

5. Optimization modeling

- Consolidation opportunities
- Mode shift (road → rail/barge)
- Network redesign
- Process automation
- Carrier renegotiation

6. Recommendations

- Clear savings roadmap
- Quick wins vs long-term initiatives
- Implementation plan

6. Pricing Model

Cost Analysis pricing is **project-based** or **value-based**.

Common pricing structures

- **Fixed project fee**
- **Savings-based fee** (gain-share)



- **Monthly optimization service fee**
- **Per lane or per site analysis fee**

Cost drivers

- Data complexity
- Number of lanes/sites
- Scope (transport only vs end-to-end)
- Benchmarking depth
- Modeling requirements

7. Key KPIs

Operational KPIs

- Cost per shipment
- Cost per pallet handled
- Empty km (%)
- Warehouse productivity
- Accessorial cost reduction

Commercial KPIs

- Total logistics cost
- Savings achieved
- Carrier rate variance
- Cost-to-serve accuracy

Sustainability KPIs

- CO₂ cost impact
- Modal shift savings
- Energy efficiency improvements

8. Risks & Challenges

Operational risks

- Poor data quality
- Lack of process transparency



- Resistance to change
- Inaccurate cost allocation

Commercial risks

- Volatile fuel prices
- Carrier market fluctuations
- Underestimated implementation costs

Regulatory risks

- Compliance-driven cost increases
- Cross-border complexities
- Environmental regulations

9. Differentiators (How to stand out)

A. Analytical depth

- Lane-level and SKU-level cost modeling
- Digital twin simulations
- Predictive cost forecasting

B. Transparency

- Clear cost breakdowns
- Customer-facing dashboards
- Full visibility of cost drivers

C. Actionability

- Concrete, prioritized savings roadmap
- Quick wins + long-term strategy
- Implementation support

D. Expertise

- Deep industry benchmarks
- Strong carrier negotiation capability
- End-to-end supply chain perspective

E. Sustainability



- CO₂-optimized cost modeling
- Green transport alternatives
- Energy-efficient process redesign

10. When Cost Analysis is the best solution

It is ideal when:

- Logistics costs are rising
- The customer lacks cost transparency
- Carrier rates are above market
- Processes are manual or inefficient
- Network redesign is being considered
- Profitability needs improvement



7.6. Route Optimization – Efficiency Improvement

Definition:

Route Optimization is the systematic improvement of transport routes to **minimize distance, time, cost, and emissions**, while respecting operational constraints such as **capacity, time windows, regulations, and service levels**.

It transforms routing from manual guesswork into a **data-driven, algorithmic efficiency engine**.

1. Product Description

Route Optimization ensures that every delivery run is executed in the **most efficient, cost-effective, and reliable** way.

Core capabilities

- Optimal route sequencing (multi-stop, multi-drop)
- Vehicle capacity and weight optimization
- Time-window and SLA compliance
- Real-time traffic and disruption integration
- Dynamic re-routing during execution
- Integration with TMS, telematics, and Control Tower

Operational scope

- Distribution networks (retail, FMCG)
- E-commerce last-mile
- LTL/groupage consolidation
- Cross-border transport
- Multi-modal routing

2. Customer Segments

Ideal for companies with **dense delivery networks, cost pressure, or complex routing**.

Best-fit customers

- Retailers & FMCG
- E-commerce & parcel carriers
- Industrial & automotive suppliers



- Chemical & pharma
- 3PLs with multi-stop distribution
- Transport companies with mixed fleets

3. Value Proposition

Operational impact

- 10–25% fewer kilometers
- Higher vehicle fill rates
- Reduced empty runs
- Improved on-time delivery

Financial impact

- Lower fuel and labor cost
- Reduced overtime
- Fewer penalties and SLA breaches
- Better carrier negotiation leverage

Strategic impact

- Supports scalable distribution
- Enables sustainability targets
- Improves customer satisfaction

4. Service Scope

Included

- Route calculation & optimization
- Load & capacity planning
- Time-window optimization
- Real-time re-routing
- KPI dashboards

Optional

- AI-based dynamic routing
- CO₂-optimized routing



- Digital twin simulations
- Driver navigation app integration
- Peak season routing strategies

5. Operational Workflow

1. Data intake

- Orders, locations, time windows
- Vehicle capacities
- Driver schedules
- Traffic & road restrictions

2. Optimization

- Route sequencing
- Load consolidation
- Capacity allocation
- SLA-compliant scheduling

3. Execution

- Dispatch to drivers
- Real-time tracking
- Dynamic re-routing

4. Monitoring

- ETA prediction
- Exception alerts
- Performance tracking

5. Reporting

- Cost per route
- Empty km
- On-time delivery
- CO₂ emissions

6. Pricing Model



Common structures

- Per route optimized
- Monthly subscription
- Per vehicle or per planner
- Integration fee

Cost drivers

- Fleet size
- Number of stops
- Real-time vs static routing
- Multi-modal complexity

7. Key KPIs

Efficiency

- km per stop
- Empty km (%)
- Vehicle utilization (%)

Service

- On-time delivery
- ETA accuracy

Cost

- Cost per route
- Fuel consumption

Sustainability

- CO₂ per route
- Modal shift impact

8. Risks & Challenges

- Poor data quality
- Inaccurate time windows
- Traffic unpredictability



- Driver non-compliance
- ADR or regulatory constraints

9. Differentiators

Technology

- AI-driven optimization
- Real-time traffic integration
- Digital twin modeling

Efficiency

- High fill rates
- Low empty km
- Fast planning cycles

Customer experience

- Predictive ETA
- SLA-driven planning
- Transparent dashboards

10. When Route Optimization is the right solution

- Transport costs are rising
- Fleet utilization is low
- Delivery reliability must improve
- Manual planning is too slow
- CO₂ reduction is a priority
- Network complexity is increasing



7.7. Packaging Optimization – Packaging Design

Definition:

Packaging Optimization is the systematic redesign and improvement of product packaging to **reduce cost, improve protection, enhance transport efficiency, and support sustainability goals.**

It includes **material selection, structural design, cube optimization, palletization, and transport-fit engineering.**

This is a **high-impact optimization product**, often delivering **10–30% cost savings** across transport, warehousing, and materials.

1. Product Description

Packaging Optimization ensures that products are packed in the **most efficient, protective, and cost-effective** way across the entire supply chain.

Core capabilities

- Structural packaging design
- Material optimization (thickness, type, recyclability)
- Cube and volume optimization
- Pallet and load-unit design
- Damage-reduction engineering
- Sustainability-driven redesign
- Packaging standardization

Typical use cases

- E-commerce packaging
- Retail-ready packaging
- Industrial and automotive components
- Fragile or high-value goods
- Temperature-controlled or ADR-compliant packaging

2. Customer Segments

Ideal for companies with **high packaging spend, high damage rates, or inefficient transport utilization.**

Best-fit customers



- Retailers & FMCG
- E-commerce brands
- Consumer electronics
- Automotive & industrial manufacturers
- Chemical & pharma
- 3PLs offering VAS and fulfillment

3. Value Proposition

Operational impact

- Reduced damage and return rates
- Faster packing and handling
- Better pallet stability
- Improved warehouse efficiency

Financial impact

- Lower packaging material cost
- Reduced transport cost through better cube utilization
- Lower storage cost
- Fewer claims and replacements

Strategic impact

- Supports sustainability goals
- Enhances customer experience (unboxing, branding)
- Enables automation (right-sized packaging)
- Standardizes operations across sites

4. Service Scope

Included

- Packaging assessment (materials, dimensions, protection)
- Structural redesign
- Cube and pallet optimization
- Cost and CO₂ impact analysis



- Prototype development
- Packaging testing (drop, vibration, compression)

Optional

- Custom branding and artwork
- Automated packaging line design
- Supplier sourcing and negotiation
- Retail-ready packaging design
- E-commerce packaging optimization
- Sustainability certification (FSC, recyclability)

5. Operational Workflow

1. Data intake

- Product dimensions and fragility
- Current packaging specs
- Transport and warehouse constraints
- Damage and return data

2. Analysis

- Material usage
- Cube efficiency
- Palletization patterns
- Damage root causes
- Cost breakdown

3. Design

- Structural redesign
- Material selection
- Right-sizing
- Pallet/load-unit engineering

4. Testing

- Drop tests



- Compression tests
- Transport simulation
- Prototype validation

5. Implementation

- Supplier onboarding
- SOP updates
- Training for warehouse teams

6. Monitoring

- Damage rate tracking
- Cost savings validation
- Continuous improvement

6. Pricing Model

Common structures

- Fixed project fee
- Per SKU packaging redesign
- Savings-based fee (gain-share)
- Monthly optimization service

Cost drivers

- Number of SKUs
- Complexity of packaging
- Testing requirements
- Sustainability targets
- Supplier integration

7. Key KPIs

Efficiency

- Cube utilization (%)
- Pallet fill rate
- Packaging time per unit



Cost

- Packaging cost per unit
- Transport cost per m³
- Damage/return cost reduction

Sustainability

- CO₂ per shipment
- Recyclability rate
- Material reduction (%)

Quality

- Damage rate
- Customer complaints
- Packaging consistency

8. Risks & Challenges

- Incorrect material selection
- Over-engineering (too much protection)
- Under-engineering (damage risk)
- Supplier resistance
- Regulatory constraints (ADR, food, pharma)

9. Differentiators

A. Engineering expertise

- Structural design
- Load-unit engineering
- Transport-fit optimization

B. Sustainability

- Recyclable materials
- CO₂-optimized packaging
- Material reduction strategies

C. Cost transparency



- Full cost breakdown
- Clear savings roadmap
- Benchmarking vs industry

D. Customer experience

- Branded unboxing
- Retail-ready packaging
- Reduced damage and returns

10. When Packaging Optimization is the right solution

- Packaging cost is high
- Transport costs per unit is rising
- Damage rates are unacceptable
- Sustainability targets require material reduction
- E-commerce packaging is inefficient
- Pallet fill rates are low
- Warehouse handling is slow or inconsistent



7.8. Visibility – Tracking (Multi-Carrier Tracking)

Definition:

Multi-Carrier Tracking provides **real-time, unified visibility** across all carriers, modes, and geographies by aggregating tracking data into a **single platform**.

It eliminates the complexity of logging into multiple carrier portals and enables **end-to-end shipment monitoring, predictive ETAs, and proactive exception management**.

This is a **core digital visibility product**, essential for modern supply chains.

1. Product Description

Multi-Carrier Tracking consolidates tracking data from **parcel, LTL, FTL, ocean, air, and rail carriers** into one interface.

Core capabilities

- Real-time tracking across all carriers
- Predictive ETA calculation
- Status updates (pickup → transit → delivery)
- Event standardization (harmonized milestones)
- Exception alerts (delay, failed delivery, customs hold)
- API/EDI integration with carriers
- Customer-facing tracking links

Typical scope

- Parcel networks (DHL, UPS, DPD, GLS, FedEx, etc.)
- Road carriers (FTL/LTL)
- Air freight AWB tracking
- Ocean container tracking
- Rail/intermodal visibility

. Customer Segments

Ideal for companies using **multiple carriers, multiple modes, or high shipment volumes**.

Best-fit customers

- E-commerce brands



- Retailers & FMCG
- Industrial manufacturers
- Automotive suppliers
- Chemical & pharma
- 3PLs managing multi-carrier networks

Customer needs

- One single source of truth
- Predictive delivery information
- Faster customer service response
- Reduced manual tracking
- Better exception management

. Value Proposition

Operational impact

- Real-time visibility across all shipments
- Faster issue detection
- Reduced manual tracking workload
- Improved customer communication

Financial impact

- Lower customer service cost
- Fewer failed deliveries
- Reduced penalties and claims
- Better carrier performance management

Strategic impact

- Enables Control Tower operations
- Supports omnichannel and e-commerce
- Strengthens customer trust
- Provides data for optimization

4. Service Scope



Included

- Multi-carrier API/EDI integrations
- Real-time tracking dashboard
- Predictive ETA engine
- Standardized event milestones
- Exception alerts and notifications
- Customer-facing tracking links
- KPI reporting

Optional

- 24/7 monitoring (Control Tower integration)
- CO₂ visibility per shipment
- Carrier performance analytics
- Automated customer notifications
- Integration with WMS/TMS/ERP
- White-label tracking portal

5. Operational Workflow

1. Data ingestion

- Carrier API/EDI feeds
- Telematics and GPS data
- IoT sensors (optional)

2. Event standardization

- Normalizing carrier events into unified milestones (e.g., “Out for delivery”, “In transit”, “Exception”)

3. Real-time tracking

- Shipment location
- Status updates
- Predictive ETA

4. Exception detection



- Delay alerts
- Failed delivery
- Customs hold
- Damage or loss indicators

5. Reporting

- On-time delivery
- Carrier performance
- Exception frequency
- CO₂ emissions (optional)

6. Pricing Model

Common structures

- Per shipment tracked
- Monthly subscription
- Per carrier integration
- Tiered visibility packages

Cost drivers

- Shipment volume
- Number of carriers
- Real-time vs batch updates
- Predictive analytics requirements
- Customer-facing features

7. Key KPIs

Visibility

- Tracking coverage (%)
- Real-time update frequency
- ETA accuracy

Service

- On-time delivery



- Exception resolution time
- Customer inquiry reduction

Cost

- Cost per shipment
- Customer service cost reduction

Sustainability

- CO₂ per shipment
- Modal shift insights

8. Risks & Challenges

- Carrier data quality varies
- Missing or delayed tracking events
- API downtime
- Customs and cross-border complexity
- Lack of standardization across carriers

9. Differentiators

A. Data quality

- High-frequency updates
- Predictive ETA engine
- Standardized milestones

B. Breadth

- Multi-mode, multi-carrier, multi-region
- Parcel + freight + ocean + air

C. Customer experience

- White-label tracking pages
- Automated notifications
- Proactive exception alerts

D. Integration

- Seamless TMS/WMS/ERP connectivity



- Control Tower compatibility

10. When Multi-Carrier Tracking is the right solution

- You use multiple carriers and modes
- Customer service spends too much time tracking
- Delivery reliability must improve
- You need predictive ETAs
- You want to reduce exceptions and failed deliveries
- You're building a Control Tower or visibility platform



7.9. ETA Predictions – AI-Based Forecasts

Definition:

AI-based ETA Predictions use **machine learning models, real-time data, and historical performance patterns** to calculate **highly accurate estimated times of arrival** for shipments across all modes and carriers.

Unlike static carrier ETAs, AI models continuously learn from **traffic, weather, delays, capacity, driver behavior, historical lane performance, and live telematics** to deliver **predictive, dynamic, and reliable ETAs**.

This is a **core visibility and control tower product**, essential for proactive logistics execution.

1. Product Description

AI-based ETA forecasting provides **real-time, continuously updated arrival predictions** for shipments, orders, and vehicles.

Core capabilities

- Predictive ETA calculation
- Real-time recalculation based on disruptions
- Lane-specific performance modeling
- Carrier-specific behavior learning
- Traffic, weather, and congestion integration
- Telematics and GPS data ingestion
- Confidence scoring (ETA reliability index)

Typical scope

- Road (FTL, LTL, parcel)
- Ocean container ETA prediction
- Air freight arrival forecasting
- Rail/intermodal ETA modeling
- Last-mile delivery prediction

2. Customer Segments

Ideal for companies where **delivery reliability, customer expectations, and operational planning** are critical.

Best-fit customers



- E-commerce & parcel networks
- Retailers & FMCG
- Automotive & industrial manufacturers
- Chemical & pharma
- 3PLs and freight forwarders
- Control Tower operators

3. Value Proposition

Operational impact

- Early detection of delays
- Proactive exception management
- Improved planning for docks, labor, and warehouse
- Reduced customer service workload

Financial impact

- Lower penalty and SLA failure costs
- Reduced redelivery and failed delivery attempts
- Better resource utilization
- Lower buffer stock and safety time

Strategic impact

- Stronger customer trust
- Higher service reliability
- Foundation for autonomous logistics
- Enables predictive supply chain orchestration

4. Service Scope

Included

- AI-based ETA engine
- Real-time recalculation
- Predictive delay alerts
- Lane-level performance modeling



- Carrier-specific ETA calibration
- Dashboard and API access

Optional

- CO₂-optimized ETA (eco-routing)
- Digital twin for predictive simulations
- Customer-facing ETA notifications
- Integration with WMS/TMS/ERP
- 24/7 Control Tower monitoring

5. Operational Workflow

1. Data ingestion

- GPS/telematics
- Carrier tracking events
- Traffic & weather feeds
- Historical lane performance
- Driver behavior patterns
- Border/customs data

2. AI modeling

- Machine learning prediction
- Pattern recognition
- Confidence scoring
- Continuous model training

3. Real-time recalculation

- Traffic changes
- Weather disruptions
- Delays or exceptions
- Route deviations

4. Alerts & actions

- Predictive delay alerts



- Proactive re-planning
- Customer notifications
- SLA risk scoring

5. Reporting

- ETA accuracy
- Delay root causes
- Carrier performance
- Lane reliability

6. Pricing Model

Common structures

- Per shipment with AI ETA
- Monthly subscription
- Per lane or per site
- API usage-based pricing

Cost drivers

- Shipment volume
- Real-time update frequency
- Number of carriers and modes
- Predictive analytics depth

7. Key KPIs

Accuracy

- ETA accuracy (%)
- Prediction confidence score
- Delay detection lead time

Service

- On-time delivery
- SLA compliance
- Customer inquiry reduction



Cost

- Cost per shipment
- Penalty reduction
- Failed delivery reduction

Sustainability

- CO₂ reduction via optimized routing
- Idle time reduction

8. Risks & Challenges

- Poor carrier data quality
- Missing or delayed tracking events
- Unpredictable disruptions (strikes, border closures)
- Model drift if not retrained regularly

. Differentiators

A. Predictive intelligence

- Learns from lane-specific patterns
- Adapts to carrier behavior
- Predicts delays before they occur

B. Real-time recalculation

- Traffic, weather, and telematics integrated
- Continuous ETA updates

C. Transparency

- Confidence scoring
- Clear root-cause insights
- Customer-facing ETA options

D. Integration

- Seamless with Control Tower
- Multi-carrier, multi-mode
- API-first architecture



10. When AI-Based ETA Predictions are the right solution

- Delivery reliability must improve
- Customer expectations are high
- Manual ETA tracking is inefficient
- Multi-carrier networks create complexity
- You want proactive exception management
- You're building a Control Tower or visibility platform



7.10. KPI Dashboards – Performance Monitoring

Definition:

KPI Dashboards provide **real-time, visual performance monitoring** across transport, warehousing, inventory, and end-to-end supply chain operations.

They consolidate data from multiple systems (TMS, WMS, ERP, telematics, carriers) into a **single, actionable view**, enabling fast decision-making, proactive issue detection, and continuous improvement.

This is a **core analytics product** that transforms raw data into **operational intelligence**.

1. Product Description

KPI Dashboards deliver **role-specific, real-time insights** for planners, managers, and executives.

Core capabilities

- Real-time KPI visualization
- Automated data aggregation from multiple systems
- Drill-down analytics (lane, carrier, SKU, site)
- Exception and threshold alerts
- Trend analysis and forecasting
- SLA and performance scorecards
- Customizable widgets and views

Typical scope

- Transport performance
- Warehouse productivity
- Inventory accuracy
- Carrier performance
- Cost and CO₂ metrics
- Customer service KPIs

. Customer Segments

Ideal for companies that need **data-driven operations, transparency, and continuous improvement**.

Best-fit customers



- Retailers & FMCG
- E-commerce & omnichannel
- Industrial & automotive
- Chemical & pharma
- 3PLs and freight forwarders
- Control Tower operators

3. Value Proposition

Operational impact

- Faster decision-making
- Early detection of performance issues
- Improved planning and execution
- Reduced operational noise

Financial impact

- Lower cost through transparency
- Reduced penalties and SLA breaches
- Better carrier and supplier negotiation
- Improved resource utilization

Strategic impact

- Enables continuous improvement culture
- Supports executive reporting
- Strengthens customer trust
- Provides foundation for automation and AI

4. Service Scope

Included

- KPI dashboard setup
- Data integration (TMS, WMS, ERP, telematics)
- Standard KPI library
- Real-time updates



- Alerts and notifications
- User-specific views

Optional

- Custom KPI development
- Predictive analytics
- CO₂ and sustainability dashboards
- Executive scorecards
- Benchmarking vs industry
- Integration with Control Tower

5. Operational Workflow

1. Data ingestion

- Transport events
- Warehouse activities
- Inventory levels
- Carrier performance
- Cost and CO₂ data

2. Data processing

- Cleansing and normalization
- KPI calculation
- SLA mapping

3. Visualization

- Dashboards by role (planner, manager, exec)
- Drill-downs and filters
- Trend and variance analysis

4. Alerts & actions

- Threshold breaches
- SLA violations
- Predictive risk indicators



5. Reporting

- Daily operational dashboards
- Weekly performance reviews
- Monthly executive summaries

6. Pricing Model

Common structures

- Monthly subscription
- Per site or per user
- Per dashboard module
- Integration fee

Cost drivers

- Number of data sources
- Customization level
- Real-time vs batch updates
- Predictive analytics requirements

7. Key KPIs

Transport

- On-time pickup/delivery
- Empty km (%)
- Cost per shipment
- Carrier performance

Warehouse

- Productivity (lines/hour, picks/hour)
- Order accuracy
- Dock utilization
- Labor efficiency

Inventory

- Stock accuracy



- Shrinkage
- Inventory turnover
- Aging stock

Sustainability

- CO₂ per shipment
- Modal shift impact
- Energy usage

8. Risks & Challenges

- Poor data quality
- Lack of system integration
- KPI overload (too many metrics)
- Misaligned KPIs across teams
- Slow adoption by operations

9. Differentiators

A. Real-time intelligence

- Live data feeds
- Predictive alerts
- SLA-driven monitoring

B. Customization

- Role-based dashboards
- Customer-specific KPIs
- Flexible widgets

C. Integration

- Multi-system, multi-carrier
- Control Tower compatibility
- API-first architecture

D. Actionability

- Drill-down to root causes



- Automated alerts
- Clear improvement insights

10. When KPI Dashboards are the right solution

- Operations need transparency
- Performance issues are detected too late
- Manual reporting is slow and inconsistent
- Customers demand SLA visibility
- You want to build a data-driven culture
- A Control Tower or visibility platform is in place



8.0. Customs – Import/Export

(Customs Clearance)

Definition:

Customs Clearance is the process of **preparing, submitting, and validating all documentation and data required for goods to legally enter or exit a country.** It ensures compliance with **customs regulations, duties, taxes, trade agreements, and security requirements**, enabling smooth cross-border flows.

This is a **high-risk, high-complexity service** where expertise directly determines speed, cost, and compliance.

1. Product Description

Customs Clearance covers all administrative, regulatory, and operational steps needed to move goods across borders without delays or penalties.

Core capabilities

- Import & export declarations
- HS code classification
- Duty & tax calculation
- Document preparation (commercial invoice, packing list, certificates)
- Customs system submissions (e.g., ICS2, AES, NCTS)
- Bonded warehouse procedures
- Compliance checks and risk screening
- Coordination with customs authorities

Typical scope

- Road, air, ocean, rail shipments
- Standard goods, ADR, pharma, food, electronics
- Temporary imports/exports
- Preferential origin and trade agreements
- Special regimes (bonded, inward/outward processing)

2. Customer Segments

Ideal for companies with **cross-border flows, regulatory exposure, or complex product portfolios.**



Best-fit customers

- Manufacturers (automotive, industrial, electronics)
- Retailers & FMCG
- E-commerce importers
- Chemical & pharma
- 3PLs and freight forwarders
- High-value or regulated goods shippers

3. Value Proposition

Operational impact

- Faster border crossings
- Reduced delays and inspections
- Accurate documentation
- Lower administrative workload

Financial impact

- Avoidance of penalties and fines
- Optimized duty payments
- Reduced demurrage/detention
- Lower compliance risk

Strategic impact

- Reliable cross-border supply chain
- Better trade agreement utilization
- Stronger regulatory compliance posture
- Enhanced customer trust

4. Service Scope

Included

- Import declarations
- Export declarations
- HS code classification



- Duty/tax calculation
- Document verification
- Customs system submissions
- Coordination with customs officers
- Release confirmation

Optional

- Preferential origin management
- Trade compliance consulting
- AEO (Authorized Economic Operator) support
- Bonded warehouse operations
- Sanctions and embargo screening
- Post-clearance audits
- CO₂ and sustainability documentation

5. Operational Workflow

1. Pre-clearance

- Document collection (invoice, packing list, certificates)
- HS code validation
- Duty/tax calculation
- Risk screening (sanctions, dual-use, ADR)

2. Declaration

- Submission to customs systems
- Data validation
- Supporting documents upload

3. Customs decision

- Green lane (automatic release)
- Yellow lane (document check)
- Red lane (physical inspection)

4. Clearance



- Duty/tax payment
- Release confirmation
- Carrier/warehouse notification

5. Post-clearance

- Archiving
- Audit support
- Discrepancy resolution

6. Pricing Model

Common structures

- Per declaration (import/export)
- Per HS code classification
- Per document set
- Monthly customs service fee
- Special regime surcharge (bonded, IPR/OPR)

Cost drivers

- Commodity complexity
- Number of HS codes
- Country of origin/destination
- Inspection frequency
- Regulatory requirements

7. Key KPIs

Operational

- Clearance time
- Inspection rate
- Documentation accuracy
- Release reliability

Financial

- Duty/tax optimization



- Penalty avoidance
- Demurrage/detention cost
- Cost per declaration

Compliance

- Error rate
- Audit success rate
- HS code accuracy

8. Risks & Challenges

- Incorrect HS classification
- Missing or inaccurate documents
- Customs inspections and delays
- Sanctions or embargo violations
- ADR/pharma/food compliance issues
- High regulatory complexity

9. Differentiators

A. Expertise

- Certified customs specialists
- Deep regulatory knowledge
- Industry-specific compliance

B. Speed

- Pre-clearance workflows
- Automated data validation
- Fast release times

C. Accuracy

- HS code governance
- Duty optimization
- Error-free documentation

D. Integration



- TMS/WMS/ERP connectivity
- Control Tower visibility
- Multi-country customs coverage

10. When Customs Clearance is the right solution

- Cross-border flows are frequent
- Delays at borders impact operations
- Regulatory compliance is critical
- Duty optimization is needed
- Multi-country import/export operations
- High-value or regulated goods



8.1. Preference Calculation – Origin Rules

Definition:

Preference Calculation is the process of determining whether goods **qualify for reduced or zero customs duties** under international **free trade agreements (FTAs)** by applying **rules of origin**.

It ensures that products meet the required **origin criteria**, such as **wholly obtained**, **substantial transformation**, or **value-added thresholds**, and that the correct **proof of origin** is issued.

This is a **high-impact trade compliance service**, often unlocking **significant duty savings** for importers and exporters.

1. Product Description

Preference Calculation evaluates whether a product qualifies for preferential duty treatment under agreements such as:

- EU FTAs (e.g., EU–Japan, EU–Canada CETA, EU–UK TCA)
- Pan-Euro-Med (PEM) Convention
- GSP schemes
- Bilateral and regional trade agreements

Core capabilities

- HS code validation
- Bill of materials (BOM) analysis
- Origin rule interpretation (CTH, CTSH, RVC, specific processing)
- Value-added and cost-based calculations
- Supplier declarations (LTSD, SDoO) management
- Issuing proofs of origin (EUR.1, invoice declaration, statement on origin)
- Compliance documentation and audit trail

2. Customer Segments

Ideal for companies with **complex supply chains, multi-country sourcing, or high duty exposure**.

Best-fit customers

- Industrial & automotive manufacturers
- Electronics & machinery



- FMCG & retail brands
- Chemical & pharma
- Textile & apparel
- 3PLs offering customs & trade services

3. Value Proposition

Operational impact

- Faster customs clearance
- Reduced administrative workload
- Automated origin determination
- Lower risk of non-compliance

Financial impact

- Significant duty savings
- Improved margin on export markets
- Reduced cost of imported components
- Avoidance of penalties and retroactive duties

Strategic impact

- Stronger trade compliance posture
- Better sourcing decisions
- Competitive pricing in FTA markets
- Enhanced supply chain resilience

4. Service Scope

Included

- HS code verification
- Origin rule interpretation
- BOM and cost structure analysis
- Preference eligibility calculation
- Supplier declaration management
- Proof of origin issuance



- Documentation archiving

Optional

- Automated preference engine
- Multi-FTA comparison
- Supplier onboarding and training
- AEO support
- Post-clearance audit assistance
- CO₂ and sustainability origin documentation

5. Operational Workflow

1. Data collection

- HS codes
- Bill of materials
- Supplier origin declarations
- Manufacturing process details
- Cost breakdown (materials, labor, overhead)

2. Rule interpretation

- Identify applicable FTA
- Determine rule type:
 - **CTH/CTSH** (change of tariff heading/subheading)
 - **RVC** (regional value content)
 - **Specific processing rules**
 - **Wholly obtained**

3. Calculation

- Apply rule to BOM
- Calculate value-added percentages
- Validate supplier declarations
- Determine eligibility

4. Documentation



- Prepare proof of origin
- Archive supporting documents
- Provide compliance file

5. Monitoring

- Annual supplier declaration renewal
- Rule updates and FTA changes
- Audit support

6. Pricing Model

Common structures

- Per product (HS code) calculation
- Per BOM analysis
- Monthly subscription for automated engine
- Supplier declaration management fee
- FTA onboarding project fee

Cost drivers

- BOM complexity
- Number of suppliers
- Number of FTAs involved
- Frequency of recalculation
- Documentation requirements

7. Key KPIs

Operational

- Calculation accuracy
- Lead time for origin determination
- Supplier declaration coverage (%)

Financial

- Duty savings achieved
- Cost per product classification



- Avoided penalties or retroactive duties

Compliance

- Audit success rate
- HS code accuracy
- Origin documentation completeness

8. Risks & Challenges

- Incorrect HS classification
- Missing or invalid supplier declarations
- Complex multi-country sourcing
- Frequent rule changes in FTAs
- High audit exposure
- Retroactive duty claims

9. Differentiators

A. Expertise

- Deep knowledge of FTA rules
- Industry-specific origin rule interpretation
- Strong customs compliance background

B. Accuracy

- BOM-level calculation
- Automated rule application
- Supplier declaration governance

C. Transparency

- Clear audit trail
- Documented methodology
- Customer-facing dashboards

D. Financial impact

- Maximized duty savings
- Optimized sourcing decisions



- Reduced compliance risk

10. When Preference Calculation is the right solution

- You import/export under FTAs
- Duty savings potential is high
- BOMs are complex or multi-country
- Supplier declarations are inconsistent
- Customs audits are frequent
- You want to optimize sourcing or pricing



8.2. Preference Calculation – Origin Rules

Definition:

Preference Calculation determines whether a product **qualifies for reduced or zero customs duties** under a Free Trade Agreement (FTA) by applying the agreement's **rules of origin**.

It evaluates **where materials come from, how the product is manufactured, and how much value is added**, ensuring compliance and unlocking duty savings.

This is a **high-value trade compliance service** with direct impact on **margin, competitiveness, and customs risk**.

1. Product Description

Preference Calculation verifies if a product meets the origine criteria of an FTA such as:

- EU–UK TCA
- EU–Japan EPA
- EU–Canada CETA
- Pan-Euro-Med (PEM)
- GSP schemes
- Bilateral FTAs

Core capabilities

- HS code validation
- Bill of Materials (BOM) origin analysis
- Application of origin rules (CTH, CTSH, RVC, specific processing)
- Value-added and cost-based calculations
- Supplier declarations (LTSD, SDoO) management
- Issuance of proofs of origin (EUR.1, invoice declaration, statement on origin)
- Full audit trail and compliance documentation

2. Customer Segments

Ideal for companies with **complex sourcing, multi-country production, or high duty exposure**.

Best-fit customers

- Automotive & industrial manufacturers



- Electronics & machinery
- FMCG & retail brands
- Chemical & pharma
- Textile & apparel
- 3PLs offering customs & trade services

3. Value Proposition

Operational value

- Faster customs clearance
- Automated origin determination
- Reduced administrative workload
- Lower error and audit risk

Financial value

- Significant duty savings
- Improved export competitiveness
- Lower cost of imported components
- Avoidance of retroactive duties and penalties

Strategic value

- Stronger compliance posture
- Better sourcing decisions
- Enhanced supply chain resilience
- Competitive pricing in FTA markets

4. Service Scope

Included

- HS code verification
- Origin rule interpretation
- BOM and cost structure analysis
- Preference eligibility calculation
- Supplier declaration validation



- Proof of origin issuance
- Documentation archiving

Optional

- Automated preference engine
- Multi-FTA comparison
- Supplier onboarding & training
- AEO support
- Post-clearance audit assistance
- Sustainability-linked origin documentation

5. Operational Workflow

1. Data collection

- HS codes
- BOM and sourcing data
- Supplier declarations
- Manufacturing process details
- Cost breakdown

2. Rule interpretation

Identify applicable rule type:

- **CTH/CTSH** – change of tariff heading/subheading
- **RVC** – regional value content
- **Specific processing** – defined manufacturing steps
- **Wholly obtained** – natural origin

3. Calculation

- Apply rule to BOM
- Calculate value-added percentages
- Validate supplier declarations
- Determine eligibility

4. Documentation



- Prepare proof of origin
- Archive supporting documents
- Provide compliance file

5. Monitoring

- Annual supplier declaration renewal
- FTA rule updates
- Audit support

6. Pricing Model

Common structures

- Per product (HS code) calculation
- Per BOM analysis
- Monthly subscription for automated engine
- Supplier declaration management fee
- FTA onboarding project fee

Cost drivers

- BOM complexity
- Number of suppliers
- Number of FTAs
- Frequency of recalculation
- Documentation requirements

7. Key KPIs

Operational

- Calculation accuracy
- Lead time for origin determination
- Supplier declaration coverage

Financial

- Duty savings achieved
- Cost per classification



- Avoided penalties

Compliance

- Audit success rate
- HS code accuracy
- Documentation completeness

8. Risks & Challenges

- Incorrect HS classification
- Missing or invalid supplier declarations
- Multi-country sourcing complexity
- Frequent FTA rule changes
- High audit exposure

9. Differentiators

A. Expertise

- Deep FTA rule knowledge
- Industry-specific interpretation
- Strong customs compliance background

B. Accuracy

- BOM-level calculation
- Automated rule application
- Supplier declaration governance

C. Transparency

- Clear audit trail
- Documented methodology
- Customer-facing dashboards

D. Financial impact

- Maximized duty savings
- Optimized sourcing decisions
- Reduced compliance risk



10. When Preference Calculation is the right solution

- You import/export under FTAs
- Duty savings potential is high
- BOMs are complex or multi-country
- Supplier declarations are inconsistent
- Customs audits are frequent
- You want to optimize sourcing or pricing



8.2. AEO Consulting – Certification Support

Definition:

AEO (Authorized Economic Operator) Consulting provides **end-to-end support** for companies seeking AEO certification, a globally recognized status granted by customs authorities to businesses with **strong compliance, security, and process reliability**. It covers **gap analysis, documentation, process design, training, audit preparation, and authority liaison** to ensure a smooth and successful certification.

AEO status is a **strategic asset**, reducing customs risk and improving cross-border performance.

1. Product Description

AEO Consulting helps companies achieve and maintain AEO status by ensuring they meet all requirements related to:

- Customs compliance
- Supply chain security
- Financial solvency
- Record-keeping and traceability
- Operational reliability

Core capabilities

- AEO readiness assessment
- Gap analysis vs AEO criteria
- Process and control design
- Documentation preparation
- Staff training and awareness
- Internal audit and mock inspections
- Support during customs authority audits
- Post-certification maintenance

AEO types covered

- **AEO-C** (Customs Simplifications)
- **AEO-S** (Security & Safety)
- **AEO-F** (Full authorization: C + S)



2. Customer Segments

Ideal for companies with **cross-border flows, customs exposure, or supply chain security requirements.**

Best-fit customers

- Manufacturers (automotive, industrial, electronics)
- Retailers & FMCG
- Chemical & pharma
- E-commerce importers
- 3PLs and freight forwarders
- High-value or regulated goods shippers

3. Value Proposition

Operational value

- Faster customs clearance
- Reduced inspections and controls
- Priority treatment at borders
- More predictable lead times

Financial value

- Lower administrative cost
- Reduced demurrage/detention
- Fewer penalties and compliance risks
- Better access to customs simplifications

Strategic value

- Stronger compliance posture
- Enhanced supply chain security
- Improved customer trust
- Competitive advantage in tenders

4. Service Scope

Included



- AEO readiness assessment
- Gap analysis and action plan
- Process mapping and redesign
- Documentation creation (SOPs, controls, policies)
- Training for customs and security requirements
- Internal audit and mock inspection
- Support during customs authority audit
- Certification submission support

Optional

- Post-certification compliance monitoring
- Annual AEO health checks
- Integration with ISO or TAPA standards
- Supplier and partner security audits
- Digital compliance dashboards

5. Operational Workflow

1. Diagnostic

- Review of customs processes
- Security and risk assessment
- Documentation audit
- Gap analysis vs AEO criteria

2. Design

- Develop missing procedures
- Implement internal controls
- Create compliance documentation
- Define roles and responsibilities

3. Training

- Customs compliance training
- Security awareness



- Record-keeping and audit readiness

4. Audit preparation

- Mock inspection
- Evidence file creation
- Corrective actions

5. Certification

- Submission to customs authority
- Support during interviews and site visits
- Response to authority questions

6. Post-certification

- Monitoring and continuous improvement
- Annual compliance review
- Support for renewals

6. Pricing Model

Common structures

- Fixed project fee (end-to-end certification)
- Phase-based pricing (diagnostic → implementation → audit support)
- Monthly compliance support subscription
- Training and workshop fees

Cost drivers

- AEO type (C, S, or F)
- Number of sites
- Process complexity
- Documentation maturity
- Security requirements

7. Key KPIs

Operational

- Time to certification



- Audit readiness score
- Number of non-conformities
- Customs inspection rate

Financial

- Cost savings from simplifications
- Reduction in demurrage/detention
- Penalty avoidance

Compliance

- Documentation completeness
- Internal audit success rate
- Security incident rate

8. Risks & Challenges

- Weak documentation or process gaps
- Poor record-keeping
- Insufficient security controls
- Lack of staff awareness
- High audit scrutiny for certain industries

9. Differentiators

A. Expertise

- Deep customs and security knowledge
- Experience with multi-site certifications
- Strong audit preparation capability

B. Structure

- Clear roadmap
- Standardized templates
- Proven methodology

C. Integration

- Alignment with customs, logistics, and security



- Compatibility with ISO/TAPA frameworks
- Digital compliance tools

D. Reliability

- High certification success rate
- Strong authority communication
- End-to-end support

10. When AEO Consulting is the right solution

- You want faster, more predictable border crossings
- Customs compliance risk is high
- You handle high-value or regulated goods
- Customers require AEO-certified partners
- You want to reduce inspections and delays
- You aim to strengthen supply chain security



8.3. Compliance –

Dangerous Goods Consulting (ADR Compliance)

Definition:

Dangerous Goods (DG) Consulting for ADR Compliance ensures that companies **transport, handle, store, and document hazardous materials** in full accordance with the **ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road)**.

It covers **classification, packaging, labelling, documentation, training, audits, and operational procedures**, ensuring safe and legally compliant DG operations.

This is a **high-risk, high-complexity compliance service** where expertise directly prevents accidents, fines, and operational shutdowns.

1. Product Description

ADR Compliance Consulting supports companies in meeting all regulatory requirements for the safe and legal transport of dangerous goods.

Core capabilities

- DG classification and UN number assignment
- Packaging, labeling, and marking compliance
- Transport document (DGD) preparation
- Vehicle, equipment, and driver compliance checks
- DG storage and handling procedures
- Emergency response planning
- Annual ADR reports and audits
- Training for staff involved in DG operations

DG categories covered

- Flammable liquids
- Gases
- Explosives
- Toxic and infectious substances
- Corrosives
- Lithium batteries



- Environmental hazards

2. Customer Segments

Ideal for companies handling **regulated materials**, even in small quantities.

Best-fit customers

- Chemical & pharma
- Automotive & industrial
- Electronics (lithium batteries)
- FMCG (aerosols, cleaning agents)
- E-commerce handling DG parcels
- 3PLs and transport companies
- Warehousing and fulfillment centers

3. Value Proposition

Operational value

- Safe handling and transport of hazardous goods
- Reduced operational incidents
- Standardized DG processes
- Faster DG shipment preparation

Financial value

- Avoidance of fines and penalties
- Reduced insurance exposure
- Lower risk of damaged goods
- Prevention of costly accidents

Strategic value

- Strong compliance posture
- Improved customer trust
- Eligibility for DG transport contracts
- Reduced business continuity risk

4. Service Scope



Included

- DG classification and documentation
- ADR packaging and labeling guidance
- Transport document preparation
- DG process mapping and SOP creation
- Compliance audits and gap analysis
- Staff training (awareness, function-specific)
- Annual ADR report preparation

Optional

- Dangerous Goods Safety Advisor (DGSA) outsourcing
- Emergency response plan development
- Multi-modal DG compliance (IATA, IMDG, RID)
- Warehouse DG zoning and storage design
- Supplier and carrier DG compliance audits
- Digital DG documentation tools

5. Operational Workflow

1. Assessment

- Review of DG products
- Classification and UN number assignment
- Packaging and labeling evaluation
- Documentation audit

2. Compliance design

- SOP creation (packing, labeling, loading, segregation)
- DG storage and handling procedures
- Vehicle and equipment compliance checks

3. Training

- ADR awareness
- Function-specific DG training



- Emergency response training

4. Implementation

- Labeling and packaging setup
- Documentation templates
- DG process integration into TMS/WMS

5. Monitoring

- Regular audits
- Incident analysis
- Annual ADR report
- Regulatory updates

6. Pricing Model

Common structures

- Fixed project fee (audit + implementation)
- Monthly DGSA outsourcing fee
- Per DG shipment documentation fee
- Training and certification packages

Cost drivers

- Number of DG products
- Complexity of classifications
- Volume of DG shipments
- Multi-modal requirements
- Number of sites involved

7. Key KPIs

Operational

- DG incident rate
- Documentation accuracy
- Compliance audit score
- Staff training coverage



Financial

- Penalty avoidance
- Insurance cost reduction
- Cost per DG shipment

Compliance

- Correct classification rate
- Labeling/packaging compliance
- Annual ADR report completeness

8. Risks & Challenges

- Incorrect DG classification
- Improper packaging or labeling
- Missing or incorrect documentation
- Inadequate staff training
- Vehicle/equipment non-compliance
- High regulatory complexity and frequent updates

9. Differentiators

A. Expertise

- Certified DGSA consultants
- Multi-modal DG knowledge
- Industry-specific experience

B. Accuracy

- Precise classification
- Error-free documentation
- Strong audit preparation

C. Safety

- Robust emergency procedures
- Incident prevention focus
- End-to-end risk mitigation



D. Integration

- TMS/WMS DG workflows
- Carrier and warehouse compliance alignment
- Digital DG documentation tools

10. When ADR Compliance Consulting is the right solution

- You transport or store hazardous materials
- DG incidents or near-misses have occurred
- Documentation errors cause delays
- Staff lack DG training
- You want to reduce compliance risk
- Customers require DG-certified partners



8.4. ESG Reporting – Sustainability Reporting

Definition:

ESG (Environmental, Social, Governance) Reporting is the structured measurement, consolidation, and disclosure of a company's **sustainability performance**, covering environmental impact, social responsibility, and governance standards.

It ensures compliance with regulatory frameworks (e.g., **CSRD, ESRS, EU Taxonomy, GRI**) and provides transparent, data-driven insights for investors, customers, and stakeholders.

This is a **high-value compliance and strategy service**, essential for companies operating in Europe and global supply chains.

1. Product Description

Sustainability Reporting consolidates data from operations, suppliers, logistics, HR, and finance into a **coherent, auditable ESG report**.

Core capabilities

- ESG data collection and consolidation
- CO₂ emissions calculation (Scopes 1, 2, 3)
- Compliance with CSRD/ESRS, GRI, SASB, TCFD
- Materiality assessment
- ESG KPI dashboards
- Supplier sustainability assessments
- Audit-ready documentation
- Annual sustainability report creation

Typical scope

- Transport & logistics emissions
- Energy consumption
- Waste and recycling
- Social & labor metrics
- Governance and risk management
- Supply chain sustainability

2. Customer Segments



Ideal for companies facing **regulatory pressure, investor expectations, or customer sustainability requirements.**

Best-fit customers

- Manufacturers (automotive, industrial, electronics)
- Retailers & FMCG
- Logistics providers & 3PLs
- Chemical & pharma
- E-commerce brands
- Companies subject to CSRD or EU Taxonomy

3. Value Proposition

Operational value

- Centralized ESG data management
- Standardized reporting processes
- Improved supply chain transparency
- Better risk management

Financial value

- Access to green financing
- Reduced compliance penalties
- Lower energy and waste costs
- Improved investor confidence

Strategic value

- Strong sustainability positioning
- Competitive advantage in tenders
- Enhanced brand reputation
- Alignment with long-term ESG goals

4. Service Scope

Included

- ESG data collection framework



- CO₂ emissions calculation (Scopes 1–3)
- Materiality assessment
- ESG KPI dashboard setup
- Compliance with CSRD/ESRS
- Sustainability report drafting
- Audit-ready documentation

Optional

- Supplier sustainability scoring
- Life Cycle Assessment (LCA)
- EU Taxonomy alignment
- ESG strategy development
- Carbon reduction roadmap
- Employee training and awareness
- Digital ESG reporting tools

5. Operational Workflow

1. Diagnostic

- ESG maturity assessment
- Gap analysis vs regulatory requirements
- Stakeholder mapping

2. Data collection

- Energy, fuel, transport, waste
- HR and social metrics
- Governance and risk data
- Supplier sustainability inputs

3. Calculation & analysis

- CO₂ emissions (GHG Protocol)
- ESG KPI calculation
- Materiality assessment



- EU Taxonomy eligibility/alignment

4. Reporting

- CSRD/ESRS-compliant report
- GRI/SASB alignment
- Executive summary and visuals

5. Audit preparation

- Evidence file creation
- Internal controls
- Auditor Q&A support

6. Continuous improvement

- Annual updates
- ESG roadmap
- KPI monitoring

6. Pricing Model

Common structures

- Fixed project fee (annual report)
- Monthly ESG reporting subscription
- Per Scope 3 category analysis
- Supplier sustainability assessment fee

Cost drivers

- Number of sites
- Scope 3 complexity
- Regulatory requirements
- Data availability and quality
- Level of customization

7. Key KPIs

Environmental

- CO₂ emissions (Scopes 1–3)



- Energy intensity
- Waste recycling rate
- Water usage

Social

- Employee turnover
- Health & safety incidents
- Diversity metrics
- Training hours per employee

Governance

- Compliance incidents
- Audit findings
- Supplier ESG performance
- Risk management maturity

8. Risks & Challenges

- Poor data quality
- Complex Scope 3 calculations
- Supplier non-cooperation
- Regulatory changes
- Greenwashing risk
- High audit scrutiny

9. Differentiators

A. Compliance expertise

- Deep knowledge of CSRD/ESRS
- Audit-ready documentation
- Strong regulatory interpretation

B. Data accuracy

- Robust CO₂ calculation models
- Standardized ESG data governance



- Supplier data validation

C. Integration

- TMS/WMS/ERP data connectivity
- Multi-site, multi-country coverage
- ESG dashboards for executives

D. Strategy

- Clear sustainability roadmap
- Cost-saving opportunities
- Competitive differentiation

10. When ESG Reporting is the right solution

- You fall under CSRD or expect to soon
- Customers demand sustainability data
- Investors require ESG transparency
- You want to reduce CO₂ and energy costs
- You need a structured, audit-ready ESG report
- Your aim is to strengthen brand and compliance



8.5. CO₂ Calculation – Emissions Data

Definition:

CO₂ Calculation is the structured measurement of **greenhouse gas emissions** generated across transport, warehousing, and supply chain operations. It uses standardized methodologies (e.g., **GHG Protocol, EN 16258, ISO 14083**) to calculate emissions for **Scopes 1, 2, and 3**, enabling accurate reporting, customer transparency, and carbon-reduction strategies.

This is a **core sustainability and compliance service**, increasingly required by customers, regulators, and investors.

1. Product Description

CO₂ Calculation provides **accurate, auditable emissions data** across all logistics activities.

Core capabilities

- Emissions calculation for transport (road, air, ocean, rail)
- Scope 1, 2, and 3 emissions accounting
- Fuel-based, distance-based, and activity-based methodologies
- Emission factor management (DEFRA, GLEC, EcoTransIT)
- CO₂ dashboards and KPI reporting
- Customer-specific emissions allocation
- Lane-level and shipment-level CO₂ visibility

Typical scope

- FTL, LTL, parcel, intermodal
- Warehousing energy consumption
- Packaging emissions
- Supplier and carrier emissions
- End-to-end supply chain footprint

2. Customer Segments

Ideal for companies facing **sustainability reporting requirements** or customer pressure to reduce emissions.

Best-fit customers



- Retailers & FMCG
- E-commerce & parcel networks
- Industrial & automotive manufacturers
- Chemical & pharma
- Logistics providers & 3PLs
- Companies subject to CSRD or GHG reporting

3. Value Proposition

Operational value

- Centralized emissions data
- Standardized, repeatable calculation process
- Transparent CO₂ per shipment, lane, or customer
- Better decision-making for routing and mode choice

Financial value

- Reduced energy and fuel costs
- Access to green financing
- Avoidance of compliance penalties
- Improved tender competitiveness

Strategic value

- Strong sustainability positioning
- Supports ESG and CSRD reporting
- Enables carbon-reduction roadmaps
- Enhances customer trust

4. Service Scope

Included

- CO₂ calculation framework setup
- Emission factor selection and management
- Scope 1–3 emissions calculation
- Transport and warehouse emissions modeling



- CO₂ dashboards and KPI reporting
- Customer-specific emissions allocation

Optional

- Life Cycle Assessment (LCA)
- Mode-shift CO₂ comparison
- Carbon reduction roadmap
- Supplier emissions data collection
- Integration with TMS/WMS/ERP
- Sustainability reporting (CSRD/ESRS)

5. Operational Workflow

1. Data collection

- Fuel consumption
- Distance traveled
- Shipment weight/volume
- Warehouse energy usage
- Carrier emissions data
- Emission factors

2. Calculation

- Apply GHG Protocol / ISO 14083
- Scope 1: direct fuel combustion
- Scope 2: electricity consumption
- Scope 3: upstream/downstream logistics
- Lane-level and shipment-level CO₂

3. Validation

- Data quality checks
- Emission factor verification
- Audit-ready documentation

4. Reporting



- CO₂ dashboards
- Customer-specific reports
- ESG/CSRD integration

5. Optimization

- Identify high-emission lanes
- Mode shift opportunities
- Route optimization impact
- Packaging and load-factor improvements

6. Pricing Model

Common structures

- Per shipment CO₂ calculation
- Monthly emissions reporting subscription
- Per site or per lane analysis
- Scope 3 deep-dive project fee

Cost drivers

- Data complexity
- Number of transport modes
- Scope 3 depth
- Integration requirements
- Reporting frequency

7. Key KPIs

Environmental

- CO₂ per shipment
- CO₂ per ton-km
- CO₂ per customer
- Scope 1–3 emissions breakdown

Operational

- Load factor improvement



- Modal shift impact
- Energy intensity (warehouse)

Financial

- Cost per ton of CO₂
- Fuel and energy savings
- Green financing eligibility

8. Risks & Challenges

- Poor data quality
- Missing carrier emissions data
- Incorrect emission factors
- Complex Scope 3 calculations
- Regulatory changes (CSRD, EU Taxonomy)

9. Differentiators

A. Accuracy

- ISO 14083-aligned methodology
- Verified emission factors
- Shipment-level granularity

B. Transparency

- Clear audit trail
- Customer-facing CO₂ dashboards
- Full Scope 3 visibility

C. Integration

- TMS/WMS/ERP connectivity
- Multi-carrier, multi-mode
- Automated data ingestion

D. Strategy

- Carbon reduction roadmap
- Mode-shift and routing optimization



- Packaging and load-factor improvements

10. When CO₂ Calculation is the right solution

- Customers request CO₂ per shipment
- You must comply with CSRD/ESRS
- You want to reduce emissions and fuel costs.
- You need transparent Scope 3 data
- You want to win sustainability-driven tenders
- You aim to build a credible ESG strategy



EU 8.6. CSRD Documentation – EU Compliance

Definition:

CSRD (Corporate Sustainability Reporting Directive) Documentation is the structured preparation of all **mandatory sustainability disclosures** required under the EU's new reporting framework.

It ensures full compliance with **CSRD, ESRS (European Sustainability Reporting Standards)**, and **EU Taxonomy**, covering environmental, social, and governance performance with **auditable, standardized, and data-driven reporting**.

This is a **high-stakes compliance service**, essential for companies operating in or trading with the EU.

1. Product Description

CSRD Documentation consolidates all sustainability-related data into a **fully compliant, audit-ready report** aligned with ESRS standards.

Core capabilities

- CSRD gap analysis
- ESRS-aligned documentation
- Double materiality assessment
- Scope 1–3 emissions documentation
- EU Taxonomy eligibility & alignment
- ESG data governance setup
- Audit-ready evidence files
- Annual sustainability report creation

Regulatory frameworks covered

- CSRD
- ESRS (E1–E5, S1–S4, G1)
- EU Taxonomy
- GHG Protocol
- TCFD alignment

2. Customer Segments

Ideal for companies that **fall under CSRD** or expect to be included soon.



Best-fit customers

- Large EU companies (meeting 2 of 3 thresholds)
- Non-EU companies with significant EU turnover
- Listed SMEs (phased-in)
- Logistics providers & 3PLs
- Manufacturers, retailers, FMCG
- Chemical & pharma

3. Value Proposition

Operational value

- Structured ESG data governance
- Standardized reporting processes
- Reduced internal workload
- Faster audit preparation

Financial value

- Avoidance of non-compliance penalties
- Access to sustainable financing
- Lower risk premiums
- Improved investor confidence

Strategic value

- Strong sustainability positioning
- Competitive advantage in tenders
- Enhanced customer trust
- Alignment with long-term ESG goals

4. Service Scope

Included

- CSRD readiness assessment
- Double materiality analysis
- ESRS-aligned documentation



- CO₂ and environmental data consolidation
- Social & governance metrics documentation
- EU Taxonomy alignment
- Audit-ready evidence file
- Annual sustainability report

Optional

- ESG strategy development
- Scope 3 deep-dive analysis
- Supplier sustainability data collection
- Digital ESG reporting dashboards
- Training for internal teams
- Continuous compliance monitoring

5. Operational Workflow

1. Diagnostic

- CSRD applicability check
- Gap analysis vs ESRS requirements
- Stakeholder mapping

2. Data collection

- Environmental (CO₂, energy, waste, water)
- Social (HR, safety, diversity)
- Governance (risk, ethics, compliance)
- Supply chain sustainability inputs

3. Double materiality

- Impact materiality
- Financial materiality
- Prioritization of ESRS disclosures

4. Documentation

- ESRS-aligned narrative



- KPI tables and metrics
- EU Taxonomy eligibility/alignment
- Audit-ready evidence

5. Reporting

- CSRD-compliant sustainability report
- Executive summary
- Digital reporting formats (XHTML/ESEF)

6. Audit support

- Internal controls
- Evidence file
- Auditor Q&A

6. Pricing Model

Common structures

- Fixed project fee (full CSRD documentation)
- Phase-based pricing (diagnostic → reporting → audit support)
- Monthly ESG reporting subscription
- Scope 3 analysis fee

Cost drivers

- Company size and complexity
- Number of sites
- Scope 3 depth
- Data availability
- Level of customization

7. Key KPIs

Compliance

- CSRD readiness score
- ESRS disclosure completeness
- Audit findings



- Evidence file completeness

Environmental

- CO₂ emissions (Scopes 1–3)
- Energy intensity
- Waste & recycling metrics

Social

- Safety incidents
- Diversity metrics
- Training hours

Governance

- Compliance incidents
- Risk management maturity

8. Risks & Challenges

- Poor data quality
- Complex Scope 3 calculations
- Supplier non-cooperation
- Regulatory updates
- High audit scrutiny
- Greenwashing risk

9. Differentiators

A. Regulatory expertise

- Deep CSRD/ESRS knowledge
- Audit-ready documentation
- Strong regulatory interpretation

B. Data governance

- Standardized ESG data model
- Multi-site, multi-country integration
- Supplier data validation



C. Transparency

- Clear methodology
- Evidence-based reporting
- Executive-level dashboards

D. Strategy

- Carbon reduction roadmap
- ESG maturity improvement
- Tender competitiveness

10. When CSRD Documentation is the right solution

- You fall under CSRD or will soon
- Customers demand sustainability transparency
- Investors require ESG disclosures
- You need audit-ready ESG data
- You want to reduce CO₂ and energy costs
- Your aim is to strengthen brand and compliance



9.0. Industry Solutions –

Pharma Logistics (GDP Compliant)

Definition:

GDP-compliant Pharma Logistics ensures that pharmaceutical products are **stored, handled, and transported** according to the **EU Good Distribution Practice (GDP)** guidelines.

It guarantees **product integrity, temperature control, traceability, and regulatory compliance** across the entire logistics chain — from manufacturer to patient.

This is a **mission-critical logistics service**, where compliance failures can lead to **product loss, regulatory sanctions, and patient safety risks**.

1. Product Description

GDP-compliant logistics covers all operational and regulatory requirements for the safe distribution of medicinal products.

Core capabilities

- Temperature-controlled transport (2–8°C, 15–25°C, deep-freeze)
- Real-time temperature monitoring
- Qualified packaging solutions
- GDP-compliant warehousing
- Batch/lot traceability
- Chain-of-custody documentation
- Risk-based route planning
- Deviation and CAPA management

Regulatory frameworks covered

- EU GDP Guidelines (2013/C 343/01)
- EMA and national authority requirements
- WHO GDP
- ISO 9001 / ISO 13485 alignment

2. Customer Segments

Ideal for companies where **product integrity and regulatory compliance** are essential.

Best-fit customers



- Pharmaceutical manufacturers
- Biotech companies
- Medical device suppliers
- Wholesalers and distributors
- Clinical trial logistics providers
- Hospitals and healthcare networks

3. Value Proposition

Operational value

- End-to-end temperature integrity
- Reduced product loss and excursions
- Standardized, validated processes
- Faster release and fewer deviations

Financial value

- Lower risk of product write-offs
- Reduced insurance exposure
- Avoidance of regulatory penalties
- Optimized cold-chain cost structure

Strategic value

- Strong compliance posture
- Enhanced trust with regulators and customers
- Competitive advantage in pharma tenders
- Support for global market access

4. Service Scope

Included

- GDP-compliant transport (ambient, cold chain, deep-freeze)
- Temperature-controlled warehousing
- Qualified packaging and passive/active solutions
- Real-time monitoring and alerts



- Batch/lot traceability
- SOP-driven handling processes
- Deviation management and CAPA
- Audit-ready documentation

Optional

- Lane risk assessments
- Qualification/validation (IQ/OQ/PQ)
- Clinical trial logistics
- Serialization and anti-counterfeit solutions
- GDP training for staff
- Quality management system (QMS) support

5. Operational Workflow

1. Pre-shipment

- Risk assessment (route, season, carrier)
- Packaging qualification
- Temperature setpoint definition
- Documentation preparation

2. Execution

- Temperature-controlled loading
- Real-time monitoring (IoT loggers, telematics)
- Chain-of-custody tracking
- Exception alerts

3. Delivery

- Temperature data download
- Visual inspection
- Batch/lot reconciliation

4. Post-shipment

- Deviation analysis



- CAPA implementation
- Documentation archiving
- Quality review

6. Pricing Model

Common structures

- Per shipment (temperature-controlled)
- Per pallet or per m³ for cold storage
- Packaging qualification fee
- Monitoring and data-logger fee
- Quality management service fee

Cost drivers

- Temperature range (ambient vs cold vs deep-freeze)
- Packaging type (active vs passive)
- Monitoring requirements
- Route risk level
- Regulatory documentation needs

7. Key KPIs

Quality & Compliance

- Temperature excursion rate
- Deviation rate
- CAPA closure time
- Audit findings

Operational

- On-time delivery
- Chain-of-custody accuracy
- Packaging qualification success rate

Financial

- Cost per temperature-controlled shipment



- Product loss avoidance
- Insurance claim reduction

8. Risks & Challenges

- Temperature excursions
- Incorrect packaging selection
- Poor route risk assessment
- Inadequate documentation
- Carrier non-compliance
- Regulatory audits and inspections

9. Differentiators

A. Compliance excellence

- Fully GDP-aligned processes
- Qualified equipment and packaging
- Strong QMS and documentation

B. Visibility

- Real-time temperature and location tracking
- Automated excursion alerts
- Full chain-of-custody transparency

C. Reliability

- Validated lanes
- Trained pharma-specialist staff
- Proven deviation management

D. Integration

- ERP/WMS/TMS connectivity
- Serialization and batch tracking
- Audit-ready reporting

10. When GDP-Compliant Pharma Logistics is the right solution

- You transport temperature-sensitive pharmaceuticals



- Regulatory compliance is mandatory
- Product integrity must be guaranteed
- You need full traceability and chain-of-custody
- Customers require GDP certification
- You want to reduce risk and improve quality



9.1. Industry Solutions –

Art Logistics (High-Value Handling)

Definition:

Art Logistics with High-Value Handling provides **specialized transport, storage, and handling** for fine art, collectibles, cultural assets, and luxury items.

It ensures **museum-grade protection, strict chain-of-custody, environmental control**, and **high-security operations**, tailored to the unique fragility and value of each piece.

This is a **premium logistics service**, where the stakes are extremely high and the margin for error is zero.

1. Product Description

High-Value Art Logistics covers the full lifecycle of moving and protecting artworks and luxury objects.

Core capabilities

- White-glove handling
- Custom crating and packing
- Climate-controlled transport (temperature & humidity)
- Shock, tilt, and vibration monitoring
- High-security vehicles and escorts
- Condition reporting and photographic documentation
- Installation and de-installation services
- Secure, climate-controlled storage

Typical scope

- Fine art (paintings, sculptures, installations)
- Museum collections
- Private collections and estates
- Auction house shipments
- Luxury goods and collectibles
- Exhibitions and touring shows

2. Customer Segments



Ideal for clients requires **absolute security, discretion, and environmental control.**

Best-fit customers

- Museums and galleries
- Auction houses
- Private collectors
- Luxury brands
- Cultural institutions
- Art fairs and exhibition organizers
- Insurance companies (approved logistics partners)

3. Value Proposition

Operational value

- Museum-grade handling and packing
- Zero-damage transport standards
- Controlled environment throughout the journey
- Full chain-of-custody transparency

Financial value

- Reduced insurance premiums
- Lower risk of damage or loss
- High-value asset protection
- Compliance with lender and insurer requirements

Strategic value

- Enhanced reputation for reliability
- Trusted partner for high-profile exhibitions
- Ability to support global art movements
- Strong differentiation in premium logistics

4. Service Scope

Included

- Artwork assessment and handling plan



- Custom crating and protective packaging
- Climate-controlled transport
- High-security vehicles and escort options
- Condition reporting (pre- and post-transport)
- Installation and de-installation
- Secure storage (temperature, humidity, fire protection)
- Chain-of-custody documentation

Optional

- Courier escort (museum courier)
- Insurance arrangement (all-risk coverage)
- Shock/tilt/vibration sensors
- Exhibition logistics planning
- White-glove delivery for private clients
- Conservation support and restoration coordination

5. Operational Workflow

1. Pre-transport

- Artwork assessment
- Handling and packing plan
- Crate design and fabrication
- Risk assessment (route, climate, security)

2. Execution

- White-glove packing
- Climate-controlled loading
- Real-time tracking and monitoring
- Security protocols (escort, sealed vehicles)

3. Delivery

- Controlled unloading
- Installation by trained art handlers



- Condition check and documentation

4. Post-transport

- Storage or return logistics
- Incident reporting (if applicable)
- Documentation archiving

6. Pricing Model

Common structures

- Per artwork or per crate
- Per km for climate-controlled transport
- Hourly rate for art handlers
- Storage fee (per m² or per crate)
- Insurance and security surcharges

Cost drivers

- Artwork size, fragility, and value
- Custom crating requirements
- Climate control level
- Security level (escort, GPS, seals)
- Installation complexity
- International vs domestic transport

7. Key KPIs

Quality & Safety

- Damage-free delivery rate
- Condition report deviations
- Environmental compliance (temperature/humidity)

Security

- Chain-of-custody accuracy
- Security incident rate
- Escort compliance



Operational

- On-time delivery
- Crate fabrication lead time
- Installation success rate

8. Risks & Challenges

- Physical damage (shock, vibration, humidity)
- Theft or tampering
- Incorrect handling or packing
- Customs delays for international shipments
- Insurance and liability complexity
- High-profile reputational risk

9. Differentiators

A. Expertise

- Trained art handlers
- Museum-grade standards
- Conservation-aware handling

B. Protection

- Custom crates
- Climate-controlled vehicles
- Shock/tilt monitoring

C. Security

- High-security transport
- Chain-of-custody protocols
- Discreet operations

D. Precision

- Detailed condition reporting
- Installation by specialists
- Zero-excursion environmental control



10. When High-Value Art Logistics is the right solution

- You transport fragile or irreplaceable artworks
- Insurance or lenders require strict compliance
- You need climate-controlled, secure transport
- You manage exhibitions or touring shows
- You want zero-risk handling for high-value assets



9.2. Industry Solutions – High-Tech Logistics (Sensitive Equipment)

Definition:

High-Tech Logistics for Sensitive Equipment provides **specialized handling, transport, installation, and lifecycle management** for high-value, fragile, and technologically complex devices.

It ensures **shock-free movement, climate control, precision handling, and full traceability**, protecting equipment that is both operationally critical and extremely costly.

This is a **premium, risk-sensitive logistics service**, where precision and reliability are non-negotiable.

1. Product Description

High-Tech Logistics covers the end-to-end movement and protection of sensitive equipment requiring **special handling, technical expertise, and controlled environments**.

Core capabilities

- Shock-free, vibration-controlled transport
- Climate-controlled vehicles and storage
- White-glove handling and technical crews
- Custom crating and protective packaging
- On-site installation and de-installation
- Real-time tracking and condition monitoring
- Secure chain-of-custody
- Reverse logistics and returns management

Typical equipment handled

- Medical devices (MRI coils, imaging systems, lab equipment)
- Semiconductor machinery
- Robotics and automation systems
- Telecom and data-center hardware
- Precision instruments and calibration devices
- High-value electronics and prototypes



2. Customer Segments

Ideal for industries where **equipment is fragile, expensive, and mission-critical.**

Best-fit customers

- High-tech manufacturers
- Medical device companies
- Semiconductor producers
- Telecom and IT infrastructure providers
- Robotics and automation firms
- R&D labs and universities
- Data centers and cloud providers

3. Value Proposition

Operational value

- Zero-damage handling standards
- Controlled environment throughout the journey
- Technical crews for installation and setup
- Reduced downtime and faster commissioning

Financial value

- Lower risk of equipment damage
- Reduced insurance exposure
- Avoidance of costly operational interruptions
- Optimized lifecycle and return logistics

Strategic value

- Trusted partner for high-tech deployments
- Strong differentiation in premium logistics
- Enhanced customer satisfaction and reliability
- Support for global rollouts and installations

4. Service Scope

Included



- Technical site survey
- Custom crating and packaging
- Shock-free, climate-controlled transport
- White-glove handling
- Real-time tracking and condition monitoring
- On-site installation and positioning
- Secure chain-of-custody documentation
- Reverse logistics and refurbishment flows

Optional

- Technical de-installation and dismantling
- Calibration and testing coordination
- Warehousing in climate-controlled facilities
- Insurance arrangement (high-value coverage)
- Project logistics for multi-site rollouts
- Disposal and recycling of old equipment

5. Operational Workflow

1. Pre-transport

- Technical site survey
- Risk assessment (shock, vibration, climate, access)
- Crate design and protective packaging
- Route planning and security assessment

2. Execution

- White-glove loading
- Shock-absorbing equipment and air-ride vehicles
- Climate-controlled transport
- Real-time GPS + condition monitoring

3. Delivery

- Controlled unloading



- Positioning and installation by technical crew
- Functional checks (if required)
- Documentation and sign-off

4. Post-transport

- Return logistics for old equipment
- Refurbishment or recycling
- Data wipe (for IT hardware)
- Documentation archiving

6. Pricing Model

Common structures

- Per equipment unit
- Per km for specialized transport
- Hourly rate for technical crews
- Crating and packaging fee
- Climate-controlled storage fee

Cost drivers

- Equipment size, fragility, and value
- Technical installation complexity
- Climate and shock-control requirements
- Security level
- International vs domestic transport

7. Key KPIs

Quality & Safety

- Damage-free delivery rate
- Shock/vibration excursion rate
- Installation success rate

Operational

- On-time delivery



- Technical crew performance
- Crate fabrication lead time

Security

- Chain-of-custody accuracy
- Security incident rate

8. Risks & Challenges

- Shock, vibration, or tilt damage
- Climate sensitivity (humidity, temperature)
- Complex installation requirements
- Access constraints at delivery sites
- High insurance and liability exposure
- Data security for IT equipment

9. Differentiators

A. Technical expertise

- Trained technicians for installation
- Engineering-level understanding of equipment
- Precision handling protocols

B. Protection

- Custom crating
- Shock-absorbing vehicles
- Climate-controlled environments

C. Security

- Chain-of-custody
- High-value transport protocols
- Discreet operations

D. Reliability

- Zero-damage standards
- Real-time monitoring



- Proven project logistics capability

10. When High-Tech Logistics is the right solution

- Equipment is fragile, high-value, or mission-critical
- Installation requires technical expertise
- Climate or shock control is mandatory
- You manage multi-site deployments
- Downtime or damage would be extremely costly



9.3. Industry Solutions –

Automotive Sequencing (Just-In-Sequence)

Definition:

Just-In-Sequence (JIS) Logistics ensures that automotive components are **delivered to the OEM assembly line in the exact order, exact quantity, and exact timing** required for production.

It is an evolution of Just-In-Time (JIT), adding **sequence accuracy** as a critical dimension to avoid line stoppages and ensure flawless assembly.

This is a **zero-tolerance, high-precision logistics service**, where even a single error can halt production.

1. Product Description

Automotive Sequencing (JIS) synchronizes inbound logistics with the OEM's takt time and build sequence.

Core capabilities

- Real-time sequencing aligned with OEM production orders
- Component picking, kitting, and sequencing
- Line-side delivery in exact build order
- Takt-time synchronized transport
- Error-proofing (Poka-Yoke) and scanning
- Real-time EDI integration with OEM systems
- Buffer management and contingency planning

Typical components handled

- Bumpers, dashboards, seats
- Cockpit modules
- Door panels
- Exhaust systems
- Wiring harnesses
- Interior trim and electronics

2. Customer Segments

Ideal for automotive supply chains where **precision and timing** are mission-critical.



Best-fit customers

- Tier-1 suppliers
- Tier-2 suppliers supporting JIS modules
- OEMs requiring synchronized inbound flows
- Automotive assembly plants
- 3PLs operating sequencing centers

3. Value Proposition

Operational value

- Zero line stoppages
- Perfect sequence accuracy
- Reduced inventory at OEM
- Faster assembly and fewer errors

Financial value

- Avoidance of line-stop penalties
- Lower inventory and buffer costs
- Optimized labor and warehouse footprint
- Reduced rework and scrap

Strategic value

- Strong OEM partnership positioning
- Higher supplier performance ratings
- Competitive advantage in automotive tenders
- Foundation for modular assembly and automation

4. Service Scope

Included

- EDI integration with OEM production systems
- Sequencing center operations
- Kitting and module assembly
- Takt-time synchronized transport



- Line-side delivery
- Error-proofing and scanning
- Real-time performance dashboards

Optional

- On-site sequencing at OEM plant
- Quality inspection and rework
- Returnable packaging management
- Contingency fleet and rapid-response units
- Digital twin for sequence simulation
- Supplier performance monitoring

5. Operational Workflow

1. Order intake

- Real-time EDI from OEM (build sequence, VIN, variant)
- Automatic sequencing plan generation

2. Sequencing operations

- Picking and kitting
- Variant configuration
- Poka-Yoke scanning
- Sequence validation

3. Transport

- Takt-time synchronized dispatch
- GPS and ETA monitoring
- Buffer management

4. Line-side delivery

- Delivery in exact build order
- Scan-in confirmation
- Empty packaging return

5. Performance control



- Sequence accuracy tracking
- Delay root-cause analysis
- Continuous improvement

6. Pricing Model

Common structures

- Per sequenced unit
- Per module or kit
- Fixed monthly sequencing center fee
- Takt-time transport fee
- Penalty-avoidance SLA model

Cost drivers

- Component complexity
- Number of variants
- Sequencing takt time
- Distance to OEM plant
- Required redundancy and buffers

7. Key KPIs

Operational

- Sequence accuracy (%)
- On-time delivery to takt (%)
- Picking accuracy
- Buffer coverage (minutes)

Financial

- Cost per sequenced unit
- Penalty avoidance
- Inventory reduction

Quality

- Variant mismatch rate



- Scan compliance
- Rework rate

8. Risks & Challenges

- EDI failures or incorrect production data
- Traffic delays impacting takt time
- Variant complexity and picking errors
- Insufficient buffer stock
- Line-stop penalties (high financial impact)

9. Differentiators

A. Precision

- Zero-error sequencing
- Poka-Yoke and full scan traceability
- Real-time synchronization with OEM

B. Speed

- Takt-time aligned operations
- Rapid-response contingency transport
- High-frequency micro-deliveries

C. Integration

- Deep EDI connectivity
- Digital dashboards and alerts
- OEM-aligned quality processes

D. Reliability

- Redundant systems and buffers
- Proven automotive sequencing expertise
- 24/7 operations

10. When Automotive Sequencing (JIS) is the right solution

- OEM requires exact build-order delivery
- Variants and configurations are complex



- Line-stop penalties are high
- Inventory must be minimized
- Production takt time is tight
- Supplier wants to improve OEM performance score



9.4. Industry Solutions – Battery Logistics (Lithium-Ion ADR Compliant)

Definition:

Battery Logistics for Lithium-Ion ADR covers the **safe, compliant, and controlled transport, storage, and handling** of lithium-ion batteries new, used, prototype, or damaged.

It ensures full compliance with **ADR regulations**, UN testing requirements, and OEM safety standards, protecting people, assets, and the environment.

This is a **high-risk, high-complexity logistics service**, where even minor errors can lead to fires, explosions, or regulatory shutdowns.

1. Product Description

Lithium-Ion ADR Logistics provides end-to-end solutions for transporting and managing batteries across the entire lifecycle.

Core capabilities

- ADR-compliant transport of lithium-ion batteries (UN 3480, UN 3481, UN 3090, UN 3091)
- Handling of new, used, prototype, and damaged/defective batteries
- UN-approved packaging (P908, P911, LP904, LP905, LP906)
- Fire-resistant and thermal-runaway-mitigation packaging
- Temperature-controlled and ventilated storage
- Real-time monitoring (temperature, shock, tilt)
- Emergency response and incident management
- Documentation and labeling compliance

Battery types covered

- EV traction batteries
- E-bike and scooter batteries
- Consumer electronics batteries
- Industrial and energy-storage batteries
- Prototypes and R&D cells

2. Customer Segments



Ideal for industries where **battery safety, compliance, and reverse logistics** are critical.

Best-fit customers

- EV manufacturers and suppliers
- Battery producers and recyclers
- Energy storage system providers
- Consumer electronics companies
- Automotive OEMs and Tier-1 suppliers
- 3PLs handling ADR flows
- After-sales and service networks

3. Value Proposition

Operational value

- Safe handling of high-risk batteries
- Standardized ADR-compliant processes
- Reduced incident and fire risk
- Full traceability and monitoring

Financial value

- Avoidance of ADR penalties
- Lower insurance exposure
- Reduced product loss and damage
- Optimized reverse-logistics cost

Strategic value

- Strong compliance posture
- Trusted partner for EV and battery OEMs
- Support for circular-economy and recycling flows
- Competitive advantage in high-tech logistics

4. Service Scope

Included



- ADR-compliant transport (Class 9)
- UN-approved packaging selection and supply
- Battery classification (new, used, damaged, prototype)
- Labeling, marking, and documentation
- Temperature-controlled or ventilated storage
- Real-time monitoring and alerts
- Emergency response procedures
- Chain-of-custody documentation

Optional

- Battery testing and diagnostics
- Fire-containment packaging (e.g., pyro-stop, vermiculite)
- Reverse logistics for recycling
- End-of-life battery collection
- On-site battery removal and de-installation
- OEM-specific safety training
- DGSA (Dangerous Goods Safety Advisor) support

5. Operational Workflow

1. Classification

- Identify battery type (new/used/damaged/prototype)
- Determine applicable ADR packing instruction
- Risk assessment (thermal runaway, swelling, leakage)

2. Packaging

- Select UN-approved packaging (P908, P911, LP904, etc.)
- Add fire-mitigation materials (vermiculite, absorbents)
- Apply ADR labels and marks

3. Transport

- ADR-certified drivers and vehicles
- Temperature and shock monitoring



- Secure loading and segregation
- Emergency equipment onboard

4. Delivery

- Controlled unloading
- Condition check
- Documentation and sign-off

5. Post-transport

- Recycling or refurbishment flows
- Incident reporting (if applicable)
- Documentation archiving

6. Pricing Model

Common structures

- Per battery or per kg
- Per packaging unit (UN box, crate, fire-safe container)
- ADR transport surcharge
- Storage fee (temperature-controlled or ventilated)
- DGSA and compliance service fee

Cost drivers

- Battery size, weight, and chemistry
- Condition (new vs damaged)
- Packaging type (standard vs fire-resistant)
- Transport distance and mode
- Monitoring and security requirements

7. Key KPIs

Safety & Compliance

- ADR compliance rate
- Incident/thermal-runaway rate
- Packaging compliance accuracy



Operational

- On-time pickup/delivery
- Monitoring alert rate
- Reverse-logistics cycle time

Financial

- Cost per battery movement
- Insurance claim reduction
- Recycling value recovery

8. Risks & Challenges

- Thermal runaway and fire risk
- Incorrect classification or packaging
- Damaged or swollen batteries
- High regulatory complexity
- Limited carrier availability for ADR Class 9
- Insurance and liability constraints

9. Differentiators

A. Safety

- Fire-resistant packaging
- Real-time monitoring
- ADR-trained specialists

B. Compliance

- Full ADR Class 9 expertise
- DGSA oversight
- OEM-aligned safety protocols

C. Technical capability

- Handling of prototypes and damaged batteries
- Temperature-controlled and ventilated storage
- Reverse-logistics and recycling integration



D. Reliability

- Zero-incident standards
- Full chain-of-custody
- Proven EV and battery-industry experience

10. When Battery Logistics (Lithium-Ion ADR) is the right solution

- You transport EV or industrial batteries
- Damaged or defective batteries require safe handling
- ADR compliance is mandatory
- You need fire-safe packaging and monitoring
- You manage recycling or reverse-logistics flows
- OEMs require certified, high-safety partners



9.5. Time-Critical – OBC (On-Board Courier)

Definition:

On-Board Courier (OBC) is a **hand-carry, person-to-person transport service** where a trained courier physically accompanies urgent shipments on the next available flight. It provides **maximum speed, security, and chain-of-custody**, ensuring critical items reach their destination **within hours**, not days.

This is a **premium, ultra-fast logistics solution** used when failure is not an option.

1. Product Description

OBC services ensure the **fastest possible international delivery** by placing a courier on a commercial flight with shipment in hand luggage or checked baggage (depending on regulations).

Core capabilities

- Global 24/7 OBC dispatch
- Next-flight-out (NFO) routing
- Hand-carry or checked-in escort
- Full chain-of-custody and personal supervision
- Real-time tracking and status updates
- Customs pre-clearance support
- Door-to-door delivery with courier escort

Typical shipments

- Automotive line-stop parts
- High-value prototypes
- Medical samples and urgent lab materials
- Critical documents
- High-tech components
- Aerospace and MRO parts

2. Customer Segments

Ideal for industries where **minutes matter** and delays cause major financial or operational impact.

Best-fit customers



- Automotive OEMs & Tier-1 suppliers
- Aerospace & MRO
- High-tech & semiconductor
- Pharma & medical
- Luxury goods
- Legal and financial institutions

3. Value Proposition

Operational value

- Fastest possible global delivery
- Zero-loss chain-of-custody
- Real-time visibility
- Dedicated courier supervision

Financial value

- Avoidance of production line stoppages
- Reduced downtime for critical equipment
- Lower risk of lost or delayed shipments
- High ROI for time-sensitive flows

Strategic value

- Trusted emergency logistics partner
- Competitive advantage in service reliability
- Supports global operations and crisis response

4. Service Scope

Included

- 24/7 OBC control tower
- Courier dispatch within minutes
- Flight booking and routing optimization
- Hand-carry or checked-in escort
- Customs and immigration coordination



- Real-time tracking and communication
- Door-to-door delivery

Optional

- Charter flight integration
- Dangerous goods (DG) OBC (where permitted)
- Visa-ready global courier pool
- Insurance for high-value items
- Multi-courier relay for ultra-long routes

5. Operational Workflow

1. Request intake

- Shipment details
- Pickup/delivery location
- Time constraints
- Commodity and customs requirements

2. Routing

- Next-flight-out (NFO) search
- Courier availability check
- Risk assessment (customs, transit, security)

3. Execution

- Courier pickup at shipper
- Airport check-in and security
- In-flight supervision
- Real-time updates at every milestone

4. Delivery

- Courier handover at destination
- Signature and chain-of-custody confirmation

5. Post-delivery

- Documentation



- Incident reporting (if any)
- Customer debrief

6. Pricing Model

Common structures

- Flat OBC service fee
- Flight cost + courier travel expenses
- Per-km or per-hour surcharge for ground legs
- Premium for night/weekend dispatch
- Insurance surcharge for high-value items

Cost drivers

- Distance and routing complexity
- Courier availability and visa requirements
- Commodity type and customs complexity
- Lead time (immediate vs planned)

7. Key KPIs

Speed

- Door-to-door transit time
- Dispatch time (request → courier pickup)

Reliability

- On-time delivery
- Chain-of-custody accuracy
- Zero-loss rate

Customer impact

- Line-stop avoidance
- Downtime reduction
- Customer satisfaction

8. Risks & Challenges

- Flight cancellations or delays



- Visa restrictions for couriers
- Customs complications
- Security screening limitations
- Limited OBC availability during peak travel periods

9. Differentiators

A. Speed

- Immediate dispatch
- Next-flight-out routing
- Global courier network

B. Security

- Personal supervision
- Full chain-of-custody
- Zero-loss handling

C. Transparency

- Real-time tracking
- Proactive communication
- Milestone-based updates

D. Reliability

- 24/7 control tower
- Redundant routing options
- Experienced, vetted couriers

10. When OBC is the right solution

- A production line is at risk of stopping
- A part or document must arrive **today**
- The shipment is too valuable to risk standard transport
- Customs clearance must be accelerated
- You need guaranteed personal supervision
- Failure would cause major financial or operational damage



9.5. Time-Critical – NFO (Next Flight Out)

Definition:

Next Flight Out (NFO) is a **rapid airfreight solution** that books the **earliest possible commercial flight** to move urgent shipments with minimal delay.

It provides **fast, reliable, and cost-efficient emergency transport**, ideal when speed is essential, but a hand-carry courier (OBC) is not required.

NFO is the **workhorse of time-critical logistics**, balancing speed, cost, and global reach.

1. Product Description

NFO leverages global airline networks to move urgent shipments on the **next available departure**, with priority handling and continuous monitoring.

Core capabilities

- Global 24/7 NFO control tower
- Real-time flight availability and routing
- Priority uplift on commercial flights
- Express pickup and airport transfer
- Proactive monitoring and milestone updates
- Customs pre-clearance support
- Door-to-door delivery with express ground legs

Typical shipments

- Automotive line-stop parts
- Aerospace AOG components
- High-tech and semiconductor parts
- Medical devices and urgent lab materials
- Critical documents and prototypes
- MRO and spare parts

2. Customer Segments

Ideal for industries where **speed and reliability** are essential, but OBC is not required.

Best-fit customers

- Automotive OEMs & Tier-1 suppliers



- Aerospace & MRO
- High-tech & semiconductor
- Pharma & medical
- Industrial machinery
- Energy and utilities

3. Value Proposition

Operational value

- Fastest airfreight option without a courier
- Priority handling at origin and destination
- Real-time visibility and proactive updates
- Reduced risk of delays or misrouting

Financial value

- Lower cost than OBC
- Avoidance of production downtime
- Reduced penalties for late delivery
- Optimized emergency logistics spend

Strategic value

- Reliable global emergency network
- Strong customer service differentiation
- Supports 24/7 operations and crisis response

4. Service Scope

Included

- 24/7 NFO control tower
- Flight search and booking (next available departure)
- Priority handling at airline terminals
- Express pickup and delivery
- Real-time tracking and communication



- Customs coordination

Optional

- Dangerous goods (DG) NFO
- Temperature-controlled NFO
- Multi-piece or palletized NFO
- Charter integration for unreachable routes
- Insurance for high-value shipments

5. Operational Workflow

1. Request intake

- Shipment details
- Pickup/delivery locations
- Commodity and customs requirements
- Time constraints

2. Routing

- Real-time NFO flight search
- Airline capacity check
- Risk assessment (transit time, connections, customs)

3. Execution

- Express pickup
- Priority acceptance at airport
- Flight uplift
- Proactive milestone updates

4. Delivery

- Express ground handling
- Door-to-door delivery
- POD and chain-of-custody confirmation

5. Post-delivery

- Documentation



- Incident reporting (if any)
- Customer debrief

6. Pricing Model

Common structures

- NFO service fee
- Airfreight rate (per kg or volumetric weight)
- Airport handling charges
- Express pickup/delivery surcharge
- Weekend/night premium

Cost drivers

- Route and airline availability
- Shipment weight/volume
- Customs complexity
- Lead time (immediate vs planned)

7. Key KPIs

Speed

- Door-to-door transit time
- Time from request to flight departure

Reliability

- On-time uplift
- On-time delivery
- Zero-loss rate

Customer impact

- Line-stop avoidance
- Downtime reduction
- SLA compliance

8. Risks & Challenges

- Flight cancellations or delays



- Airline capacity constraints
- Customs bottlenecks
- Weather disruptions
- Airport handling delays

9. Differentiators

A. Speed

- Immediate routing
- Priority uplift
- Express ground handling

B. Reliability

- 24/7 control tower
- Proactive monitoring
- Redundant routing options

C. Transparency

- Real-time tracking
- Milestone-based communication
- Predictive ETA updates

D. Flexibility

- Works for small parcels to pallets
- DG and temperature-controlled options
- Charter fallback for critical lanes

10. When NFO is the right solution

- You need **fastest possible airfreight** without OBC
- A production line is at risk
- AOG or MRO parts must move immediately
- Shipment is too large or restricted for OBC
- You need global reach with predictable cost
- Failure would cause operational or financial damage



9.6. Spare Parts 24/7 Service

Definition:

Spare Parts 24/7 is a round-the-clock emergency logistics solution designed to supply critical components whenever operational continuity is at risk.

It ensures immediate sourcing, dispatch, and delivery of essential spare parts through a global network of warehouses, suppliers, and transport partners.

This service minimizes downtime, prevents production stoppages, and supports mission-critical operations across industries.

Spare Parts 24/7 is the backbone of maintenance-driven logistics, combining speed, reliability, and technical expertise.

1. Product Description

Spare Parts 24/7 provides continuous access to urgent spare parts sourcing, transport, and delivery.

The service integrates real-time inventory visibility, rapid dispatch, and multimodal transport options to ensure parts reach their destination without delay.

Core capabilities

- 24/7 global spare parts control tower
- Real-time stock availability and supplier coordination
- Immediate dispatch from regional warehouses
- Express pickup and priority handling
- Multimodal transport (courier, airfreight, NFO, road express)
- Proactive monitoring and milestone updates
- Customs pre-clearance and documentation support
- Door-to-door delivery with express ground legs

Typical shipments

- Automotive and industrial spare parts
- Aerospace AOG and MRO components
- High-tech and semiconductor replacement parts
- Medical equipment components
- Energy, utilities, and heavy machinery parts



- Critical maintenance kits and consumables

2. Customer Segments

Ideal for industries where equipment uptime is essential and spare parts must be available at any hour.

Best fit customers

- Automotive OEMs & Tier 1 suppliers
- Aerospace, AOG & MRO providers
- High-tech & semiconductor manufacturers
- Pharma & medical equipment companies
- Industrial machinery & robotics
- Energy, utilities & infrastructure operators

3. Value Proposition

Operational value

- Immediate access to critical spare parts
- Reduced downtime and faster maintenance cycles
- Priority handling and rapid dispatch
- Real-time visibility and proactive communication
- Seamless integration with maintenance workflows (MRO, TPM, CMMS)

Financial value

- Avoidance of costly production line stoppages
- Reduced penalties for late delivery or SLA breaches
- Optimized emergency logistics spend
- Lower cost than full charter or OBC solutions

Strategic value

- Reliable global spare parts ecosystem
- Strong customer service differentiation
- Supports 24/7 operations and crisis response
- Enhances supply chain resilience and uptime performance



4. Service Scope

Included

- 24/7 spare parts control tower
- Supplier coordination and stock confirmation
- Immediate dispatch and priority handling
- Express pickup and delivery
- Real-time tracking and milestone communication
- Customs coordination and documentation
- Multimodal routing (courier, air, road express)

Optional

- Dangerous goods (DG) spare parts handling
- Temperature-controlled spare parts transport
- Multi-piece or palletized shipments
- Integration with NFO or charter for urgent lanes
- Insurance for high-value components
- Vendor-managed inventory (VMI) support

5. Operational Workflow

1. Request intake

- Part number, description, and urgency
- Pickup/delivery locations
- Commodity and customs requirements
- Operational impact and time constraints

2. Sourcing & routing

- Real-time stock checks across global suppliers
- Warehouse or supplier allocation
- Transport mode selection (courier, NFO, road express)
- Risk assessment (lead time, customs, handling)



3. Execution

- Express pickup
- Priority acceptance at warehouse or terminal
- Transport uplift (air/road/courier)
- Proactive milestone updates

4. Delivery

- Express ground handling
- Door-to-door delivery
- POD and chain-of-custody confirmation

5. Post-delivery

- Documentation and invoicing
- Incident reporting (if any)
- Customer debrief and performance review

6. Pricing Model

Common structures

- Spare Parts 24/7 service fee
- Transport cost (courier, airfreight, road express)
- Warehouse handling charges
- Express pickup/delivery surcharge
- Weekend/night premium

Cost drivers

- Route and transport mode
- Shipment weight/volume
- Supplier location and stock availability
- Customs complexity
- Lead time (immediate vs planned)

7. Key KPIs



Speed

- Door-to-door transit time
- Time from request to dispatch

Reliability

- On-time dispatch
- On-time delivery
- Zero loss/damage rate

Customer impact

- Downtime reduction
- Line stop avoidance
- SLA compliance

8. Risks & Challenges

- Supplier stock shortages
- Customs delays or documentation issues
- Weather or transport disruptions
- Airport/warehouse handling delays
- Incorrect part identification or compatibility issues

9. Differentiators

A. Speed

- Immediate sourcing and dispatch
- Priority handling across all transport modes
- Express ground operations

B. Reliability

- 24/7 control tower
- Proactive monitoring and escalation
- Redundant routing and supplier options

C. Transparency

- Real-time tracking



- Milestone-based communication
- Predictive ETA updates

D. Flexibility

- Suitable for small parts to palletized shipments
- DG and temperature-controlled options
- Integration with NFO or charter for critical lanes

10. When Spare Parts 24/7 is the Right Solution

- A production line is at risk of downtime
- AOG, MRO, or maintenance operations require immediate parts
- Stock is unavailable locally and must be sourced urgently
- Shipment is too large or unsuitable for OBC
- You need predictable, fast, and cost-efficient emergency logistics
- Failure to deliver would cause operational or financial damage



10.0. Transport Management System (TMS)

Definition:

A Transport Management System (TMS) is an integrated software platform that optimizes, automates, and manages the end-to-end transportation lifecycle.

It provides real-time visibility, intelligent planning, carrier management, and digital execution tools to improve efficiency, reduce costs, and enhance service quality across all transport modes.

TMS is the digital backbone of modern logistics, enabling data-driven decisions, seamless collaboration, and scalable transport operations.

1. Product Description

The TMS centralizes all transport activities into a single digital environment.

It supports planning, execution, tracking, billing, and performance analytics for domestic and international shipments.

Core capabilities

- Multimodal transport planning (road, air, ocean, rail)
- Automated carrier selection and rate management
- Route optimization and load consolidation
- Real-time shipment visibility and tracking
- Digital document management (eCMR, AWB, B/L, invoices)
- Freight audit and automated billing
- Exception management and proactive alerts
- API/EDI integration with ERP, WMS, and carrier systems
- Analytics dashboards and KPI reporting

Typical use cases

- Daily transport planning and dispatch
- Carrier procurement and rate management
- Real-time tracking for customers and internal teams
- Freight cost control and invoice validation
- Compliance and documentation automation



- Network optimization and performance analysis

2. Customer Segments

Ideal for organizations with complex, high-volume, or multi-modal transport operations.

Best fit customers

- Manufacturers (automotive, industrial, high-tech)
- Retailers and e-commerce companies
- 3PLs and freight forwarders
- Distributors and wholesalers
- Pharma and medical supply chains
- Energy, utilities, and heavy industry

3. Value Proposition

Operational value

- Centralized control of all transport activities
- Faster planning through automation

Improved on time performance

- Real-time visibility for all stakeholders
- Reduced manual work and fewer errors

Financial value

- Lower transport costs through optimized routing
- Better carrier rate management and procurement
- Automated freight audit reduces overbilling
- Improved asset utilization (trucks, trailers, containers)
- Data-driven decisions that reduce waste and inefficiency

Strategic value

- Scalable digital infrastructure for growth
- Enhanced customer experience through transparency
- Stronger compliance and documentation accuracy
- Supports digital transformation and Industry 4.0 initiatives



4. Service Scope

Included

- TMS platform access (cloud or on-premise)
- Transport planning and execution modules
- Carrier management and rate database
- Real-time tracking and visibility tools
- Document management and digital workflows
- Standard API/EDI integrations
- Analytics dashboards and reporting
- User training and onboarding

Optional

- Advanced optimization engine (AI-based routing)
- Control tower integration (24/7 monitoring)
- Custom integration with ERP/WMS/CRM
- Customer portal for shipment visibility
- Mobile app for drivers and field operations
- CO₂ emissions tracking and sustainability reporting
- Multi-language and multi-currency support

5. Operational Workflow

1. Order intake

- Import transport orders from ERP/WMS
- Validate shipment details and constraints

2. Planning

- Carrier selection based on rates, performance, and capacity
- Route optimization and load consolidation
- Scheduling and dispatch

3. Execution

- Digital transport documents generated



- Carrier assignment and pickup confirmation
- Real-time tracking and milestone updates

4. Delivery

- POD capture (digital signature, photo, timestamp)
- Exception handling and customer notifications

5. Post-delivery

- Freight audit and invoice matching
- Performance reporting
- Continuous improvement recommendations

6. Pricing Model

Common structures

- Subscription fee (per user, per site, or per shipment)
- Implementation and onboarding cost
- Integration fees (API/EDI)
- Optional module pricing
- Support and maintenance package

Cost drivers

- Shipment volume
- Number of users and locations
- Integration complexity
- Required customization
- Selected modules and features

7. Key KPIs

Efficiency

- Planning time per shipment
- Load utilization rate
- Automation rate (manual vs automated tasks)



Cost

- Cost per shipment
- Freight audit savings
- Carrier rate optimization impact

Service

- On-time pickup and delivery
- Exception resolution time
- Customer satisfaction score

8. Risks & Challenges

- Poor data quality impacting planning accuracy
- Carrier non-compliance with digital processes
- Integration delays with legacy systems
- Change-management resistance from users
- Connectivity issues for real-time tracking

9. Differentiators

A. Automation

- AI-driven planning and optimization
- Automated carrier selection and rate comparison
- Digital workflows reducing manual effort

B. Visibility

- Real-time tracking across all modes
- Predictive ETA and exception alerts
- Customer-facing visibility portals

C. Integration

- Seamless ERP/WMS/CRM connectivity
- Carrier EDI/API library
- Scalable architecture for global operations

D. Intelligence



- Advanced analytics and dashboards
- CO₂ and sustainability reporting
- Performance benchmarking and insights

10. When TMS is the Right Solution

- Transport operations are growing in volume or complexity
- Manual planning is slow, error-prone, or costly
- You need real-time visibility for customers and internal teams
- Freight costs need to be controlled and audited
- Multiple carriers, modes, or lanes must be managed efficiently
- Digital transformation and automation are strategic priorities



10.1. Warehouse Management System (WMS)

Definition:

A Warehouse Management System (WMS) is a digital platform that manages, optimizes, and automates all warehouse operations from inbound receiving to outbound shipping.

It provides real-time inventory visibility, intelligent storage allocation, labor optimization, and seamless integration with transport and enterprise systems.

WMS is the operational engine of modern warehousing, enabling accuracy, speed, and efficiency across the entire fulfillment lifecycle.

1. Product Description

The WMS orchestrates all warehouse activities in a centralized digital environment.

It ensures accurate inventory control, optimized storage, efficient picking, and error-free order fulfillment.

Core capabilities

- Real-time inventory visibility and tracking
- Automated receiving, put-away, and replenishment
- Slotting optimization and storage management
- Advanced picking methods (wave, batch, zone, voice, RF)
- Packing, labeling, and shipping automation
- Cycle counting and inventory accuracy tools
- Yard and dock scheduling
- Integration with ERP, TMS, and carrier systems
- Performance dashboards and operational analytics

Typical use cases

- High-volume order fulfillment
- Multi-client 3PL warehouse operations
- E-commerce and omnichannel distribution
- Spare parts and MRO inventory management
- Cold chain and temperature-controlled warehousing
- Cross-docking and flow-through operations



2. Customer Segments

Ideal for organizations that require precise inventory control, fast order processing, and scalable warehouse operations.

Best fit customers

- Retail and e-commerce companies
- 3PL and contract logistics providers
- Manufacturers (automotive, industrial, high-tech)
- Pharma and medical supply chains
- Food, beverage, and cold chain operators
- Spare parts and aftermarket distribution centers

3. Value Proposition

Operational value

- Increased inventory accuracy
- Faster picking and order fulfillment
- Optimized warehouse layout and storage utilization
- Reduced labor effort through automation
- Real-time visibility across all warehouse processes

Financial value

- Lower operating costs through efficiency gains
- Reduced inventory shrinkage and stock discrepancies
- Improved labor productivity and resource allocation
- Fewer shipping errors and returns
- Better use of warehouse space

Strategic value

- Scalable platform for growth and peak seasons
- Enhanced customer satisfaction through accuracy and speed
- Strong compliance and traceability
- Supports digital transformation and Industry 4.0 initiatives



4. Service Scope

Included

- WMS platform access (cloud or on-premise)
- Inventory management and control modules
- Receiving, put-away, picking, and shipping workflows
- Standard integrations with ERP/TMS
- User training and onboarding
- Reporting and analytics dashboards
- Mobile/RF device support

Optional

- Advanced slotting and optimization engine
- Voice picking or robotics integration
- Yard management and dock scheduling
- Custom integrations (ERP, e-commerce, automation systems)
- Multi-warehouse and multi-client capabilities
- Temperature-controlled inventory management
- CO₂ and sustainability reporting

5. Operational Workflow

1. Inbound

- ASN or purchase order import
- Receiving and quality checks
- Put-away with optimized storage allocation

2. Inventory management

- Real-time stock updates
- Replenishment and stock transfers
- Cycle counting and audits

3. Order processing

- Order import from ERP/e-commerce



- Picking strategy selection (wave, batch, zone, etc.)
- Packing, labeling, and consolidation

4. Outbound

- Shipping documentation
- Carrier integration and dispatch
- Dock scheduling and loading

5. Post-processing

- Inventory reconciliation
- Performance reporting
- Continuous improvement recommendations

6. Pricing Model

Common structures

- Subscription fee (per user, per warehouse, or per transaction)
- Implementation and configuration cost
- Integration fees (ERP, TMS, automation)
- Optional module pricing
- Support and maintenance package

Cost drivers

- Warehouse size and complexity
- Number of users and devices
- Integration requirements
- Automation level (RF, voice, robotics)
- Transaction volume

7. Key KPIs

Inventory

- Inventory accuracy rate
- Stock discrepancy reduction
- Cycle count performance



Efficiency

- Order picking productivity
- Dock-to-stock time
- Order cycle time

Service

- On-time shipping rate
- Order accuracy
- Customer satisfaction score

8. Risks & Challenges

- Poor master data impacting accuracy
- Resistance to process changes
- Integration challenges with legacy systems
- Hardware or connectivity issues (RF, scanners)
- Incorrect slotting or layout configuration

9. Differentiators

A. Accuracy

- Real-time inventory tracking
- Automated workflows reducing human error
- Intelligent replenishment and slotting

B. Efficiency

- Optimized picking and storage
- Labor productivity tools
- Fast inbound and outbound processing

C. Integration

- Seamless ERP/TMS/carrier connectivity
- Automation and robotics compatibility
- Scalable multi-warehouse architecture



D. Visibility

- Live dashboards and analytics
- Exception alerts and predictive insights
- Customer-facing visibility options

10. When WMS is the Right Solution

- Inventory accuracy is critical to operations
- Order volumes are increasing or seasonal peaks are challenging
- Manual processes cause delays or errors
- Multiple clients, SKUs, or warehouses must be managed
- You need real-time visibility and control
- Warehouse automation or robotics is planned
- Customer expectations require fast, accurate fulfillment



10.2. Visibility Platform – Real-Time Data

Definition:

A Visibility Platform is a real-time data and analytics solution that provides end-to-end transparency across the entire supply chain.

It aggregates live information from carriers, telematics, IoT devices, warehouses, and enterprise systems to deliver a single source of truth for shipment status, inventory levels, exceptions, and performance metrics.

Real-time visibility is the intelligence layer of modern logistics, enabling proactive decision-making, faster response times, and improved customer experience.

1. Product Description

The Visibility Platform consolidates data from multiple systems and partners into one unified dashboard.

It provides live tracking, predictive insights, and automated alerts for shipments, inventory, and operational events.

Core capabilities

- Real-time shipment tracking across all modes (road, air, ocean, rail)
- IoT and telematics integration (GPS, sensors, ELD, RFID)
- Predictive ETA and delay forecasting
- Inventory visibility across warehouses and in-transit
- Exception detection and automated alerts
- Digital document visibility (POD, invoices, customs docs)
- Control tower dashboards and analytics
- API/EDI connectivity with TMS, WMS, ERP, and carriers
- Customer-facing visibility portals

Typical use cases

- Live tracking of high-value or time-critical shipments
- Monitoring inventory across multiple warehouses
- Predicting delays and preventing service failures
- Providing customers with real-time delivery updates
- Managing multimodal global supply chains
- Exception management and proactive intervention

2. Customer Segments

Ideal for organizations that require transparency, predictability, and control across complex supply chains.

Best fit customers



- Manufacturers (automotive, aerospace, high-tech)
- Retailers and e-commerce companies
- 3PLs and freight forwarders
- Pharma and medical supply chains
- Energy, utilities, and heavy industry
- Global supply chain and procurement teams

3. Value Proposition

Operational value

- End-to-end visibility across shipments and inventory
- Faster response to delays, disruptions, and exceptions
- Improved on-time performance and customer service
- Centralized data for all stakeholders
- Enhanced collaboration across partners and carriers

Financial value

- Reduced costs from delays, penalties, and inefficiencies
- Lower safety stock through accurate inventory visibility
- Fewer lost shipments and claims
- Optimized transport and warehouse operations
- Better forecasting and planning

Strategic value

- Data-driven decision-making
- Strong customer experience differentiation
- Supports digital transformation and supply chain resilience
- Enables predictive and autonomous logistics

4. Service Scope

Included

- Real-time tracking and visibility dashboards
- Predictive ETA and delay analytics
- Exception alerts and automated notifications
- Integration with carriers, IoT devices, and enterprise systems
- Inventory visibility across warehouses and in-transit
- Reporting and analytics suite
- Customer portal access

Optional



- Control tower operations (24/7 monitoring)
- IoT sensor deployment (temperature, shock, humidity)
- CO₂ emissions tracking and sustainability analytics
- Custom dashboards and KPI configuration
- Advanced AI-based predictive analytics
- Integration with robotics, automation, or yard systems

5. Operational Workflow

1. Data intake

- API/EDI connections with carriers and partners
- IoT and telematics data ingestion
- ERP/TMS/WMS integration

2. Processing

- Data normalization and validation
- Predictive ETA calculation
- Exception detection and risk scoring

3. Visualization

- Live dashboards for shipments and inventory
- Heatmaps, timelines, and route views
- Customer-facing visibility tools

4. Alerts & actions

- Automated notifications for delays, temperature breaches, or route deviations
- Escalation workflows for critical events
- Collaboration tools for issue resolution

5. Reporting

- KPI dashboards (OTD, dwell time, carrier performance)
- Historical analytics and trend insights
- Continuous improvement recommendations

6. Pricing Model

Common structures

- Subscription fee (per shipment, per site, or per user)
- Integration and onboarding cost
- IoT hardware (if applicable)
- Optional analytics or control tower modules

Cost drivers



- Shipment volume and data frequency
- Number of integrations and carriers
- IoT sensor requirements
- Customization level
- Global vs regional deployment

. Key KPIs

Visibility

- Real-time tracking coverage
- Data latency and accuracy
- Predictive ETA accuracy

Performance

- On-time delivery rate
- Exception resolution time
- Carrier performance metrics

Inventory

- Inventory accuracy
- In-transit visibility rate
- Stockout and overstock reduction

8. Risks & Challenges

- Inconsistent data quality from carriers
- Integration complexity with legacy systems
- IoT hardware reliability or connectivity issues
- Limited visibility in certain geographies or modes
- Partner compliance with data-sharing requirements

9. Differentiators

A. Real-time intelligence

- Predictive ETA and risk scoring
- AI-driven exception detection
- Continuous data refresh

B. Integration ecosystem

- Broad carrier API/EDI library
- IoT and telematics compatibility
- Seamless ERP/TMS/WMS connectivity

C. User experience



- Intuitive dashboards
- Customer-facing visibility portals
- Configurable alerts and workflows

D. Scalability

- Global multi-mode coverage
- High-volume data processing
- Modular architecture for growth

10. When a Visibility Platform is the Right Solution

- You need real-time tracking for shipments or inventory
- Customers expect live updates and transparency
- Delays or disruptions cause operational or financial impact
- Multiple carriers, modes, or warehouses must be monitored
- You want predictive insights, not just historical reporting
- Digital transformation and supply chain resilience are priorities



10.3. CO₂ Tools – Emissions Calculation

Definition:

CO₂ Tools are digital solutions that calculate, monitor, and analyse greenhouse gas emissions across transport and logistics operations.

They use standardized methodologies (e.g., GLEC Framework, ISO 14083, EN 16258) and real-time operational data to provide accurate carbon footprints for shipments, fleets, warehouses, and supply chain activities.

CO₂ Tools are the sustainability engine of modern logistics, enabling compliance, transparency, and data-driven decarbonization strategies.

1. Product Description

The CO₂ Tools platform collects transport, fuel, and operational data to calculate emissions across all modes and supply chain activities.

It provides dashboards, reporting, and scenario modelling to help organizations measure, reduce, and communicate their environmental impact.

Core capabilities

- Emissions calculation for all transport modes (road, air, ocean, rail)
- Compliance with GLEC, ISO 14083, EN 16258, and global standards
- Real-time emissions estimation using operational data
- Fuel-based, distance-based, and activity-based calculation methods
- CO₂e reporting for shipments, lanes, fleets, and warehouses
- Scenario modelling (mode shift, load optimization, alternative fuels)
- Customer-facing sustainability dashboards
- API integration with TMS, WMS, ERP, and visibility platforms
- Automated sustainability reports and audit-ready documentation

Typical use cases

- Shipment-level CO₂ reporting for customers
- Corporate sustainability reporting (CSRD, GHG Protocol)
- Carrier emissions benchmarking
- Route and mode optimization for lower emissions
- Fleet decarbonization planning
- Warehouse energy and emissions tracking

2. Customer Segments

Ideal for organizations with sustainability goals, regulatory requirements, or customer expectations for emissions transparency.

Best fit customers



- Manufacturers (automotive, aerospace, industrial)
- Retailers and e-commerce companies
- 3PLs and freight forwarders
- Pharma and medical supply chains
- Energy, utilities, and heavy industry
- Corporate sustainability and procurement teams

3. Value Proposition

Operational value

- Accurate, standardized emissions calculations
- Real-time visibility into carbon hotspots
- Automated reporting reduces manual workload
- Seamless integration with existing logistics systems
- Supports operational decisions that reduce emissions

Financial value

- Avoidance of regulatory penalties
- Lower fuel and transport costs through optimization
- Reduced need for consultants or manual calculations
- Improved tender competitiveness through sustainability performance

Strategic value

- Supports ESG, CSRD, and GHG Protocol compliance
- Enhances brand reputation and customer trust
- Enables long-term decarbonization strategies
- Provides data for science-based targets (SBTi)

4. Service Scope

Included

- CO₂ calculation engine
- Standard emissions factors database (GLEC, DEFRA, EPA, etc.)
- Shipment-level and lane-level reporting
- Dashboard and analytics suite
- Integration with TMS/WMS/ERP
- Automated sustainability reports
- Customer-facing emissions visibility

Optional

- Real-time IoT-based emissions tracking (fuel, telematics)
- Custom emissions factors for specific fleets or carriers



- Warehouse energy and emissions module
- Scenario modelling and optimization consulting
- CO₂ offsetting and in setting integration
- Advanced ESG reporting packages

5. Operational Workflow

1. Data intake

- Transport orders, routes, and shipment details
- Fuel consumption, vehicle type, load factor
- Carrier and mode-specific operational data
- Warehouse energy and activity data

2. Calculation

- Apply standardized methodologies (GLEC, ISO 14083)
- Select appropriate calculation method (fuel, distance, activity)
- Convert emissions to CO₂e using global warming potentials

3. Visualization

- Dashboards for shipments, lanes, fleets, and warehouses
- Heatmaps and trend analysis
- Customer-facing sustainability views

4. Reporting

- Automated CO₂ reports (monthly, quarterly, annual)
- Audit-ready documentation
- Compliance reporting for CSRD, GHG Protocol, SBTi

5. Optimization

- Identify high-emission lanes or activities
- Scenario modelling (mode shift, consolidation, alternative fuels)
- Recommendations for reduction strategies

6. Pricing Model

Common structures

- Subscription fee (per shipment, per site, or per user)
- Integration and onboarding cost
- Optional analytics or consulting modules
- IoT hardware (if applicable)

Cost drivers



- Shipment volume and data frequency
- Number of integrations
- Custom emissions factors
- Scope (transport only vs full supply chain)
- Reporting and analytics complexity

7. Key KPIs

Emissions

- CO₂e per shipment
- CO₂e per lane or mode
- Total supply chain emissions

Efficiency

- Emissions intensity (per kg, per km, per order)
- Load factor improvement
- Fuel efficiency metrics

Compliance

- Reporting accuracy
- Audit readiness
- Alignment with GLEC/ISO standards

8. Risks & Challenges

- Incomplete or inaccurate operational data
- Carrier non-compliance with data sharing
- Variability in emissions factors
- Complex regulatory requirements
- Difficulty comparing multimodal emissions

9. Differentiators

A. Accuracy

- Standardized methodologies (GLEC, ISO 14083)
- Real-time operational data integration
- Customizable emissions factors

B. Transparency

- Shipment-level CO₂ visibility
- Customer-facing dashboards
- Audit-ready documentation

C. Intelligence



- Predictive modelling and scenario analysis
- Emissions hotspot detection
- Optimization recommendations

D. Integration

- Seamless connectivity with TMS, WMS, ERP
- IoT and telematics compatibility
- Scalable architecture for global operations

10. When CO₂ Tools Are the Right Solution

- You need accurate emissions reporting for customers or regulators
- Sustainability is a strategic priority
- You want to reduce transport or warehouse emissions
- You require real-time CO₂ visibility across shipments
- You need to comply with CSRD, GHG Protocol, or ISO 14083
- You want to benchmark carriers or optimize routes for lower emissions



10.4. Strategic Logistics Strategy –

Network & Site Planning

Definition:

Network & Site Planning is a strategic logistics service that designs, optimizes, and future-proofs the physical structure of a supply chain.

It determines the ideal number, size, and location of warehouses, distribution centers, cross-docks, and transport routes to minimize cost, reduce lead times, and improve service levels.

Network & Site Planning is the strategic backbone of supply chain design, enabling scalable, resilient, and cost-efficient logistics networks.

1. Product Description

Network & Site Planning uses data-driven modelling, scenario analysis, and advanced optimization tools to design the optimal logistics footprint.

It evaluates demand patterns, transport flows, inventory strategies, and service requirements to create a high-performing network aligned with business goals.

Core capabilities

- End-to-end supply chain network modelling
- Optimal warehouse and distribution center location analysis
- Transport lane and route optimization
- Inventory positioning and safety stock strategy
- Capacity planning and throughput analysis
- Scenario modelling (growth, nearshoring, reshoring, M&A)
- Cost-to-serve and service-level optimization
- Risk and resilience assessment
- Sustainability and CO₂ impact modelling

Typical use cases

- Designing a new logistics network
- Consolidating or expanding warehouse footprints
- Entering new markets or regions
- Supporting mergers, acquisitions, or divestments
- Reducing logistics costs and improving service levels
- Preparing for growth, peak seasons, or volatility
- Transitioning to omnichannel or e-commerce models

2. Customer Segments



Ideal for organizations undergoing transformation, growth, or cost-optimization initiatives.

Best fit customers

- Manufacturers (automotive, aerospace, industrial)
- Retailers and e-commerce companies
- 3PLs and logistics service providers
- Pharma and medical supply chains
- FMCG and consumer goods companies
- Energy, utilities, and heavy industry

3. Value Proposition

Operational value

- Optimized logistics footprint and flow design
- Improved service levels and faster delivery times
- Reduced complexity and improved operational alignment
- Better inventory positioning and reduced stockouts
- Enhanced resilience against disruptions

Financial value

- Lower transport and warehousing costs
- Reduced inventory holding costs
- Improved asset utilization
- Cost-to-serve transparency
- Higher ROI on logistics infrastructure

Strategic value

- Future-proof network aligned with business growth
- Stronger competitive positioning
- Supports sustainability and CO₂ reduction goals
- Enables digital transformation and automation
- Provides a roadmap for long-term logistics excellence

4. Service Scope

Included

- Current-state network assessment
- Data collection and flow analysis
- Network modelling and optimization
- Site location analysis and footprint design
- Scenario modelling and business case development



- Cost-to-serve and financial impact analysis
- Strategic recommendations and roadmap

Optional

- Facility layout and engineering design
- Transport procurement and carrier strategy
- Inventory strategy and safety stock optimization
- Sustainability and CO₂ modelling
- Risk and resilience assessment
- Implementation support and PMO
- Digital twin creation for continuous optimization

5. Operational Workflow

1. Discovery & data intake

- Collect transport, inventory, and demand data
- Understand service requirements and constraints
- Map current network and flows

2. Analysis

- Baseline cost and performance assessment
- Identification of bottlenecks and inefficiencies
- Demand and capacity forecasting

3. Network modelling

- Optimization of warehouse locations and transport flows
- Scenario modelling (cost, service, CO₂, risk)
- Evaluation of alternative network designs

4. Strategy development

- Selection of optimal network configuration
- Financial and operational impact assessment
- Roadmap and implementation plan

5. Execution support

- Site selection and feasibility studies
- Transition planning and change management
- Performance tracking and continuous improvement

6. Pricing Model

Common structures



- Fixed-fee consulting project
- Modular pricing by scope (network, inventory, transport)
- Subscription for digital twin or continuous optimization
- Optional analytics or sustainability modules

Cost drivers

- Network size and complexity
- Data availability and quality
- Number of scenarios and modeling depth
- Geographic scope
- Required implementation support

7. Key KPIs

Cost

- Total logistics cost reduction
- Cost-to-serve improvement
- Inventory holding cost reduction

Service

- Delivery lead time improvement
- Service level increase
- Network responsiveness

Efficiency

- Warehouse and transport utilization
- Flow consolidation rate
- Network complexity reduction

Sustainability

- CO₂ emissions reduction
- Energy efficiency improvements
- Modal shift impact

8. Risks & Challenges

- Incomplete or inaccurate data
- Resistance to network changes
- Regulatory or geographic constraints
- Market volatility impacting demand
- Long implementation timelines for new sites

9. Differentiators



A. Analytical depth

- Advanced optimization models
- Digital twin capabilities
- Predictive analytics and forecasting

B. Strategic alignment

- Tailored to business growth and market strategy
- Integrated with transport, inventory, and warehousing
- Supports omnichannel and global supply chains

C. Sustainability

- CO₂ modelling and reduction scenarios
- Energy and footprint optimization
- Compliance with ESG frameworks

D. Resilience

- Risk-based network design
- Redundant routing and capacity planning
- Scenario planning for disruptions

10. When Network & Site Planning Is the Right Solution

- You need to redesign or expand your logistics network
- Costs are rising and efficiency is declining
- Service levels are inconsistent or below target
- You are entering new markets or channels
- M&A activity requires network consolidation
- Sustainability and CO₂ reduction are strategic priorities
- You want a long-term roadmap for logistics excellence



11.1. Outsourcing Strategy – Make or Buy

Definition:

A Make-or-Buy Outsourcing Strategy is a structured decision-making framework that determines whether logistics, operational, or supply-chain activities should be performed internally (“make”) or outsourced to external partners (“buy”). It evaluates cost, capability, risk, scalability, and strategic alignment to identify the optimal operating model for long-term performance.

Make-or-Buy Strategy is a cornerstone of supply-chain transformation, enabling organizations to focus on core competencies while leveraging external expertise where it creates the most value.

1. Product Description

The Make-or-Buy Strategy assesses internal capabilities versus external market options to determine the most efficient, cost-effective, and strategically aligned approach for logistics and supply-chain operations.

Core capabilities

- End-to-end outsourcing assessment
- Cost benchmarking and total cost of ownership (TCO) analysis
- Capability and maturity evaluation of internal operations
- Market analysis of 3PL/4PL and service providers
- Risk, resilience, and compliance assessment
- Scenario modeling (in-house, hybrid, full outsourcing)
- Transition planning and governance design
- Contracting and performance management frameworks

Typical use cases

- Evaluating whether to outsource warehousing or transport
- Assessing 3PL/4PL partnerships
- Deciding between internal vs external manufacturing or assembly
- Redesigning the operating model after M&A
- Reducing costs or improving service performance
- Preparing for automation, digitalization, or network redesign

2. Customer Segments

Ideal for organizations undergoing operational transformation, cost optimization, or strategic restructuring.

Best fit customers



- Manufacturers (automotive, aerospace, industrial)
- Retailers and e-commerce companies
- 3PLs and logistics service providers
- Pharma and medical supply chains
- FMCG and consumer goods companies
- Energy, utilities, and heavy industry

3. Value Proposition

Operational value

- Clear understanding of internal vs external capabilities
- Improved service levels through specialized partners
- Reduced operational complexity
- Better alignment of resources with strategic priorities
- Enhanced scalability and flexibility

Financial value

- Lower total cost of ownership (TCO)
- Optimized labour and infrastructure costs
- Reduced capital expenditure (CAPEX)
- Improved cost predictability through outsourcing contracts
- Higher ROI on logistics and supply-chain investments

Strategic value

- Focus on core competencies
- Access to best-in-class logistics expertise
- Increased resilience through diversified operating models
- Supports digital transformation and automation
- Enables long-term strategic planning

4. Service Scope

Included

- Current-state capability and cost assessment
- Internal vs external performance benchmarking
- Market analysis of outsourcing options
- Make-or-Buy decision framework and scoring model
- Scenario modelling and business case development
- Strategic recommendations and operating model design

Optional



- RFP development and 3PL/4PL selection
- Contract negotiation support
- Transition planning and PMO
- Governance and performance management framework
- Hybrid model design (shared operations)
- Risk and resilience assessment
- Sustainability and CO₂ impact modelling

5. Operational Workflow

1. Discovery & data intake

- Collect operational, financial, and performance data
- Understand strategic goals and constraints
- Map current processes and capabilities

2. Analysis

- Cost benchmarking and TCO assessment
- Internal capability and maturity evaluation
- Market and provider landscape analysis

3. Scenario modelling

- Compare in-house vs outsourcing vs hybrid models
- Evaluate cost, service, risk, and scalability impacts
- Develop business cases for each scenario

4. Strategy development

- Select optimal operating model
- Define roles, responsibilities, and governance
- Build financial and operational roadmap

5. Execution support

- RFP and partner selection (optional)
- Transition planning and change management
- Performance tracking and continuous improvement

6. Pricing Model

Common structures

- Fixed-fee consulting project
- Modular pricing by scope (transport, warehousing, manufacturing)
- Subscription for ongoing governance support
- Optional analytics or benchmarking modules



Cost drivers

- Operational complexity
- Number of scenarios and depth of analysis
- Geographic scope
- Data availability and quality
- Required implementation support

7. Key KPIs

Cost

- Total cost of ownership reduction
- CAPEX vs OPEX optimization
- Cost predictability improvement

Service

- Service level improvement
- Lead time reduction
- Provider performance metrics

Efficiency

- Productivity improvement
- Resource utilization
- Process standardization

Strategic

- Alignment with long-term business goals
- Risk reduction
- Flexibility and scalability

8. Risks & Challenges

- Incomplete or inaccurate cost data
- Internal resistance to outsourcing
- Over-dependence on external providers
- Contractual or compliance risks
- Transition complexity and service disruption

9. Differentiators

A. Analytical rigor

- Comprehensive TCO and capability assessment
- Scenario modelling with financial and operational impact
- Benchmarking against industry best practices



B. Strategic alignment

- Tailored to business goals and growth plans
- Integrated with network, transport, and inventory strategy
- Supports digital and automation initiatives

C. Risk & resilience

- Balanced evaluation of operational and strategic risks
- Hybrid model options for redundancy
- Governance frameworks for long-term control

D. Market expertise

- Deep knowledge of 3PL/4PL capabilities
- Access to provider benchmarks and performance data
- Strong procurement and contracting experience

10. When Make-or-Buy Strategy Is the Right Solution

- You need to reduce logistics or operational costs
- Internal capabilities are limited or outdated
- Service levels are inconsistent or below target
- You are considering 3PL/4PL partnerships
- M&A or restructuring requires operating model redesign
- You want to focus on core competencies
- You need a scalable, flexible, and resilient logistics setup



11.2. Digitalization – Automation Roadmap

Definition:

An Automation Roadmap is a strategic blueprint that defines how digital technologies, automation tools, and data-driven processes will transform logistics and supply-chain operations.

It identifies high-value use cases, prioritizes investments, and outlines a phased implementation plan to increase efficiency, reduce costs, and enhance resilience.

The Automation Roadmap is the foundation of digital transformation, enabling organizations to move from manual, fragmented processes to intelligent, automated, and scalable operations.

1. Product Description

The Automation Roadmap evaluates current processes, identifies automation opportunities, and defines a structured path toward digital maturity.

It integrates technologies such as RPA, AI, IoT, robotics, digital twins, and advanced analytics to build a future-ready logistics ecosystem.

Core capabilities

- End-to-end digital maturity assessment
- Process mapping and automation opportunity identification
- RPA (Robotic Process Automation) use case development
- AI/ML applications for forecasting, planning, and optimization
- IoT and sensor integration roadmap
- Warehouse and transport automation strategy
- Digital twin and control tower design
- Technology vendor evaluation and selection
- Phased implementation plan with ROI modeling

Typical use cases

- Automating repetitive back-office tasks (RPA)
- AI-based demand forecasting and inventory optimization
- Autonomous or semi-automated warehouse operations
- IoT-enabled asset tracking and condition monitoring
- Digital document workflows (eCMR, ePOD, e-invoicing)
- Predictive maintenance and fleet optimization
- Real-time visibility and control tower integration

2. Customer Segments

Ideal for organizations seeking to modernize operations, reduce manual work, and build a scalable digital foundation.



Best fit customers

- Manufacturers (automotive, aerospace, industrial)
- Retailers and e-commerce companies
- 3PLs and logistics service providers
- Pharma and medical supply chains
- FMCG and consumer goods companies
- Energy, utilities, and heavy industry

3. Value Proposition

Operational value

- Reduced manual workload and fewer errors
- Faster, more reliable processes
- Improved planning accuracy through AI and analytics
- Real-time visibility and automated decision-making
- Enhanced safety and compliance

Financial value

- Lower labor and operational costs
- Higher asset utilization and throughput
- Reduced downtime through predictive maintenance
- Faster ROI through targeted automation investments
- Lower cost-to-serve

Strategic value

- Future-proof digital infrastructure
- Stronger competitive differentiation
- Improved resilience and agility
- Supports sustainability and CO₂ reduction
- Enables scalable growth and omnichannel operations

4. Service Scope

Included

- Digital maturity assessment
- Process mapping and automation opportunity analysis
- Technology landscape evaluation
- Prioritized automation uses case portfolio
- ROI and business case development
- Phased automation roadmap
- Governance and change-management framework



Optional

- RPA development and deployment
- AI/ML model creation (forecasting, optimization)
- IoT sensor deployment and integration
- Robotics and warehouse automation design
- Digital twin and control tower implementation
- Vendor selection and contract support
- PMO and implementation management

5. Operational Workflow

1. Discovery & data intake

- Collect operational, process, and performance data
- Understand digital ambitions and constraints
- Map current systems and technology stack

2. Analysis

- Identify automation gaps and inefficiencies
- Evaluate digital maturity across functions
- Benchmark against industry best practices

3. Use case development

- Identify high-value automation opportunities
- Assess feasibility, impact, and complexity
- Build business cases and ROI models

4. Roadmap design

- Prioritize use cases (quick wins vs long-term initiatives)
- Define technology architecture and integration needs
- Develop phased implementation plan

5. Execution support

- Vendor selection and contracting
- Pilot projects and scaling strategy
- Change management and capability building
- Performance tracking and continuous improvement

6. Pricing Model

Common structures

- Fixed-fee consulting project
- Modular pricing by automation domain (RPA, AI, IoT, robotics)



- Subscription for digital twin or control tower services
- Optional implementation and PMO support

Cost drivers

- Scope and complexity of operations
- Number of automations use cases
- Technology integration requirements
- Geographic footprint
- Level of implementation support required

7. Key KPIs

Efficiency

- Automation rate (manual vs automated tasks)
- Process cycle time reduction
- Throughput improvement

Cost

- Cost-to-serve reduction
- Labor productivity improvement
- ROI on automation investments

Service

- On-time performance
- Error rate reduction
- Customer satisfaction

Digital maturity

- System integration level
- Data quality and availability
- Adoption of advanced technologies

8. Risks & Challenges

- Poor data quality limiting automation potential
- Resistance to change from operational teams
- Integration challenges with legacy systems
- Vendor lock-in or technology misalignment
- Over-automation without clear ROI

9. Differentiators

A. Holistic approach



- Covers process, technology, people, and governance
- Integrates warehouse, transport, and back-office automation
- Aligns with broader digital and business strategy

B. Technology-agnostic

- Independent evaluation of vendors and solutions
- Tailored architecture based on customer needs
- Scalable and future-proof design

C. ROI-driven

- Clear financial impact modelling
- Prioritization of high-value use cases
- Quick wins combined with long-term transformation

D. Innovation-focused

- AI, IoT, robotics, and digital twin integration
- Predictive and autonomous logistics capabilities
- Continuous improvement and digital evolution

10. When an Automation Roadmap Is the Right Solution

- Manual processes are slowing down operations
- Digital tools are fragmented or outdated
- You want to scale without increasing headcount
- Service levels or accuracy need improvement
- You are preparing for robotics, IoT, or AI adoption
- You want a structured, ROI-driven digital transformation plan
- You need a future-ready, automated logistics ecosystem



11.3. Operational – Lean Logistics – Efficiency Improvement

Definition:

Lean Logistics is an operational excellence methodology focused on eliminating waste, optimizing processes, and improving flow across transport, warehousing, and supply-chain operations.

It applies Lean principles, data-driven analysis, and continuous improvement tools to increase efficiency, reduce costs, and enhance service performance.

Lean Logistics is the engine of operational improvement, enabling organizations to run faster, smoother, and more reliably with fewer resources.

1. Product Description

Lean Logistics – Efficiency Improvement identifies inefficiencies, bottlenecks, and waste across logistics operations and implements structured improvements.

It uses Lean tools such as value-stream mapping, 5S, Kaizen, standard work, and root-cause analysis to create stable, predictable, and high-performing processes.

Core capabilities

- End-to-end process mapping (transport, warehouse, planning)
- Value Stream Mapping (VSM) and waste identification
- Standard work and process stabilization
- 5S workplace organization and visual management
- Kaizen workshops and rapid improvement events
- Root-cause analysis (5 Why, Ishikawa)
- KPI redesign and performance dashboards
- Labor productivity and resource optimization
- Continuous improvement coaching and capability building

Typical use cases

- Reducing warehouse picking time
- Improving dock-to-stock or order cycle time
- Eliminating transport delays and inefficiencies
- Reducing inventory errors and rework
- Increasing labour productivity and utilization
- Standardizing processes across sites or regions
- Preparing operations for automation or digitalization

2. Customer Segments



Ideal for organizations seeking to improve day-to-day logistics performance, reduce waste, and build a culture of continuous improvement.

Best fit customers

- Manufacturers (automotive, aerospace, industrial)
- Retailers and e-commerce companies
- 3PLs and logistics service providers
- Pharma and medical supply chains
- FMCG and consumer goods companies
- Spare parts and aftermarket operations

3. Value Proposition

Operational value

- Faster, more reliable logistics processes
- Reduced waste, errors, and variability
- Improved flow and throughput
- Higher labour productivity
- Better cross-functional alignment

Financial value

- Lower operating costs (labour, transport, warehousing)
- Reduced rework, returns, and quality issues
- Improved asset utilization
- Lower inventory and working capital
- Higher ROI on existing infrastructure

Strategic value

- Stronger operational resilience
- Foundation for automation and digitalization
- Standardized processes across the network
- Improved customer service and reliability
- Culture of continuous improvement

4. Service Scope

Included

- Current-state operational assessment
- Process mapping and waste analysis
- Lean maturity evaluation
- KPI and performance baseline
- Improvement plan and prioritized initiatives



- Kaizen workshops and coaching
- Standard work and visual management design

Optional

- 5S implementation program
- Transport route and load optimization
- Warehouse layout redesign
- Labor management and productivity tools
- Digital lean dashboards
- Training programs (Lean Yellow/Green Belt)
- Ongoing continuous improvement support

5. Operational Workflow

1. Discovery & data intake

- Collect operational, performance, and cost data
- Observe processes on the shop floor
- Identify pain points and bottlenecks

2. Analysis

- Value Stream Mapping (VSM)
- Waste identification (TIMWOOD)
- Root-cause analysis of key issues
- Baseline KPI assessment

3. Improvement design

- Develop standardized processes
- Define quick wins and long-term initiatives
- Create visual management and 5S plans
- Build labour and resource optimization models

4. Implementation

- Kaizen events and rapid improvement cycles
- Training and capability building
- Deployment of standard work and visual tools
- KPI dashboards and performance tracking

5. Sustain & scale

- Coaching and continuous improvement routines
- Governance and daily management systems
- Replication across sites or regions

6. Pricing Model



Common structures

- Fixed-fee operational improvement project
- Modular pricing by process area (warehouse, transport, planning)
- Subscription for continuous improvement coaching
- Optional training and certification packages

Cost drivers

- Operational complexity
- Number of sites and scope of processes
- Depth of analysis and improvement required
- Training and capability-building needs
- Duration of implementation support

7. Key KPIs

Efficiency

- Order cycle time
- Dock-to-stock time
- Picking productivity
- Transport utilization

Quality

- Error rate reduction
- Rework and returns
- Inventory accuracy

Cost

- Cost-per-order or cost-per-shipment
- Labor productivity
- Waste reduction impact

Flow & reliability

- On-time delivery
- Throughput improvement
- Process stability metrics

8. Risks & Challenges

- Resistance to change from frontline teams
- Lack of process discipline or standardization
- Poor data quality or missing KPIs



- Leadership misalignment
- Difficulty sustaining improvements without coaching

9. Differentiators

A. Practical, hands-on approach

- Shop-floor focus
- Rapid improvement cycles
- Real, measurable impact

B. Deep logistics expertise

- Tailored to warehouse, transport, and planning operations
- Proven Lean tools adapted to logistics environments

C. Capability building

- Coaching and training to embed Lean culture
- Tools and routines for long-term sustainability

D. Data-driven improvement

- KPI redesign and digital dashboards
- Root-cause analysis and structured problem solving

10. When Lean Logistics Is the Right Solution

- Operations are slow, inconsistent, or error-prone
- Costs are rising without clear drivers
- Processes vary across sites or teams
- You want to prepare for automation or digitalization
- Customer service levels need improvement
- You want a culture of continuous improvement
- You need fast, measurable operational impact



11.4. Process Design – SOP Creation

Definition:

Process Design & SOP Creation is a structured methodology for defining, documenting, and standardizing logistics and supply-chain processes.

It ensures that every activity is executed consistently, efficiently, and in compliance with operational, regulatory, and customer requirements.

SOP Creation is the foundation of operational excellence, enabling stable processes, clear responsibilities, and scalable performance across sites and teams.

1. Product Description

Process Design & SOP Creation maps, analyses, and documents logistics processes into clear, actionable Standard Operating Procedures (SOPs).

It ensures alignment between people, systems, and workflows while embedding best practices and compliance requirements.

Core capabilities

- End-to-end process mapping (warehouse, transport, planning, customer service)
- SOP creation, documentation, and version control
- RACI and role definition
- Process standardization across sites or regions
- Compliance alignment (ISO, GDP, safety, quality)
- Visual work instructions and process flows
- KPI definition and performance linkage
- Training materials and onboarding packages
- Governance and change-management framework

Typical use cases

- Standardizing operations across multiple warehouses or countries
- Preparing for audits, certifications, or customer requirements
- Supporting new system implementations (TMS, WMS, ERP)
- Reducing process variability and errors
- Onboarding new employees or 3PL partners
- Designing new logistics processes or services

2. Customer Segments

Ideal for organizations seeking consistency, compliance, and operational stability.

Best fit customers

- Manufacturers (automotive, aerospace, industrial)
- Retailers and e-commerce companies



- 3PLs and logistics service providers
- Pharma and medical supply chains
- FMCG and consumer goods companies
- Spare parts and aftermarket operations

3. Value Proposition

Operational value

- Clear, standardized processes across teams and sites
- Reduced errors, rework, and variability
- Faster onboarding and training
- Improved compliance and audit readiness
- Better alignment between operations and systems

Financial value

- Lower operational costs through reduced waste
- Fewer quality issues and customer complaints
- Improved productivity and resource utilization
- Reduced downtime during transitions or system changes

Strategic value

- Strong foundation for automation and digitalization
- Supports scalability and network expansion
- Enhances customer trust and service consistency
- Enables continuous improvement and performance management

4. Service Scope

Included

- Current-state process mapping
- Gap analysis and improvement recommendations
- SOP creation (text, flowcharts, visuals)
- RACI and role definition
- KPI alignment and performance framework
- Document library and version control setup
- Training materials and rollout support

Optional

- Visual work instructions (photos, diagrams)
- Digital SOPs integrated into WMS/TMS/ERP
- ISO/GDP/GMP compliance alignment
- Multi-language SOP creation



- Process simulation and digital twin modelling
- Continuous improvement coaching
- Audit preparation and certification support

5. Operational Workflow

1. Discovery & data intake

- Collect existing procedures, documents, and KPIs
- Observe operations on the shop floor
- Identify gaps, risks, and inconsistencies

2. Process mapping

- Create detailed process flows (BPMN, swimlane diagrams)
- Identify handovers, bottlenecks, and failure points
- Align with system workflows (TMS, WMS, ERP)

3. SOP creation

- Draft clear, step-by-step procedures
- Define roles, responsibilities, and controls
- Add visuals, checklists, and templates
- Validate with operational teams

4. Implementation

- Rollout training and onboarding
- Deploy SOPs across teams and sites
- Integrate into digital systems or document platforms

5. Sustain & improve

- Establish governance and version control
- Monitor KPIs and compliance
- Update SOPs based on continuous improvement

6. Pricing Model

Common structures

- Fixed-fee project per process area
- Modular pricing (warehouse, transport, planning, customer service)
- Subscription for ongoing SOP updates and governance
- Optional training and certification packages

Cost drivers

- Number of processes and complexity
- Level of detail required (basic vs visual SOPs)



- Number of sites and languages
- Compliance requirements (ISO, GDP, GMP)
- Integration with digital systems

7. Key KPIs

Quality & compliance

- SOP adherence rate
- Audit findings reduction
- Error and deviation rate

Efficiency

- Process cycle time
- Training time reduction
- Rework and waste reduction

Consistency

- Standardization across sites
- Process variation reduction
- Onboarding success rate

8. Risks & Challenges

- Lack of process ownership
- Resistance to new procedures
- Poor documentation discipline
- Misalignment between systems and processes
- SOPs becoming outdated without governance

9. Differentiators

A. Clarity & usability

- Simple, visual, and actionable SOPs
- Designed for frontline teams, not just auditors

B. Logistics expertise

- Tailored to warehouse, transport, and planning operations
- Best practices embedded into every process

C. Compliance-ready

- Alignment with ISO, GDP, GMP, and customer requirements
- Audit-ready documentation and controls

D. Scalable & digital



- Multi-site, multi-language capability
- Integration with digital platforms and automation tools

10. When SOP Creation Is the Right Solution

- Processes vary across teams or locations
- Errors, rework, or quality issues are increasing
- You are preparing for audits or certifications
- New systems or tools require updated procedures
- You want faster onboarding and training
- You need a stable foundation for automation or Lean initiatives
- You want consistent, reliable, and scalable operations



11.5. Operational – Training – Operational Training

Definition:

Operational Training is a structured capability-building program designed to equip logistics teams with the skills, knowledge, and behaviours required to run high-performing operations.

It focuses on practical, hands-on learning across warehouse, transport, planning, and customer service functions to ensure consistent execution, safety, quality, and efficiency.

Operational Training is the backbone of workforce excellence, enabling teams to perform reliably, confidently, and in alignment with best-practice logistics standards.

1. Product Description

Operational Training develops frontline and supervisory competencies through standardized training modules, practical exercises, and performance assessments. It ensures that employees understand processes, systems, safety requirements, and customer expectations.

Core capabilities

- Role-based training programs (warehouse, transport, planning, customer service)
- On-the-job training (OJT) and coaching
- SOP-based training aligned with process design
- Safety, quality, and compliance training
- System training (WMS, TMS, scanners, handhelds)
- Skills certification and competency assessments
- Train-the-trainer programs
- Digital learning modules and micro-learning
- Performance tracking and training dashboards

Typical use cases

- Onboarding new employees or temporary staff
- Upskilling teams after process or system changes
- Standardizing operations across multiple sites
- Reducing errors, accidents, or quality issues
- Preparing teams for automation or digitalization
- Supporting 3PL transitions or new customer launches

2. Customer Segments

Ideal for organizations that rely on skilled frontline teams and require consistent, safe, and efficient operations.



Best fit customers

- Manufacturers (automotive, aerospace, industrial)
- Retailers and e-commerce companies
- 3PLs and logistics service providers
- Pharma and medical supply chains
- FMCG and consumer goods companies
- Spare parts and aftermarket operations

3. Value Proposition

Operational value

- Faster onboarding and reduced ramp-up time
- Improved process adherence and consistency
- Fewer errors, accidents, and service failures
- Higher productivity and operational stability
- Better alignment between people, processes, and systems

Financial value

- Lower cost-to-serve through improved efficiency
- Reduced rework, claims, and quality issues
- Lower safety-related costs and downtime
- Improved labor utilization and flexibility

Strategic value

- Stronger operational resilience
- Scalable workforce capability across sites
- Supports digital and automation initiatives
- Enhances customer satisfaction and service reliability
- Builds a culture of continuous learning and improvement

4. Service Scope

Included

- Training needs assessment
- Role-based curriculum design
- SOP-aligned training modules
- Classroom, digital, and on-the-job training
- Competency assessments and certification
- Training materials, manuals, and checklists
- Performance tracking and reporting

Optional



- Train-the-trainer programs
- Multi-language training materials
- Safety and compliance certification (GDP, ISO, GMP)
- Digital learning platforms and micro-learning
- Simulation-based training (VR/AR optional)
- Leadership and supervisor development
- Continuous training governance and refresh cycles

5. Operational Workflow

1. Training needs analysis

- Assess current skills, gaps, and performance issues
- Review SOPs, KPIs, and operational requirements
- Define training priorities by role and process

2. Curriculum design

- Develop structured training modules
- Align with SOPs, systems, and safety standards
- Create materials, checklists, and assessments

3. Training delivery

- Classroom or digital instruction
- Hands-on practice and OJT
- System training (WMS, TMS, scanners)
- Safety and compliance modules

4. Assessment & certification

- Practical skills evaluation
- Written or digital tests
- Competency certification by role

5. Sustain & improve

- Refresher training cycles
- Training dashboards and KPI monitoring
- Continuous improvement and feedback loops

6. Pricing Model

Common structures

- Fixed-fee training program
- Per-module or per-role pricing
- Subscription for ongoing training and refreshers
- Optional digital learning platform fees



Cost drivers

- Number of employees and roles
- Training depth and complexity
- Number of sites and languages
- System training requirements
- Certification and compliance needs

7. Key KPIs

Training performance

- Training completion rate
- Competency assessment scores
- Onboarding time reduction

Operational impact

- Error rate reduction
- Productivity improvement
- Safety incident reduction

Consistency

- SOP adherence rate
- Process variation reduction
- Cross-site standardization

8. Risks & Challenges

- High turnover requiring continuous training
- Inconsistent training delivery across sites
- Lack of SOPs or outdated documentation
- Resistance to new processes or systems
- Limited time for training during peak operations

9. Differentiators

A. Practical, hands-on approach

- Real operations, real equipment, real scenarios
- Designed for frontline teams, not just theory

B. SOP-aligned

- Directly linked to process design and quality standards
- Ensures consistent execution across all sites

C. Scalable & flexible



- Multi-site, multi-language capability
- Modular curriculum adaptable to any operation

D. Data-driven

- Competency dashboards
- KPI-linked training impact measurement
- Continuous improvement loops

10. When Operational Training Is the Right Solution

- New employees or temps need fast onboarding
- Errors, accidents, or quality issues are increasing
- Processes vary across teams or locations
- New systems or automation require upskilling
- You want consistent, reliable, and efficient operations
- You need a scalable training framework for growth
- You want to build a culture of operational excellence

Bonus: Portfolio

Attractiveness Matrix

(Profitability & Growth)

Product Category	Profitability	Growth	Recommendation
Control Tower	★★★★★	★★★★★	Core offering
CO ₂ Reporting	★★★★	★★★★★	High growth
Pharma Logistics	★★★★★	★★★★	Premium niche
E-commerce Fulfillment	★★★	★★★★	Selective
FTL/LTL	★★	★	Only complementary
Returns Logistics	★★★★	★★★★	Very attractive
Battery Logistics	★★★★★	★★★★★	Future market



Last Word

As we reach the final pages of this book, it becomes clear that the transport and logistics sector is far more than a collection of products, systems, and technologies. It is a living ecosystem one that adapts, innovates, and evolves with every shift in global demand, every technological breakthrough, and every challenge that tests the resilience of supply chains.

The products explored throughout this work represent the building blocks of an industry that keeps the world connected. Yet their true value lies not only in their design or functionality, but in the people who use them, improve them, and imagine what comes next. Behind every pallet, platform, software module, or delivery vehicle stands a network of thinkers, planners, operators, and visionaries who ensure that goods move where they are needed, when they are needed.

If there is one message to carry forward, it is that logistics is not static. It is a field defined by continuous transformation. The products of today will become the foundations of tomorrow's innovations. The challenges we face whether environmental, technological, or operational will inspire new solutions that push the boundaries of what is possible.

My hope is that this book has sparked curiosity, encouraged reflection, and perhaps even inspired new ideas. Whether you are shaping strategies, designing systems, or simply seeking to understand the mechanisms that keep our world moving, your role in this evolving landscape matters.

The future of transport and logistics is being written every day. May the insights shared here serve as a stepping stone toward that future one built on knowledge, collaboration, and a commitment to progress.