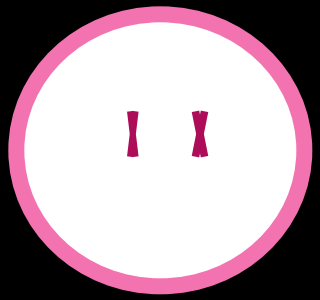
Cost Reduction Techniques in Logistics & Shipping

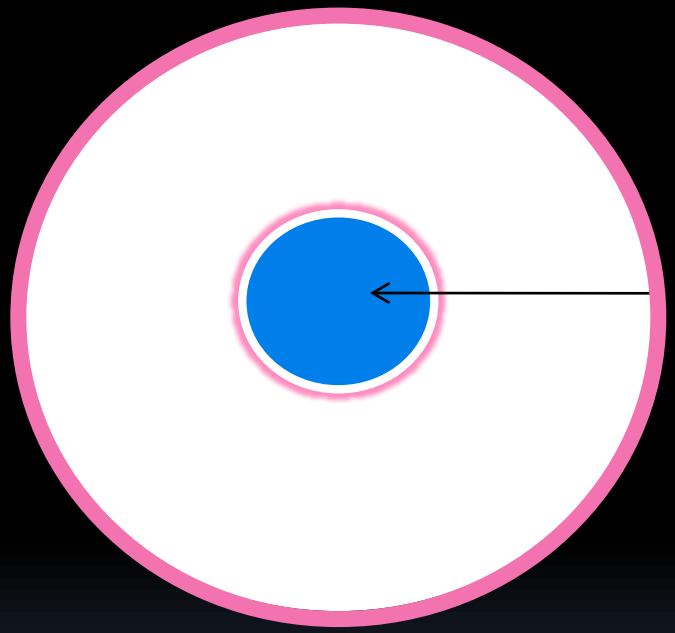
Local Trade (Localization)



Global Trade(Globalization)

- **Transportation**
- **Communication**

Logistics



Logistics

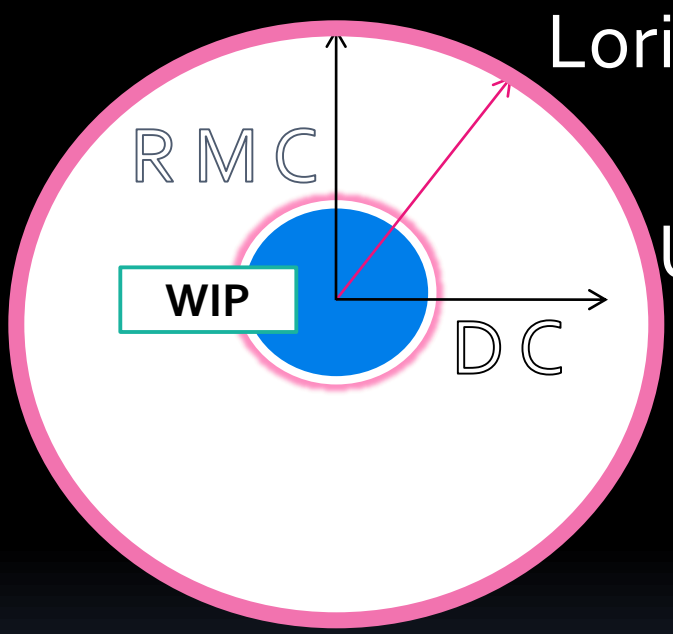
- Logistics means activities carried out simultaneously & Sequentially to achieve a desired goal in least possible TIME & at least COST

- Logistics involve the integration of Information, Transportation, Inventory, Warehousing, Material Handling & Packaging.

Logistics

- Logistics is the Geographical positioning of Raw Material, Work in Process & Finished Inventories at the least possible Cost.
- Logistics Expenditure Typically range from 5% to 35% depending on the type of Business.
- Logistics Costs once expended can not be Reversed.

Logistics

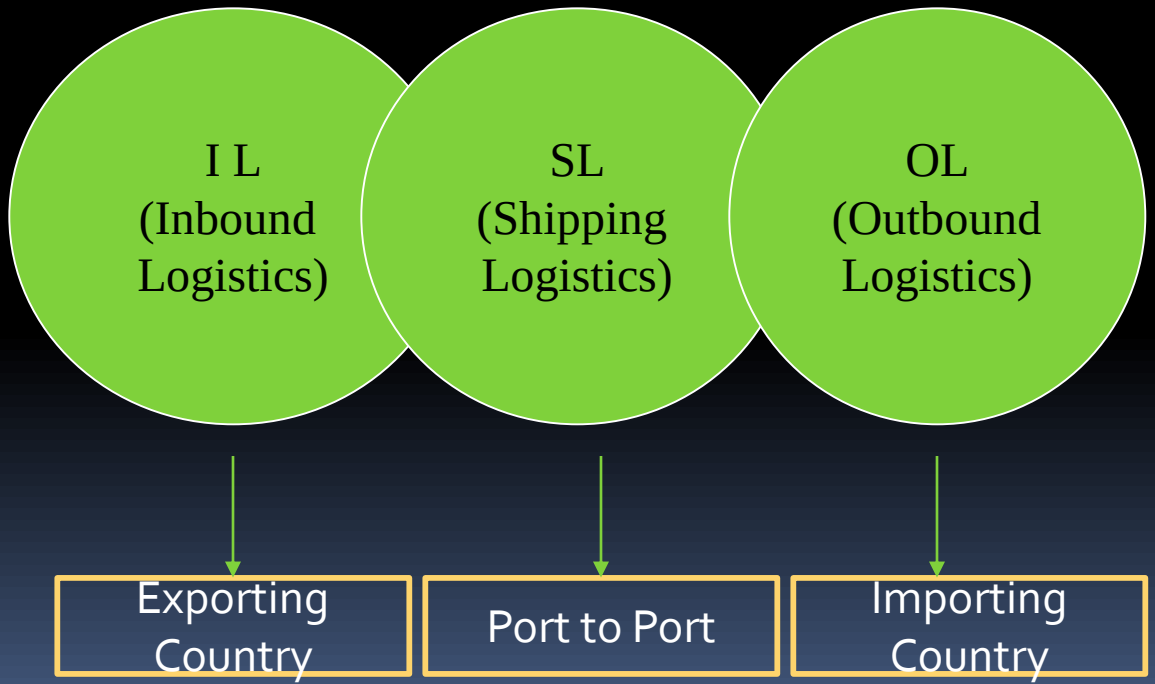


Lorino (Italy)

Ugine (France)

RMC-Raw Material Cost, WIP-Work in Process
DC- Distribution Cost

Export Logistics



Inbound Logistics

Pre-Shipment Stage

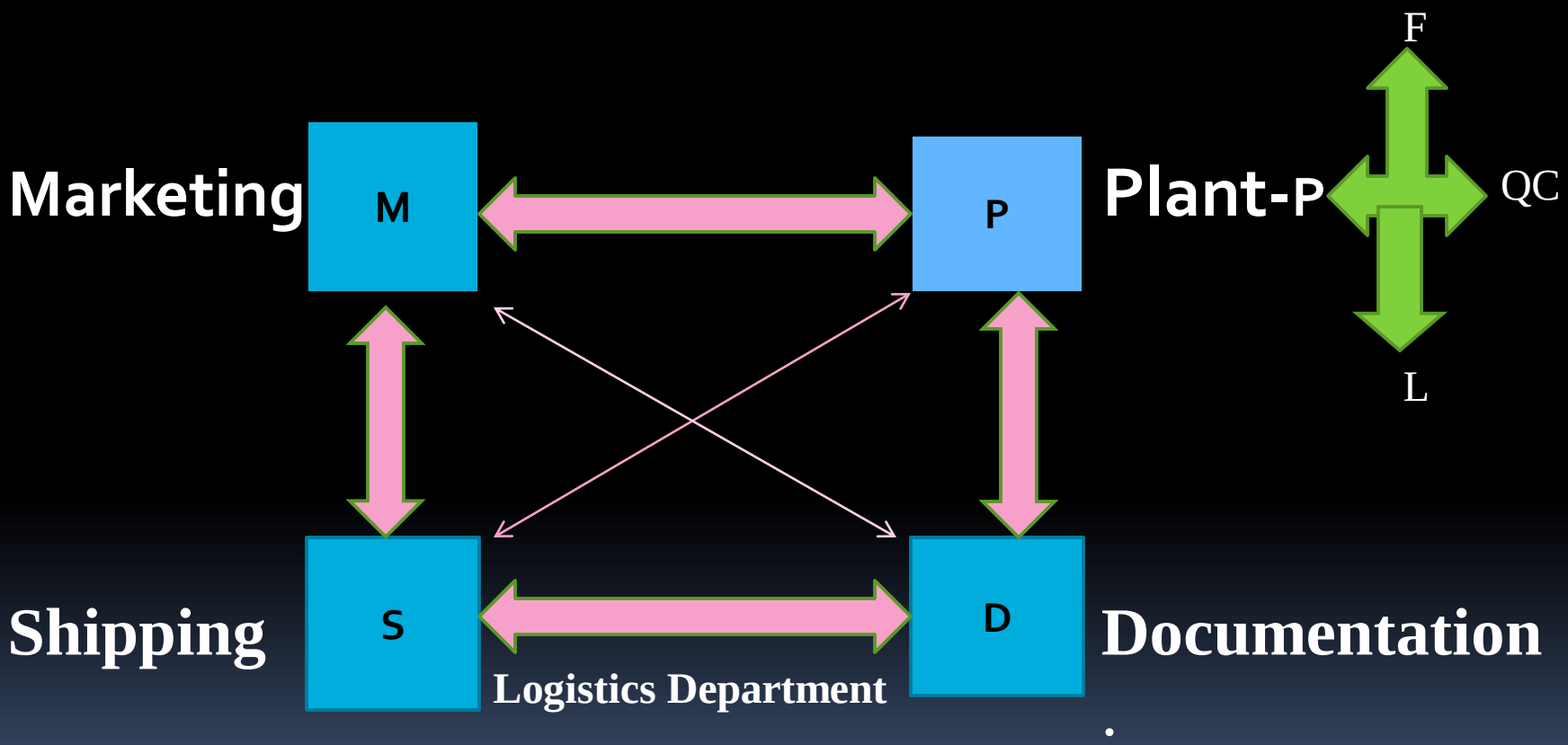
⬇

Shipment Stage

⬇

Post-shipment Stage

Pre-Shipment Stage



Pre-Shipment Stage

- Receipt of an Enquiry
- To send an Offer
- Receipt of Purchase Order
- To send Proforma Invoice
- Receipt of Letter of Credit (L/C)
- Arranging for Pre-shipment Finance
- Arranging for Manufacturing of Product
- Readiness of Product
- In House Quality Control Inspection
- Arranging for Pre-Shipment Inspection (If required)
- Arranging for Dispatch

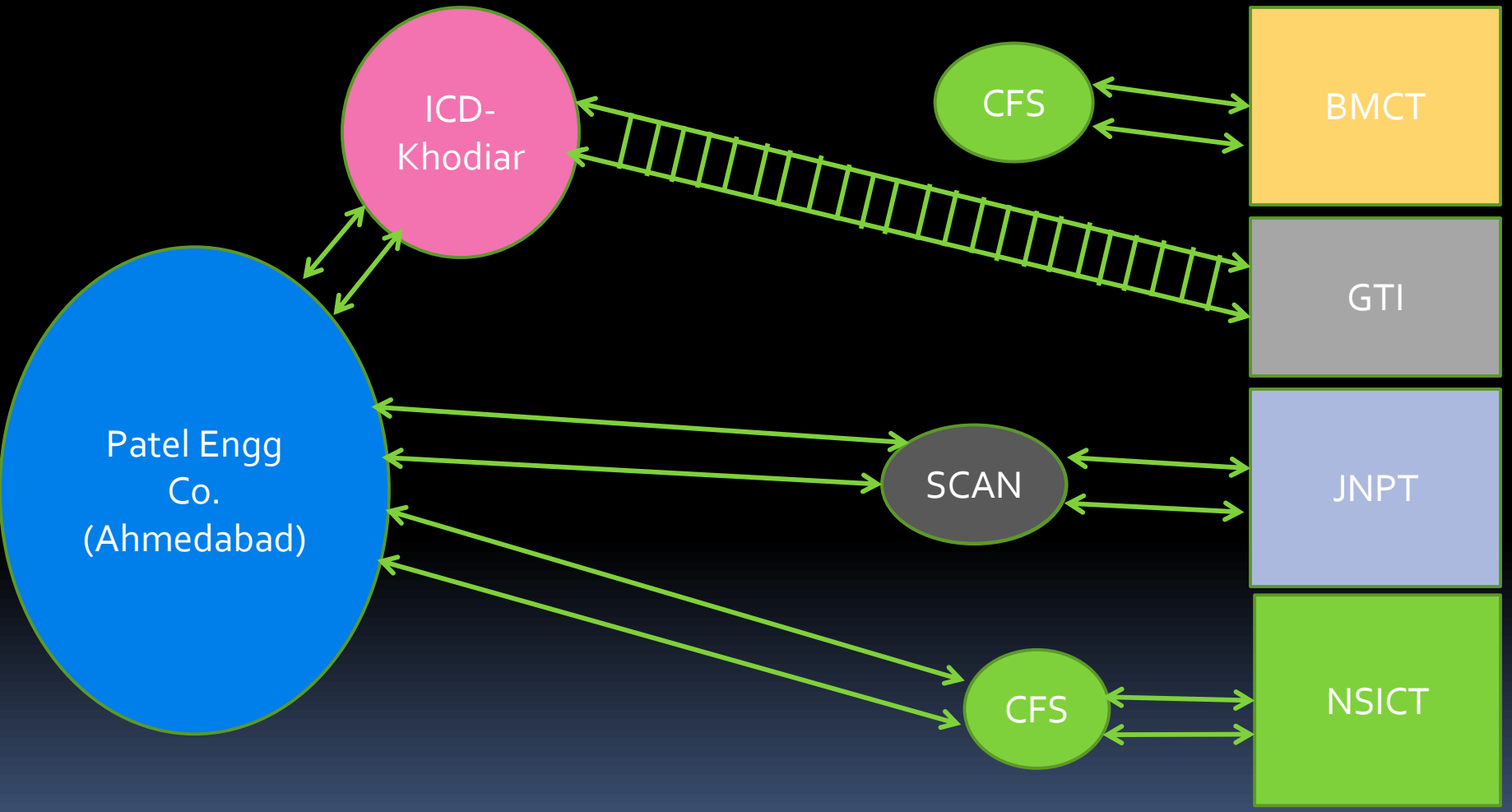
Shipment Stage

- Processing of Pre-Shipment Documents in Customs
- Unloading of Consignment at Convenient Sea Port
- Physical Examination of Consignment at Port (Dock Stuffing)
- Out of charge of Consignment by Customs Department
- Stuffing of Consignment at CFS/Port in case of "Dock Stuffing"
- Loading of consignment on Board

Shipment Stage

- Dock Stuffing
- Factory Stuffing
- Dock Stuffing-Inland Container Depot (ICD)
- Factory Stuffing-Inland Container Depot (ICD)

Shipment Stage



Cost & Time Benefit Analysis

Cost Analysis

Sr No.	Logistics Expenses	Dock Stuffing	Factory Stuffing	Factory Stuffing (ICD)
1	Inland Transportation -Road	34000	48000	3000
2	Inland Transportation-Rail	0	0	23000
3	Clearing Charges	3000	1500	2500
4	Dock Stuffing Charges	20000	0	0
5	Factory Stuffing Charges	0	6000	6000
6	THC	13000	11000	11000
7	Convenience Charges	0	0	3000
8	Repo siting Charges	0	0	0
9	Fumigation Charges	2000	1500	1500
10	Detention Charges-Transport	0	0	0
11	Detention Charges-Shipping line	0	0	0
	TOTAL.....	**72000**	**68000**	**50000**

Time Analysis

Sr No.	Activity	Dock Stuffing	Factory Stuffing	Factory Stuffing (ICD)
1	Despatch from Plant	25.01.2021(Mon)	25.01.2021(Mon)	25.01.2021(Mon)
2	Documentation	27.01.2021(Wed)	27.01.2021(Wed)	27.01.2021(Wed)
3	Arrival of consignment	27.01.2021(Wed)	27.01.2021(Wed)	27.01.22021(Wed)
4	Examination	28.01.2021(Thu)	28.01.2021(Thu)	27.01.2021(Wed)
5	Stuffing	30.01.2021(Sat)	-	-
6	Out of Charge	01.02.2021(Mon)	29.01.2021(Fri)	28.01.2021(Thu)
7	Rail out from ICD	-	-	28.01.2021(Thu)
8	Sailing Date	07.02.2021(Sun)	31.01.2021(Sun)	31.01.2021(Sun)
9	ETA Singapore	17.02.2021(Wed)	10.02.2021(Wed)	10.02.2021(Wed)
10	ETD Singapore	19.02.2021(Fri)	12.02.2021(Fri)	12.02.2021(Fri)
11	ETA Callao (Peru)	26.03.2021(Fri)	19.03.2021(Fri)	19.03.2021(Fri)
12	Total Transit Time	60 Days	53 Days	53 Days

Post Shipment Stage

- To Check loading of Consignment
- To send loading confirmation to Customer
- Processing & submission of Post-shipment documents in Bank
- To follow up for Payment & Claim Export Incentive from Government

Significance of Transport

- Connects regions of production to regions of Consumption
- Increases demand of Consumer Goods,
- Decreases Cost of Production
- Leads to dispersal of Population from a metropolitan city
- New areas are opened to the people & new markets for products

Choice of the Mode of Transport

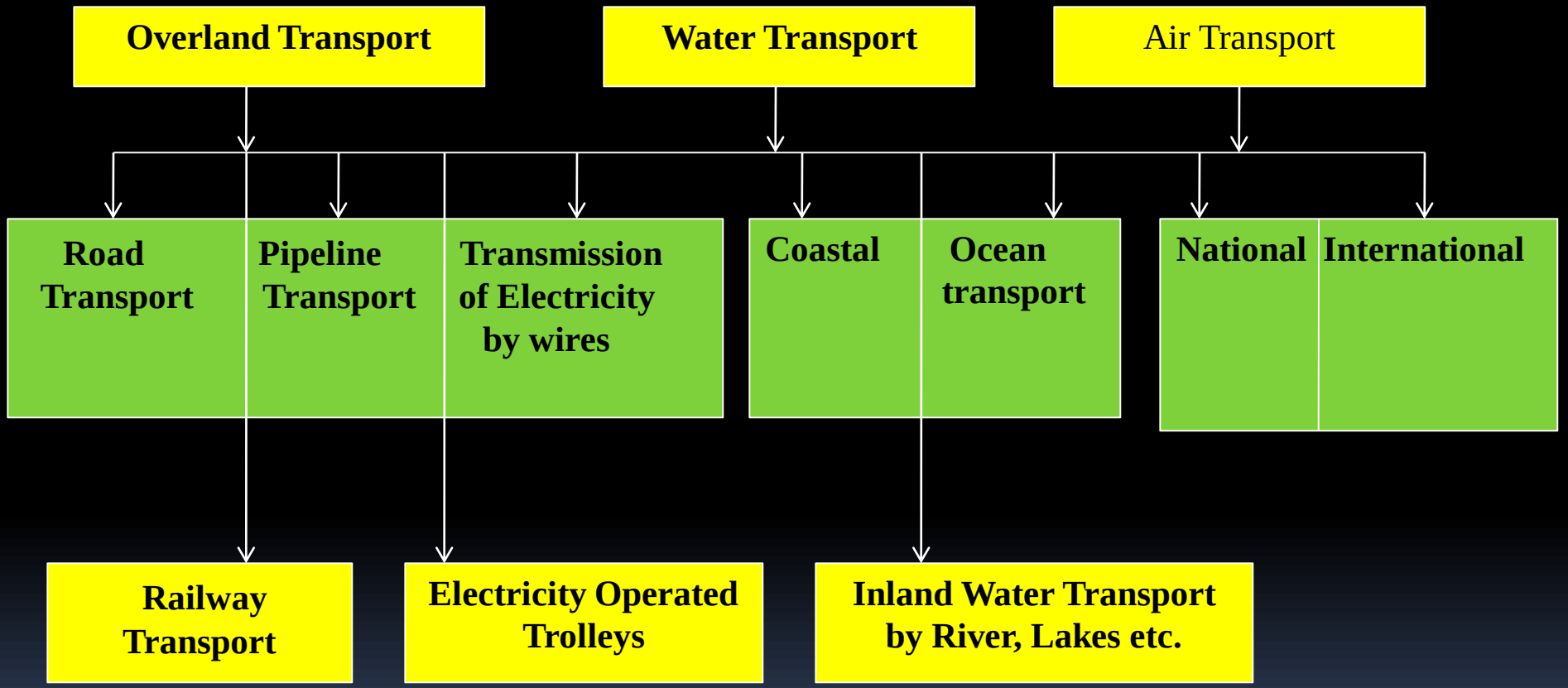
- Cost-Freight Charges
- Speed-Transit Time
- Carrying capacity
- Safety
- Location of Place of Origin & Place of Destination
- Type of Cargo

Global Commercial Geography

World Map


WORLD MAP
1. Cyprus
2. Lebanon
3. Guinea-Bissau
4. Guinea
5. Ghana
6. Togo
7. Benin
8. Cameroon
9. Equatorial Guinea
10. Rwanda
11. Cambodia
12. Panama
13. Malawi
14. Palestinian Territories
15. St. Vincent & the Grenadines
0 1,000 2,000 Miles
0 1,000 2,000 Kilometers

Means & Modes of Transport



Types of Maritime Cargo

General Cargo

Unitized Cargo

Break Bulk

Drums, bags, pallets, boxes
Lift-on/lift-off (1.0 day average port time)
7% of tonnage

Neo Bulk

Lumber, paper, steel, vehicles
Lift-on/lift-off, roll-on/roll-off (1.0 day average port time)
5% of tonnage

Containerized

Containers
Lift-on/lift-off (0.9 days average port time)
13% of tonnage

Bulk Cargo

Loose Cargo

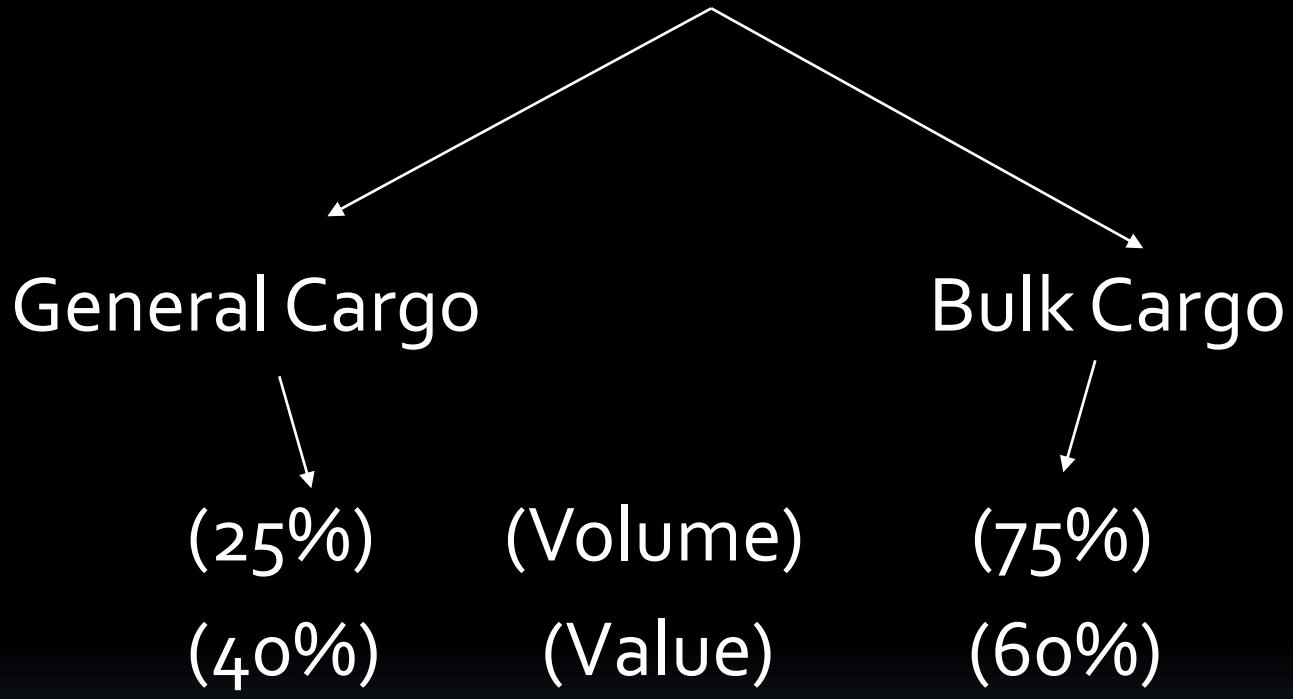
Liquid Bulk

Petroleum, LNG, chemicals, vegetal oils
Pumps and pipelines (1.1 to 1.3 days average port time)
35% of tonnage

Dry Bulk

Coal, iron ore, grains, bauxite, sand
Grabs / suction and conveyors (2.7 days average port time)
40% of tonnage

Types of Maritime Cargo



Types of Ships

- Bulk/Break Bulk Vessel
- Cellular/Container Vessel
- Ro-Ro Vessel
- Combi Vessel
- Tankers
- Lash Barge Ships

Bulk/Break Bulk Carrier

Cellular Vessel

Ro Ro Vessel

Chemical Carrier

Lash Barge Ship

Classification of Containers

- Steel Containers
- Aluminum Containers
- GRP Containers

Advantages of Steel Containers

- They are cheapest
- They can be more easily repaired compared to other types of Containers
- They can resist damage

Disadvantages of Steel Containers

- They can have an economic life of about 10 years
- They will have more Tare weight compared to other types of Containers
- They suffer by being more prone to corrosion

Types of Containers

- Normal Containers (G P Container)
- Special Types of Containers
  - Open Top Containers
  - Dry Bulk Containers
  - Reefer Containers
  - Flat Rack Containers
  - Hanger Containers
  - Cattle Containers
  - Tank Containers
  - Car Storage containers.

Size Of Containers

- 20′ -20′x7′x7 ′ = 22 mt = 33 cbm
- 40′ -40′x7′x7′ = 27 mt = 66 cbm
- 40′HC-40x′7′x91/2′ = 30 mt = 76 cbm
- 45′- for Pipes

- 20′ Containers are used for heavy weight Cargo
- 40′HC Containers are used for Light weight Cargo

Shipping Line Ranking

Sr No.	Carrier Name	Founded Year	Total Capacity (Teus) In Million	Total Container Ship
1	A.P MOLLAR	1904	4.1	590
2	M S C	1970	3.65	500
3	Cosco	1961	2.9	360
4	CMA CGM GROUP	1978	2.69	509
5	Hapag Lloyd	1970	1.68	355
6	ONE	2017	1.57	271
7	Evergreen Line	1968	1.3	200
8	Yang Ming Line	1972	0.64	101
9	PIL	1967	0.393	153
10	Hyundai Maritime	1976	0.392	130
11	ZIM Line	1945	0.28	80
12	Wan Hai Line	1965	0.265	72

Mergers & Acquisitions in Shipping

Sr No.	Name of Shipping Line	Name of Shipping Line	year Of Merger
1	A P Mollar	Maesrsk	2011/2017
		Safmarine	
		Hamburg Sud	
2	MSC	MSC	
3	Cosco	Cosco	2018
		OOCL	
4	CMA CGM	CMA CGM	2018
		APL	
5	Hapag Loyd	Hapag Loyd	2018
		UASC	
6	One	NYK	2017
		MOL	
		K Line	

Dry Container

Open Top Container

Reefer Container

Flat Rack Container

Flat Rack Container (Loaded with Cargo)

Tank Container

Car Storage Container

Advantages of Containerization

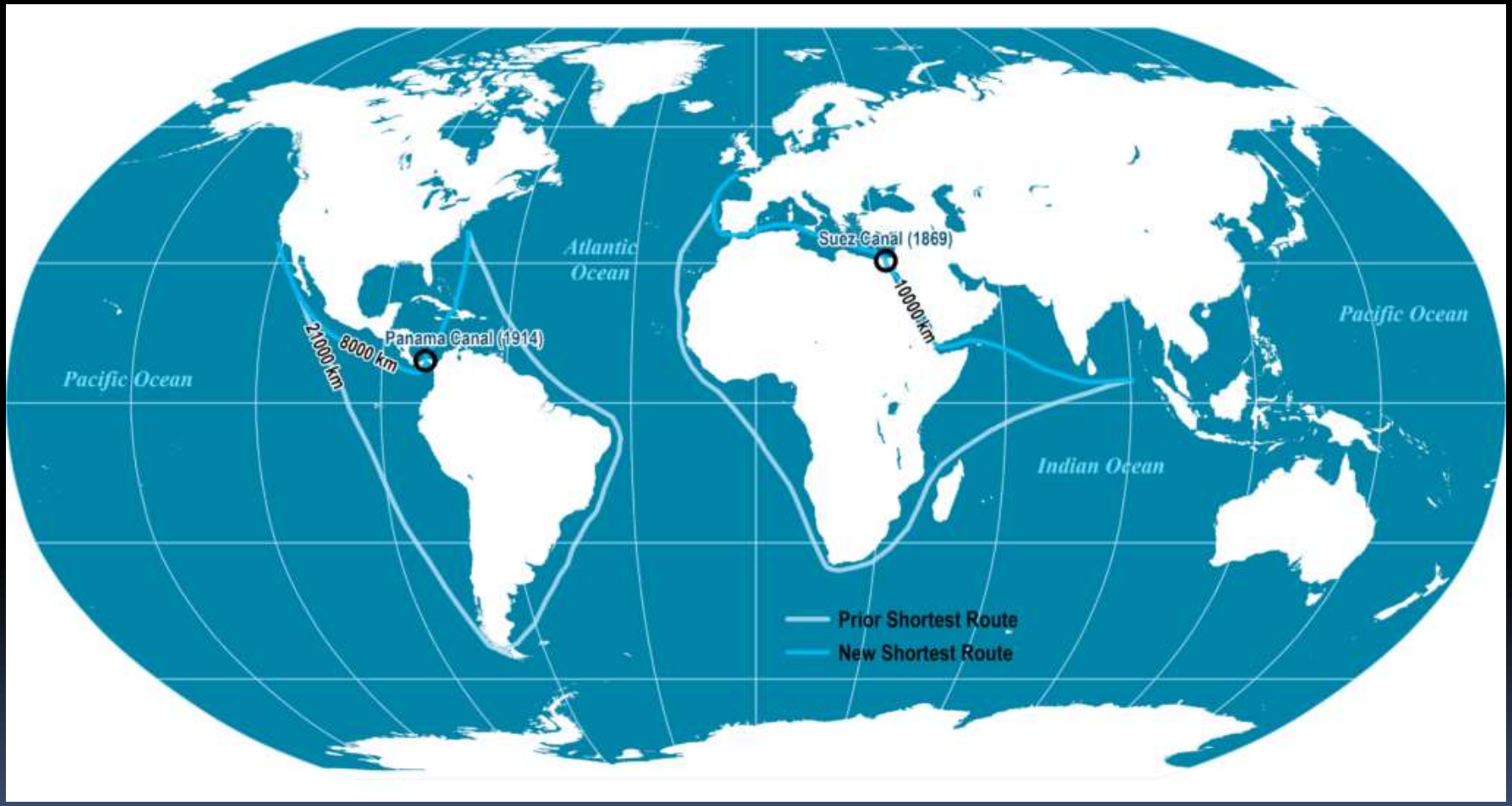
- Shipowners
  - Reduction in Port Time of Ships
  - Improved Working Ratio of Ships
- Shippers/Consignee
  - Reduction in Packing Cost
  - Reduction of Damage
  - Reduction in Marine Insurance Claim
  - Protection to Fragile Cargo
  - Reduction in Inland Transport Cost
  - Faster & Reliable Delivery
  - Retention of Original Quality.
  - Physical Separation of Dirty Cargo
  - Simplification of Documentation Procedure
  - Less Inventory Cost due to less Transit
  - Stable Inventory Control due to Stabilized Delivery Schedule

World Ocean Routes

- North Atlantic Route
- Mediterranean-Asiatic Route(Suez Canal Route)
- Cape of Good Hope Route
- North West Europe to South America Route
- Panama Canal Route
- Trans Pacific Route

World Ocean Routes

Suez & Panama Canal Route



Types of Costs in Export

[1] Production Cost

- Fixed Costs
- Variable Costs

[2] Selling & Distribution Costs

[A]Fixed Costs

- Salary Export Department
- Sales Promotion Expenses

Types of Costs in Export

[B] Variable Costs

- Export Packaging Cost
- Inland Freight (Plant to Port)
- Clearing Charges (Loading Port)
- Port Charges (CFS &/or ICD)
- Ocean Freight
- THC & Port Charges (Shipping Line)
- Documentation charges

Types of Costs in Export

[B] Variables Costs

- Insurance
- Clearing Charges (Unloading Port)
- Handling Charges (Unloading Port)
- Overseas/Inland Haulage (Destination Transportation)
- Warehousing Cost
- Custom Duty/Vat (Destination
- Commission /Service Charges to Export House by Merchant Exporter
- Commission to Overseas Agents

Logistics Planning

- A plan is a predetermined course of action to achieve a specified goal. It is an intellectual process characterized by thinking before doing. It is an attempt on the part of manager to anticipate the future in order to achieve better performance. Planning is the primary function of management.

Logistics Planning

- Logistics Planning process is entirely different than Domestic planning Process. The Exporter/Importer today is interested in accurate delivery Schedule rather than ad hoc delivery Schedule. To overcome this he is compelled to do Backward Planning rather than forward Planning for which it requires some basic tools.

Logistics Planning

TOOLS

- World Route Map
- Calendar- Depicting 3 Months(PM/CM/NM)
- Calendar- Customs/Dock Holiday list
- Page a Day- Diary
- Services of Shipping Lines & Routes
- Destination wise tentative Transit Time
- Communication Tools

Inventory Management

- Effective use of PPC for Inbound/Outbound Cargo
- Coordination between Marketing/Plant/Logistics department.
- Speedy turnaround of Inventory
- Reduction of Dead Finished Goods Inventory
- Close monitoring of Inventory at all levels

Warehousing

- Selection of Warehouse location for Inbound /Outbound Cargo
- Selection of Private/Public/Contract Warehousing
- MHE selection in case of Private Warehousing
- Value added Warehousing
- Optimum utilization of Warehouse Space

Ocean Freight Monitoring

- Selection of Shipping line
- Route Planning & Selection of Port
- Ongoing Negotiation of Ocean Freight
- Conversion of Open Top Containers to Normal Container
- Maximum utilization of Container Space
- Usability of 20’ vs 40’ Cont & combination

Parameters for selecting Shipping Line

- Ocean Freight
- Transit Time
- Transshipment –Direct Line Preferred Or Minimum Transshipment
- Frequency Of Vessels From Loading Port &/Or Transshipment Ports
- Availability of Containers at ICD
- Availability Of Space
- Availability Of Special Equipments. Eg. “Open Top, Reefers, Flat Rack Etc
- After Shipment Service

Parameters for selecting Shipping Line

- Update On Services
- Door To Door Services
- Maximum Free days at Loading & Destination Port
- Customer's preferred Shipping line
- Warehousing.- At Destination Companies Like Apl And Maersk Provide These Services
- Comprehensive Network (Cooperation Between All Regional Offices)

Inland Freight

- Selection of Mode of Transport
- Consolidation
- Preference to usage of ICD
- Maximum use of Carrier Space
- Control on Detention charges by proper planning
- Annual Contract thru Bidding

Clearing Charges

- Selection of CHA
- Timely Dispatch information to CHA for Shipping Bill filling
- Proper Coordination with CHA for Timely Shipment
- Optimum use of CHA Resources
- Data Sharing for Speedy Clearance

Port Charges.

- Selection of type of Stuffing
- Direct Container Gate-in
- On Wheel examination
- Better Coordination with Transporter, CHA & Shipping line
- Speedy Clearance & Stuffing of Containers
- Minimize Storage Charges

Role OF Information Technology

- Database Management
- Integration of Data
- Speed
- Accuracy
- Customized Report
- Sharing of Information with Vendors.
- Develop Reports from Vendors as per your requirement

Others

- Selection of Logistics Vendors.
- 3 PL/4 PL
- Inco terms as Cost Cutting Techniques.
- Selection of an appropriate Port for DDP deliveries
- Utilization of Tolerance limits (+/- 10%)
- Shipment of Tail end qty of Order
- Leasing of Containers in case of Re-import of Export Cargo

Others

- Tying up with Shipping line for EXIM business Automate compliances process
- Get Creative ideas – Don’t rely on single mode. (Be flexible)
- Keep Customer Happy

Inco terms

- INCOTERMS are Trade terms which clearly defines rights & obligation of Buyers & Sellers, Costs & Risks borne by them & also the place where the responsibility of Buyers & Sellers get divided.
- They help traders avoid costly misunderstandings by clarifying the tasks, costs and risks involved in the delivery of goods from sellers to buyers.

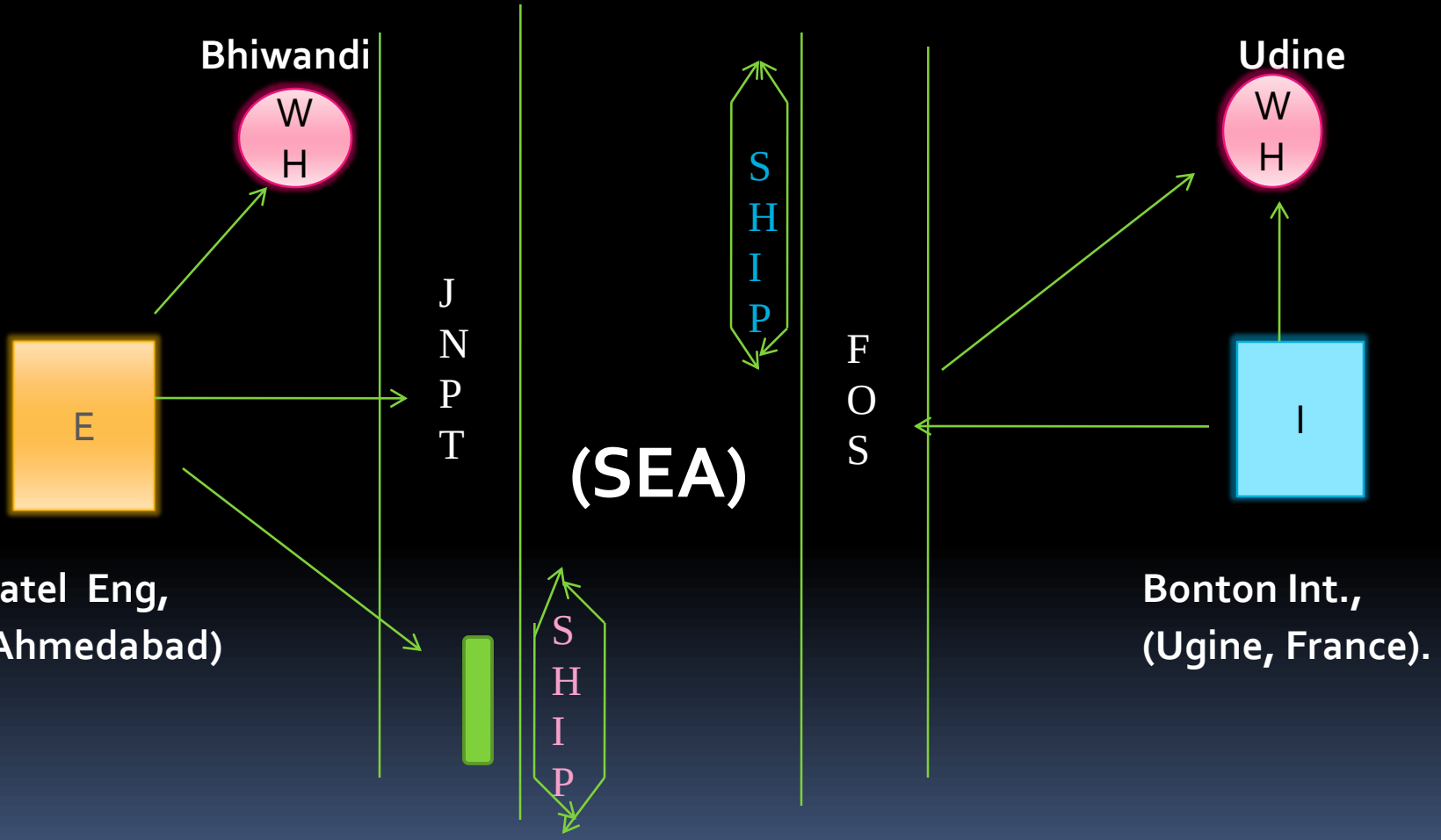
Inco terms

- The rules have been developed and maintained by experts and practitioners brought together by ICC in 1936 and have become the standard in international business rules setting.

Inco terms'2010

Group E:	EXW	Ex works (…. Named Place of Seller)
Group F:	FCA	Free Carrier (…Named Place)
	FAS	Free alongside ship (… Named port of Shipment)
	FOB	Free on Board (…. Named port of Shipment)
Group C:	CFR	Cost & freight (…. Named port of Destination)
	CIF	Cost, insurance & freight (…. Named port of Destination)
	CPT	Carriage paid to (…. Named place of Destination).
	CIP	Carriage & Insurance Paid to (…. Named place of Destination)
Group D	DAT	Delivered at Terminal (…named terminal at port or place of Destination)
	DAP	Delivered at Place (…. Named place of Destination)
	DDP	Delivered Duty paid (…. Named place)

Inco terms'2010



Inco terms'2020

Group E:	EXW	Ex works (…. Named Place of Seller)
Group F:	FCA	Free Carrier (…Named Place)
	FAS	Free alongside ship (… Named port of Shipment)
	FOB	Free on Board (…. Named port of Shipment)
Group C:	CFR	Cost & freight (…. Named port of Destination).
	CIF	Cost, insurance & freight (…. Named port of Destination)
	CPT	Carriage paid to (…. Named place of Destination).
	CIP	Carriage & Insurance Paid to (…. Named place of Destination).
Group D	DAP	Delivered at Place (…. Named place of Destination)
	DPU	Delivered at Place Unloaded (…named Place of Destination)
	DDP	Delivered Duty paid (…. Named place)

Major changes in Inco terms 2020

- New Inco term® DPU Replaces DAT
- Different level of insurance cover between CIF and CIP
- Updated Costs and Listings
- Increased Security Requirements.
- Allocations and Costs
- Buyer's and Seller's Own Transport
- FCA, FOB and the Bill of Lading Process

Price Sheet based on Inco terms

Sr No.	Particularts	Total Price	Price per pc.
1	Cost of Raw Material	10000	`10
2	Cost of Labour	5000	5
3	Overhead	3000	3
	PRIME COST	**18000**	**18**
4	Packing Cost	2000	2
	EXW COST	**20000**	**20**
5	Profit	4000	4
	EXW PRICE	**24000**	**24**
6	Inland Freight	1000	1
7	CHA	100	0.10
	FOB PRICE	**25100**	**25.10**
8	Ocean Freight	1000	1
	CFR PRICE	**26100**	**26.10**

Price Sheet based on Inco terms

Sr No.	Particularts	Total Price	Price per pc.
B/F	**CFR PRICE**	**26100**	**26.10**
9	Insurance	100	0.10
	CIF PRICE	**26200**	**26.20**
10	Overseas Haulage	600	0.60
11	Custom Clearance	200	0.20
12	Import Duty	2000	2.00
	DDP PRICE	**29000**	**29.00**

Choosing an Appropriate Inco terms

- Small Exporter Exporting to Big Customer should opt for EXW
- Big Exporter Exporting to Small Customer should opt for DDP
- Large Importers having Global Tie up with Shipping Co. should opt for FOB
- Split the terms in case of DAP & DDP Shipments
- Compare Logistics Cost With 3 PL & Select an INCOTERM
- Large Exporters will always prefer to offer their Bye Products to customers on EXW term

Selection of an appropriate Port for Final Destination Delivery

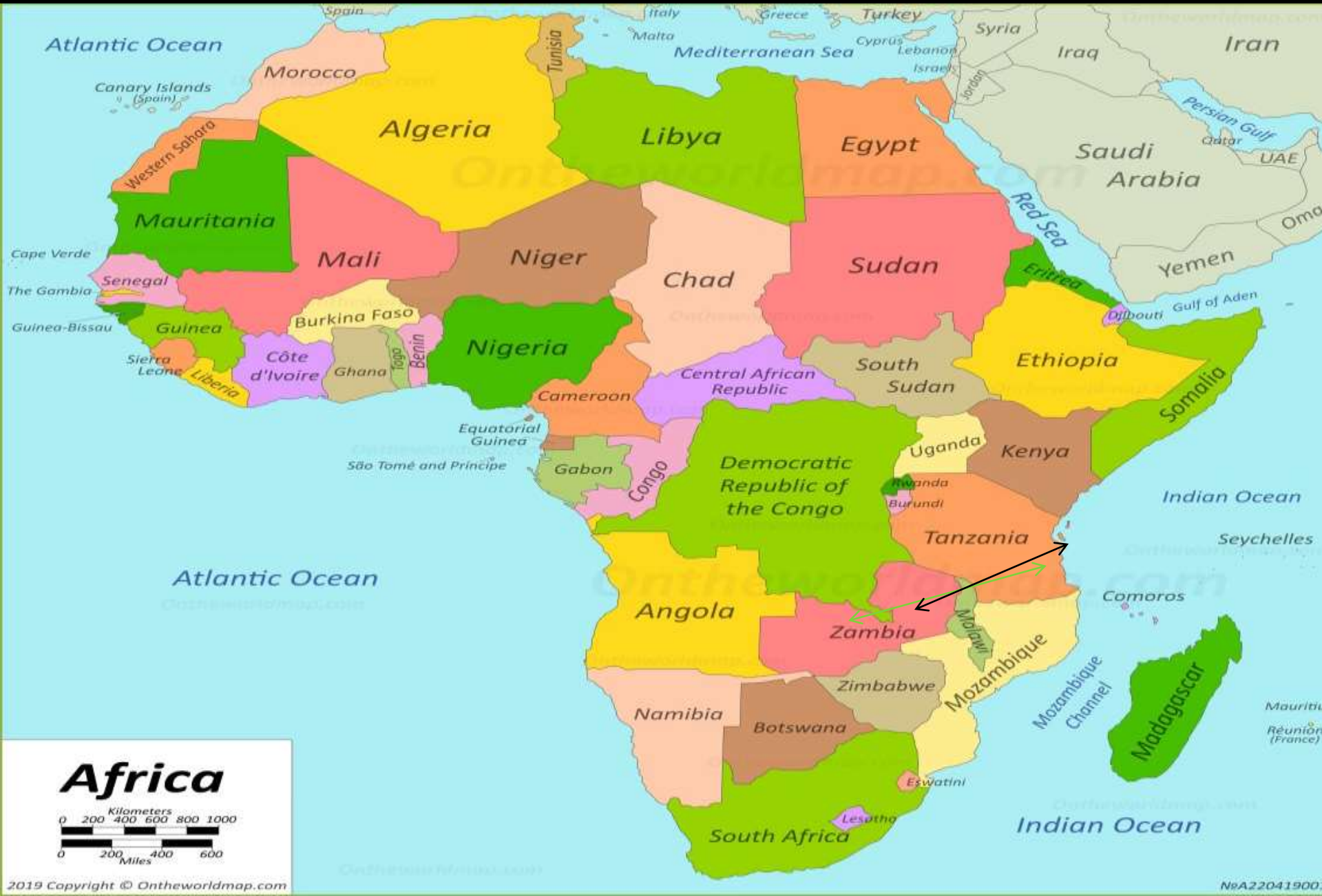
No.	Final Destination	Port	Country	Mode Of Transport
1	Canada	Baltimore	USA	Road
2	France	Antwerp	Belgium	Road
3	Venezuela	Antwerp	Belgium	Sea
4	Czech Republic	Hamburg	Germany	Rail/Road
5	Austria	Hamburg	Germany	Road
6	Mexico	Baltimore	USA	Road
6	Zambia	Dar es salaam	Tanzania	Road
7	Zimbabwe	Beira	Mozambique	Road
8	Zimbabwe	Durban	South Africa	Rail/Road
9	Hungary	Koper	Solvenia	Rail
10	Uganda	Mombasa	Kenya	Rail/Road

Europe (Antwerp to France)

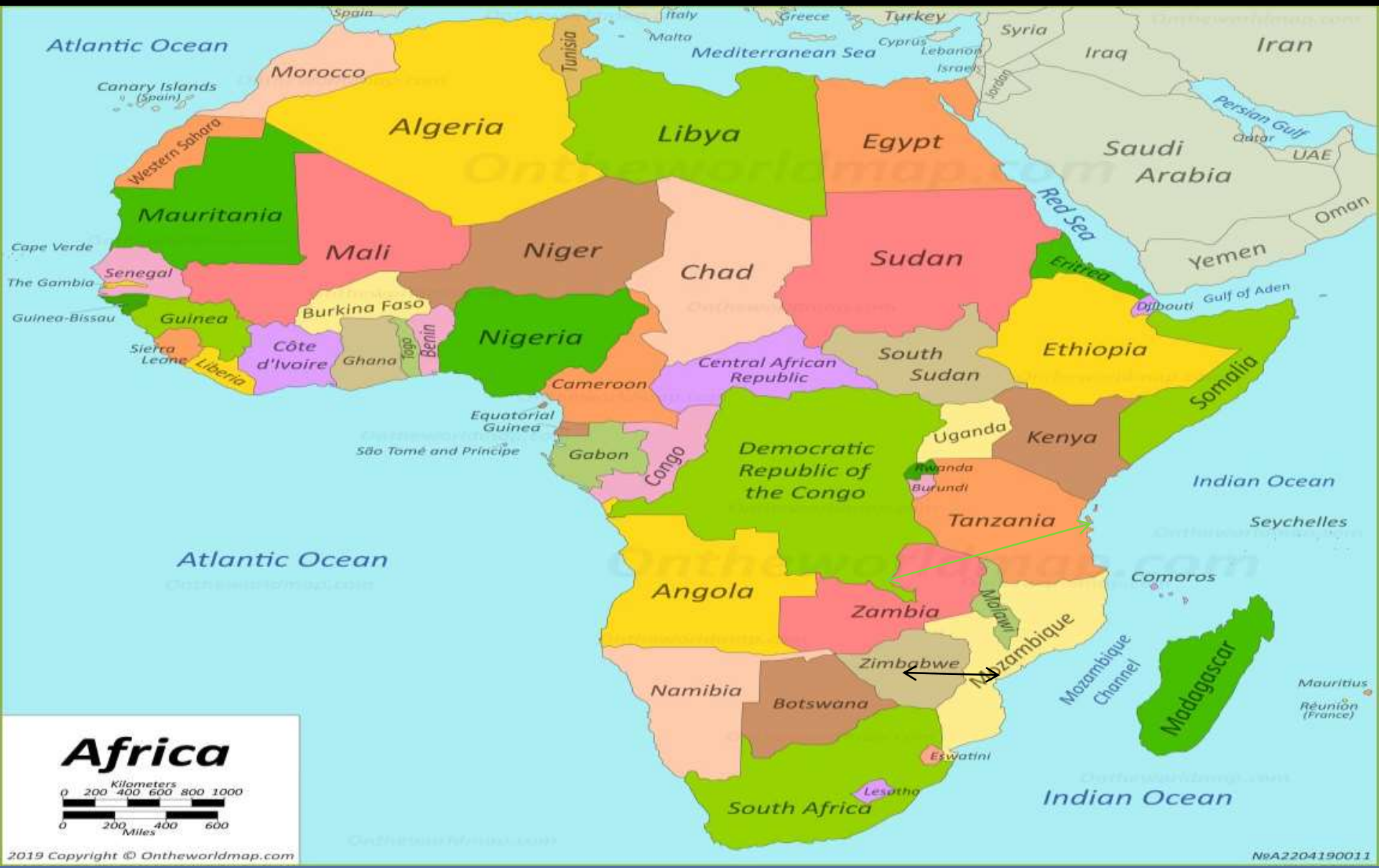
Europe (Hamburg to Czech Republic)

Europe (Hamburg to Austria)

Africa (Dar es Salaam to Zambia)

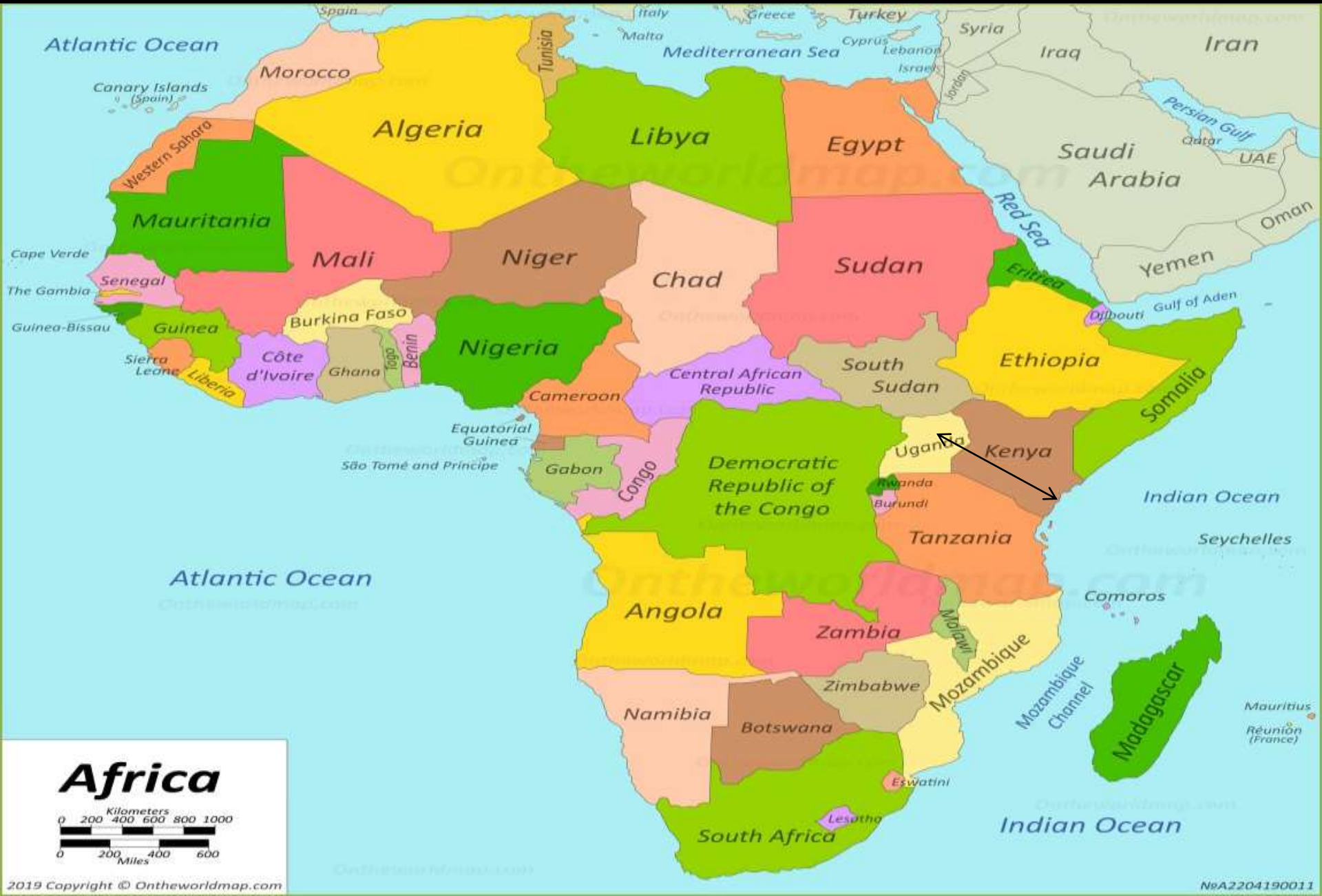


Africa (Beira to Zimbabwe)



Africa (Durban to Zimbabwe)

Africa (Mombasa to Uganda)



Customer Expectations related to Logistical Performance

- Reliability
- Responsiveness
- Access
- Communication
- Credibility
- Security
- Courtesy
- Competency
- Tangibles
- Knowing the Customer
- Deliverance

THANK YOU