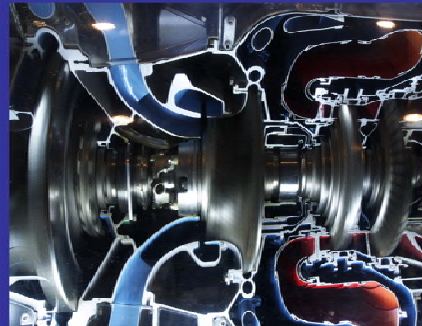


Boston Strategies International, Inc.
Rome, Italy
March 2008



Global Infrastructure Series



Global Supply Chain Management: Gioia Tauro

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Summary

- **Trade Patterns and Trends**
 - Centrally positioned to three markets
 - Substantial trade with Germany and France
 - Consistent growth, especially at Gioia Tauro
 - Italy – one country, three regions
 - Competitive on exports with Europe
- **Role of Port of Gioia Tauro**
 - A trans-shipment hub
 - Steadily rising freight volume
 - Gioia Tauro serves an international market
 - 24th largest port in the world
 - Gioia Tauro rising with other European Ports
 - A deep-draft port for Italy
 - Well equipped
 - Cost advantage for certain inland destinations
- **Development and Investment**
 - High-speed rail network
 - Railway infrastructure
- **Managing Shipments Into/Out of Italy**
 - Carriers Serving Gioia Tauro
 - Inland Rail Network
 - Inland Road Network



Trade Patterns and Trends



Centrally positioned to three markets

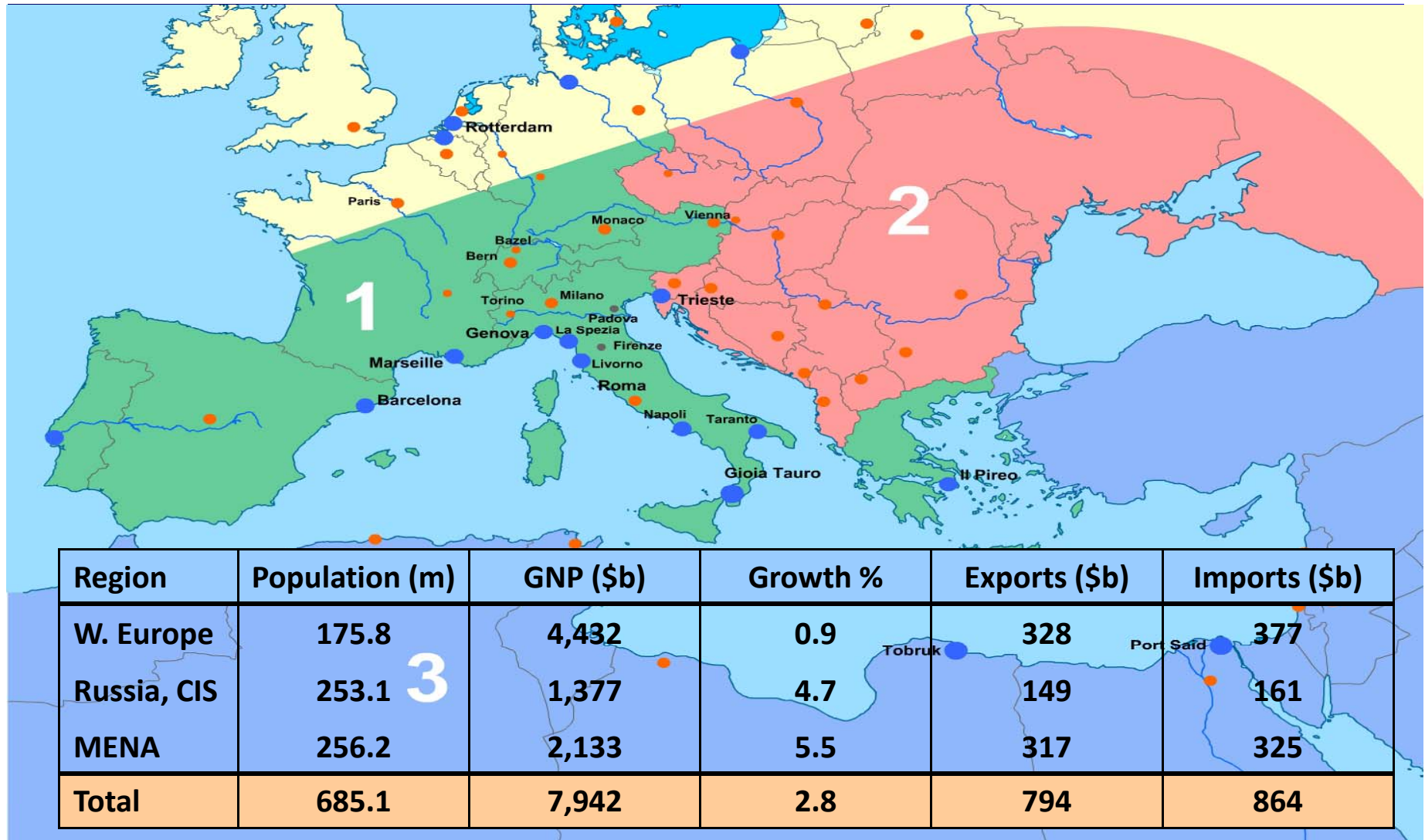
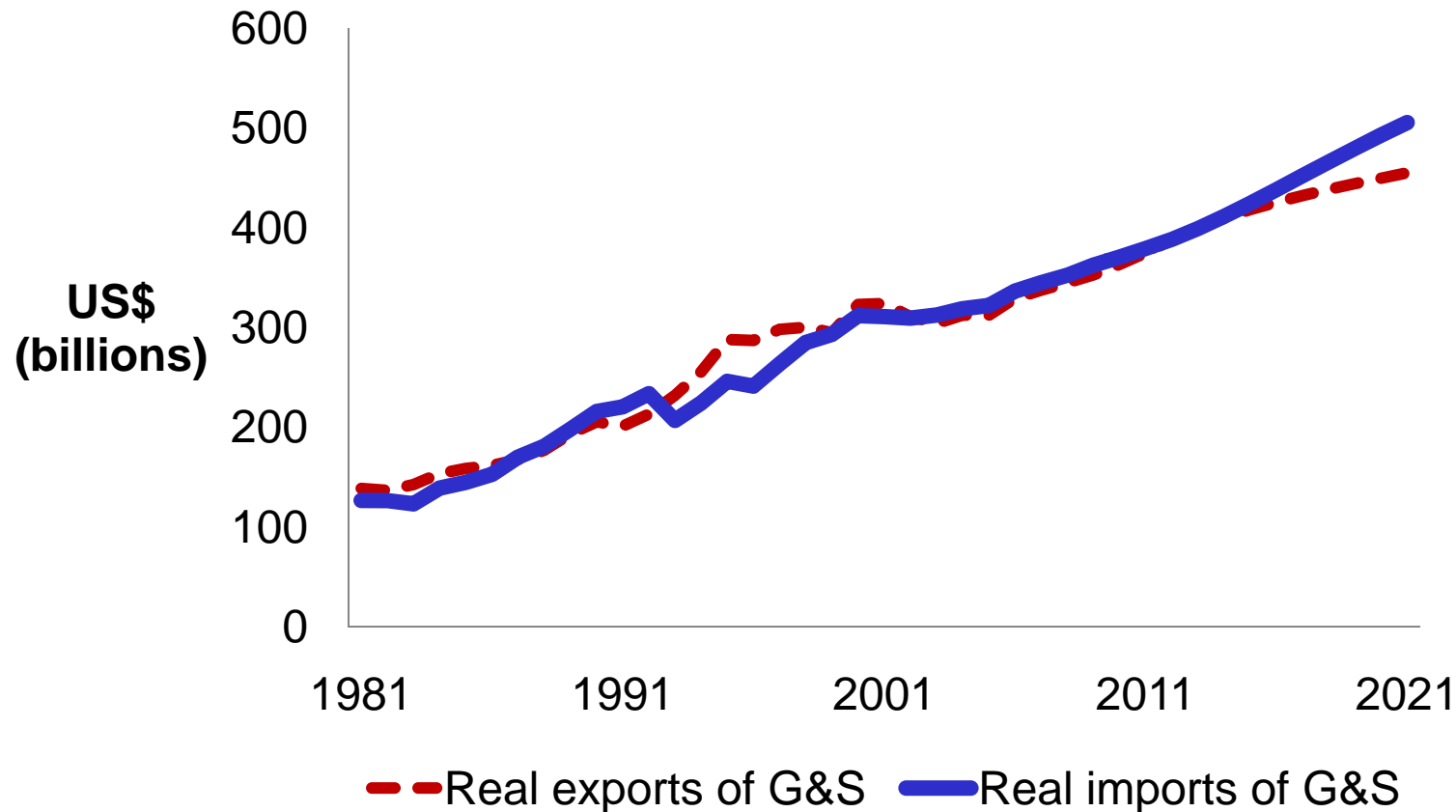


Image source: Trans-European Network



Consistent and balanced trade growth

Italy Export & Imports 1981-2021

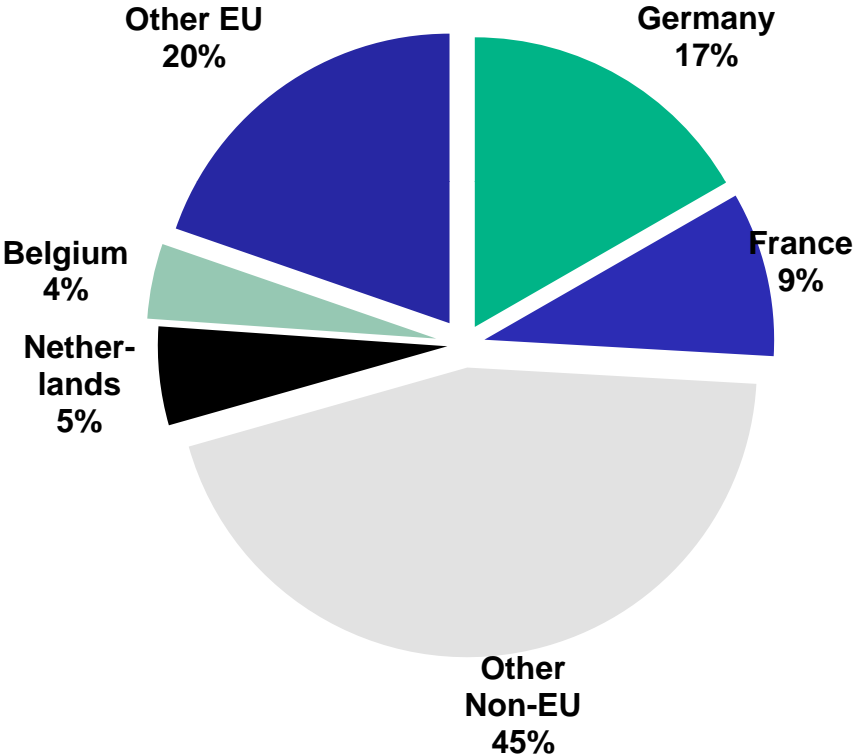


Source: EIU

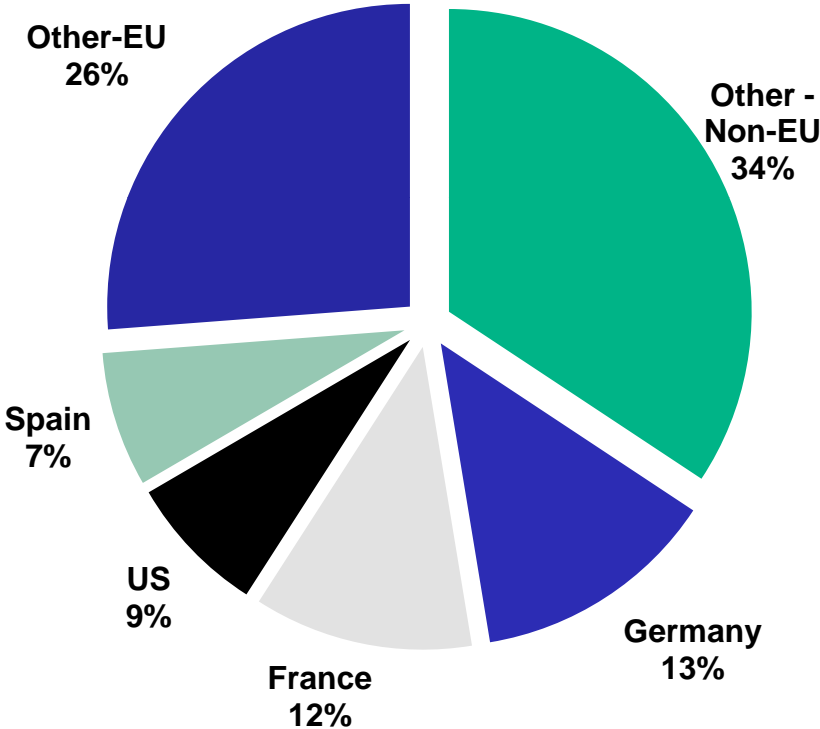


Substantial trade with Germany and France

Import Origins

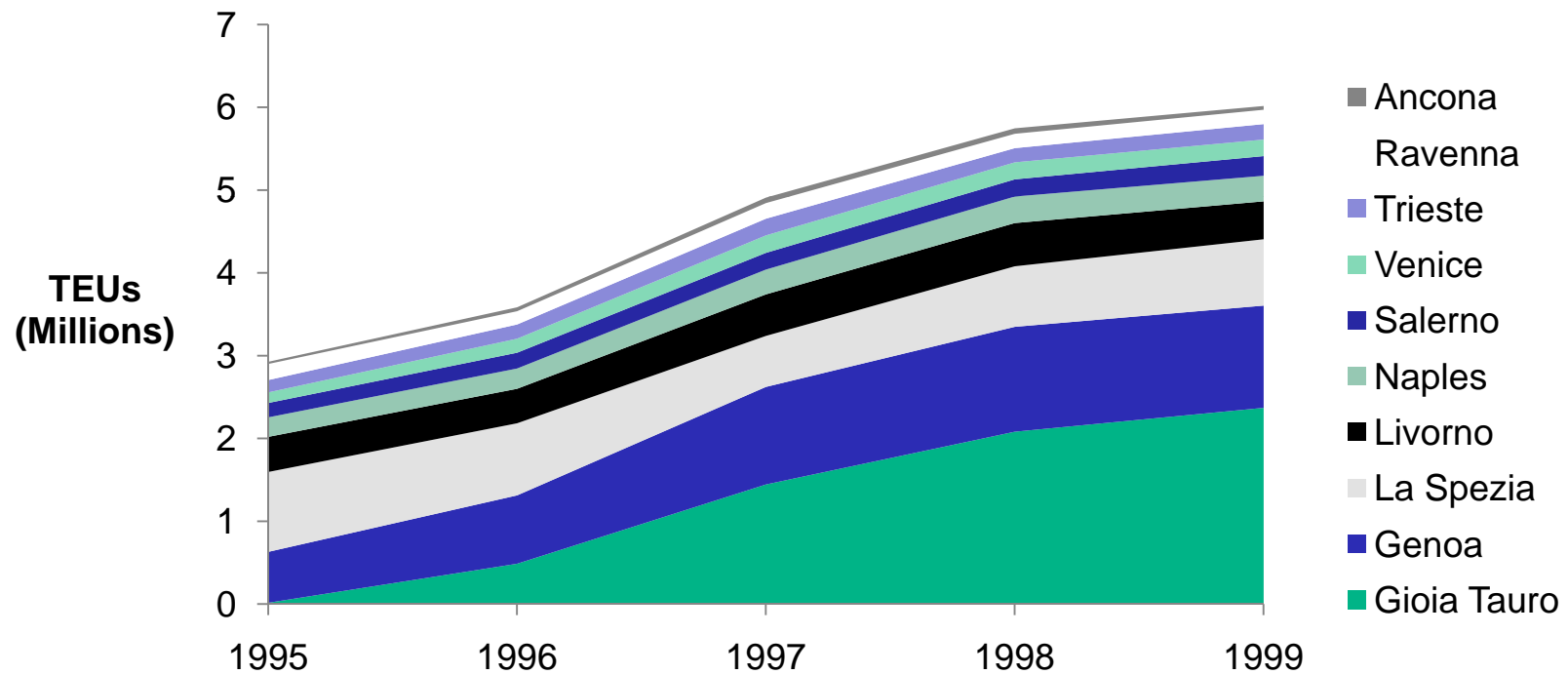


Export Destinations



Consistent growth, especially at Gioia Tauro

Volume Through Italian Ports, Historical Time Series



Italy – one country, three regions

Northern Italy

- **Milan**
 - Finance
 - Chemical production
 - Publishing
- **Turin**
 - Automotive
 - Aerospace
- **Genoa**
 - Ship Building

Central Italy - Florence, Rome

- Tourism

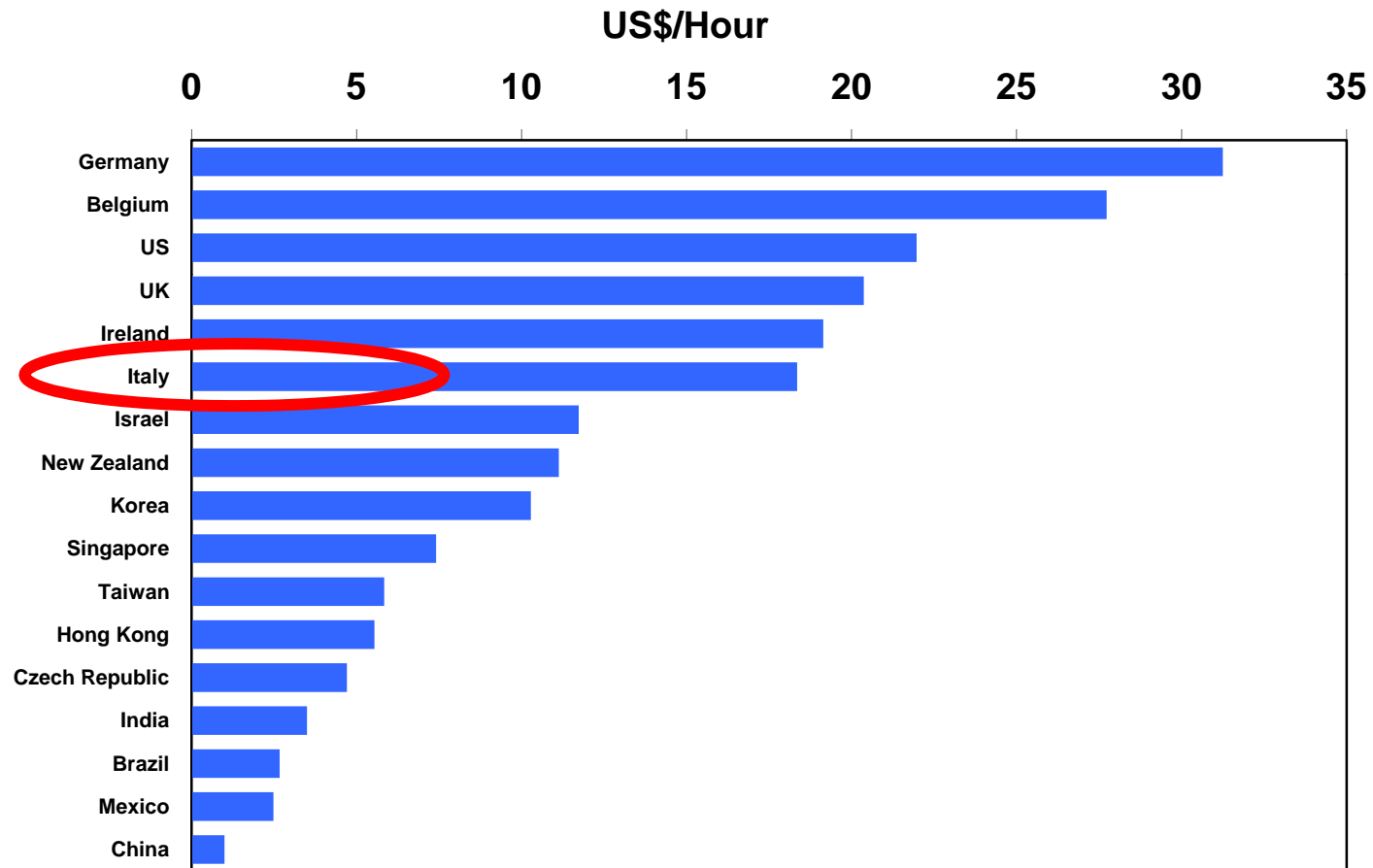
Southern Italy

- Agriculture



Competitive on exports with Europe

Hourly Labor Costs by Country



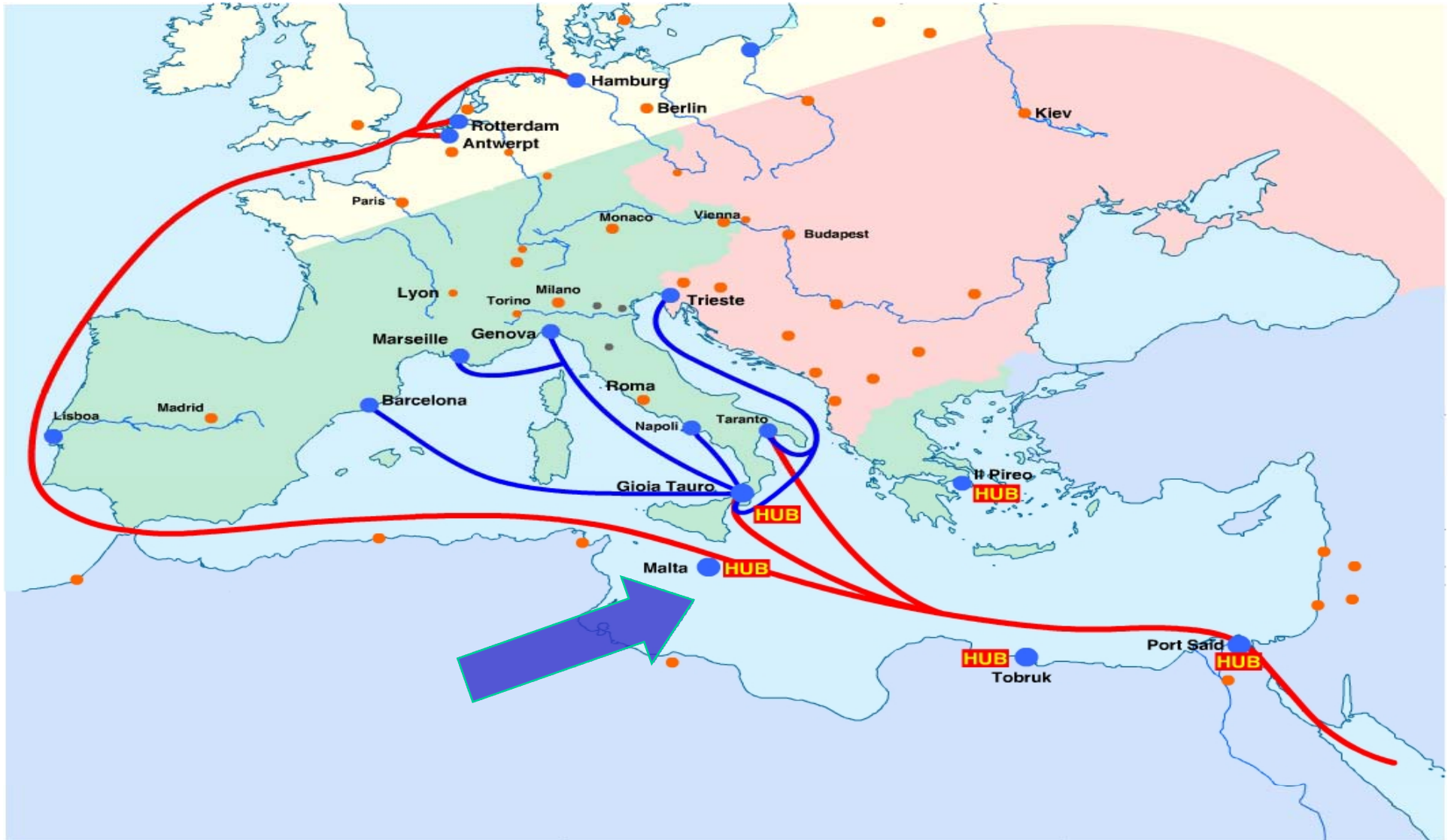
Source: Boston Strategies International analysis of US government data



Role of Port of Gioia Tauro

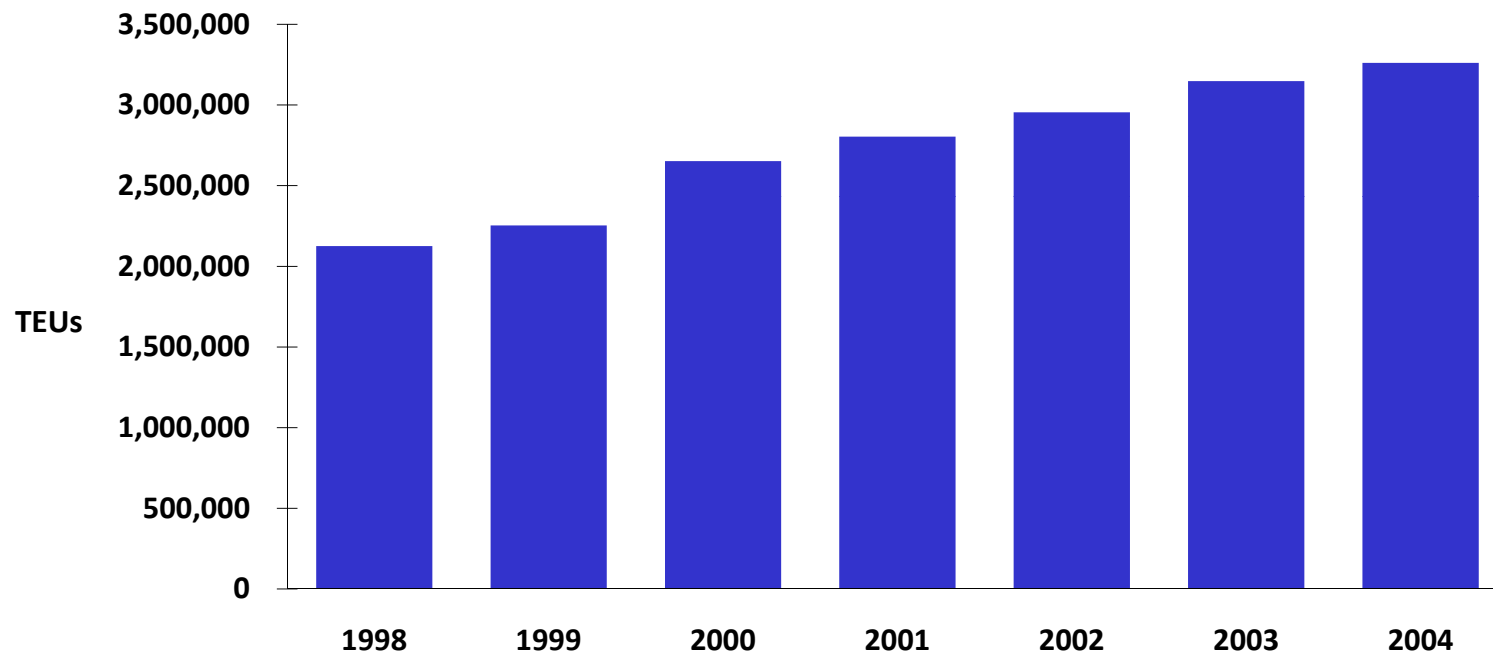


A trans-shipment hub



Steadily rising freight volume

Container Volume Through Gioia Tauro

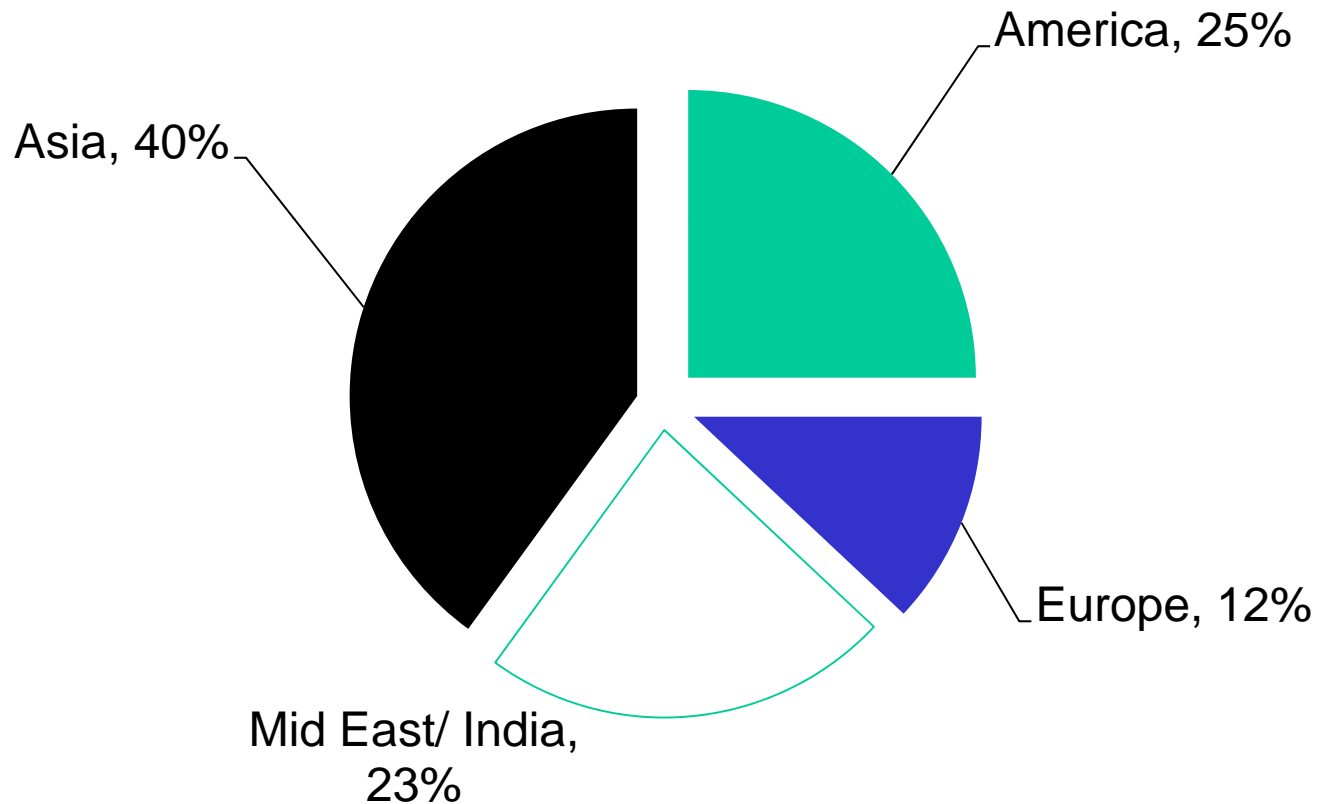


Source: Containerisation International



Gioia Tauro serves an international market

Markets Served by Gioia Tauro



Source: Boston Strategies International analysis

24th largest port in the world

Gioia Tauro vs. World Leading Ports

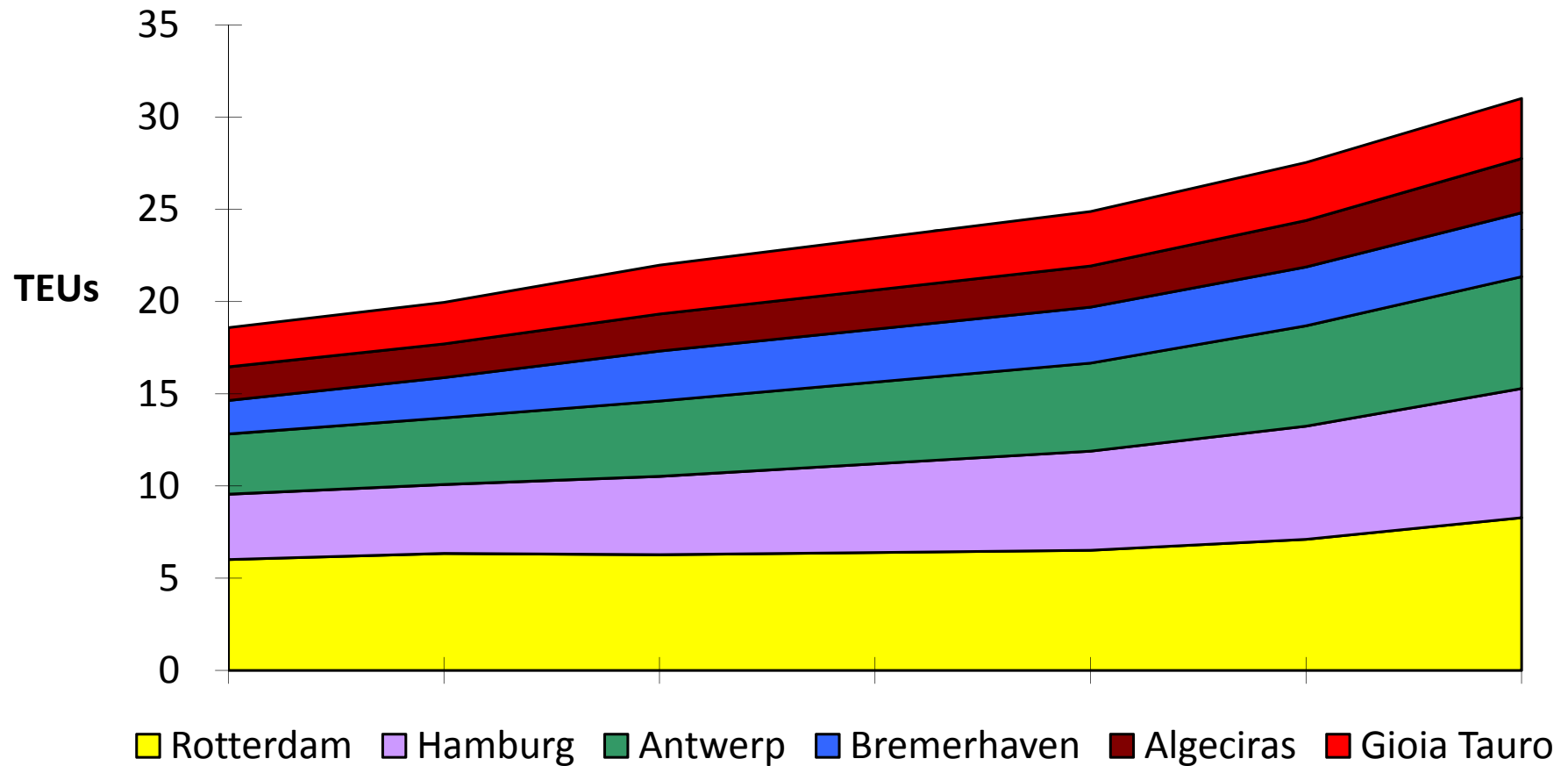
Rank	Port	Country	TEUs
1	Hong Kong	China	21,984,000
2	Singapore	Singapore	21,329,000
3	Shanghai	China	14,557,200
4	Shenzhen	China	13,615,200
5	Busan	South Korea	11,430,000
6	Kaohsiung	Taiwan	9,714,115
7	Rotterdam	Netherlands	8,280,786
8	Los Angeles	USA	7,321,440
9	Hamburg	Germany	7,003,479
10	Dubai	UAE	6,428,883
11	Antwerp	Belgium	6,063,746
12	Long Beach	USA	5,779,852
13	Port Kalang	Malaysia	5,243,593
14	Qingdao	China	5,139,700
15	New York	USA	4,478,480
24	Gioia Tauro	Italy	3,261,000

Source: Containerisation International



Gioia Tauro rising with other European Ports

TEU Volume (millions) through Gioia Tauro Compared to Other European Ports



Source: Containerisation International



A deep-draft port for Italy

Terminal Draft

Northern Europe		Mediterranean		Italy	
Port	Draught	Port	Draught	Port	Draught
Hamburg	16.7	Pireas	16.5	Trieste	18.0
Rotterdam	16.6	Algeciras	16.0	Gioia Tauro	15.5
Antwerp	15.5	Valencia	16.0	Genova	15.0
Felixstowe	15.0	Barcelona	16.0	Cagliari	14.0
Southampton	15.0	Malta	15.5	Taranto	14.0
Le Havre	14.5	Marsiglia	14.0	Napoli	14.0

Sources: Boston Strategies International analysis of data from Trans-European Network and Universita di Pisa



Well equipped

Gioia Tauro vs. Italian Ports

	Gioia Tauro	Cagliari	Taranto
Quay Length (m)	3,011	1,520	1,500
Terminal Area (m ²)	1,660,000	400,000	930,000
Water Depth (m)	13.5 ~ 17	16	14.3 ~ 16
Number of Berth	10 ~ 13	5	5
Container Cranes	25	9	10
Handling Capacity (TEU)	5,000,000	1,500,000	2,000,000

Sources: Boston Strategies international analysis of data from Italian universities



Cost advantage for certain inland destinations

Gioia Tauro vs. Northern European Ports

Distance (Kilometers)	Milan	Munich	Vienna	Budapest	Berna	Lyon	Kiev
Northern European Ports	945	785	935	1,195	690	768	2,350
Italian Ports	138	515	490	585	455	469	1740
Reduction	85%	34%	48%	51%	34%	39%	26%

Truck Cost (€ per FEU)	Milan	Munich	Vienna	Budapest	Berna	Lyon	Kiev
Northern European Ports	1,022	894	1,013	1,237	821	880	2,352
Italian Ports	310	691	672	743	645	656	1,750
Reduction	70%	23%	34%	40%	21%	25%	26%

Rail Cost (€ per FEU)	Milan	Munich	Vienna	Budapest	Berna	Lyon	Kiev
Northern European Ports	802	726	797	924	681	718	1,566
Italian Ports	326	594	581	630	562	570	1,215
Reduction	59%	18%	27%	32%	17%	21%	22%

Sources: Boston Strategies International analysis of data from Italian universities



Development and Investment



High-speed rail network

- Italy has the largest railway infrastructure development program in Europe
 - Investment high-speed and high capacity network
 - €2.5 billion in 2002
 - €3.5 billion in 2003
 - €4 billion in 2004
 - €4.5 billion in 2005
 - Freight logistics chain
 - Reorganizing and separating traffic flows



Source: *International Railway Journal*



Railway infrastructure

High Speed Line Characteristics

Maximum Speed	300 km/h
Minimum Curve Radius	5450 m
Maximum Gradient	1.8%
Maximum Gradient in Tunnels	1.5%
Maximum Track Elevation	10.5 cm
Maximum Axle Load	25 tons
Trackbed Width	13.6 m
Distance Between Track Centers	5 m
Power Supply On New Lines	25 kV 50 Hz
Power Supply On Urban Sections	3 kV dc

Italian Railway Network (RFI) Infrastructure

Network Length	16,200 km
Electrified	10,800 km
Multiple Track Sections	6,300 m
Passenger Stations	2,700
Freight Stations	479
Tunnels	1,380 km
Bridges and Viaducts	530 km
Trains Per Day	9,200

Journey Time On High-Speed Lines

Source: International Railway Journal

	Current Time	New Time	Time Saved
Turin - Milan	1 h 30 min	50 min	40 min
Milan - Bologna	1 h 42 min	56 min	46 min
Bologna - Florence	59 min	30 min	29 min
Florence - Rome	1 h 35 min	1 h 20 min	15 min
Rome - Naples	1 h 45 min	1 h 5 min	35 min



Managing Shipments Into/Out of Italy

Carriers Serving Gioia Tauro

- Admiral Marine
- APL
- CSAV
- Hanjin Shipping
- Hapah Lloyd
- Hyundai
- K-Line
- Maersk-Line
- OOCL
- Safmarine
- Senator
- United Arab Shipping
- Zim



Inland Rail Network



Inland Road Network

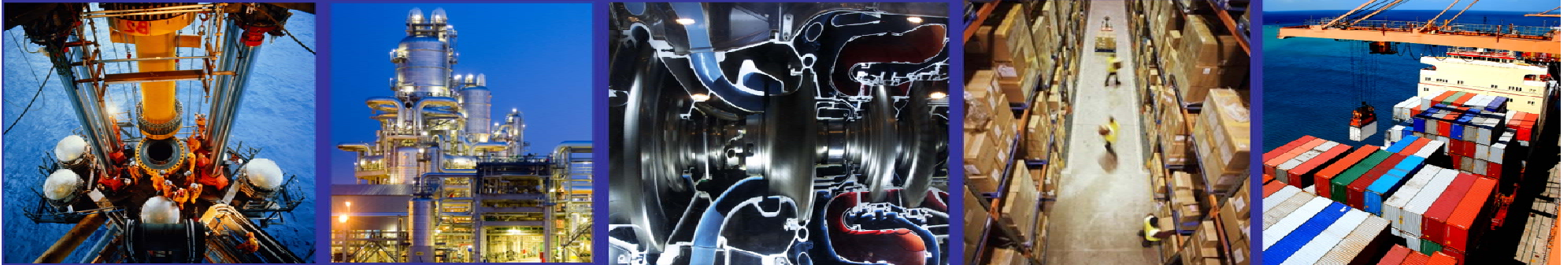


Boston Strategies International

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Boston Strategies International is a global management consulting firm that helps market leaders achieve competitive advantage through supply chain management through:

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- **Supplier Enablement** that facilitates global growth and local content requirements
- **Supply Chain Optimization** that reduces project and life cycle costs



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