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Port Investment Opportunities in Iran

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Royal HaskoningDHV: 60+ years experience with Iranian based projects. Working alongside Iranians to meet their needs and goals.



قرارگاه سازندہ حاتم‌الاباء
کے منشاء



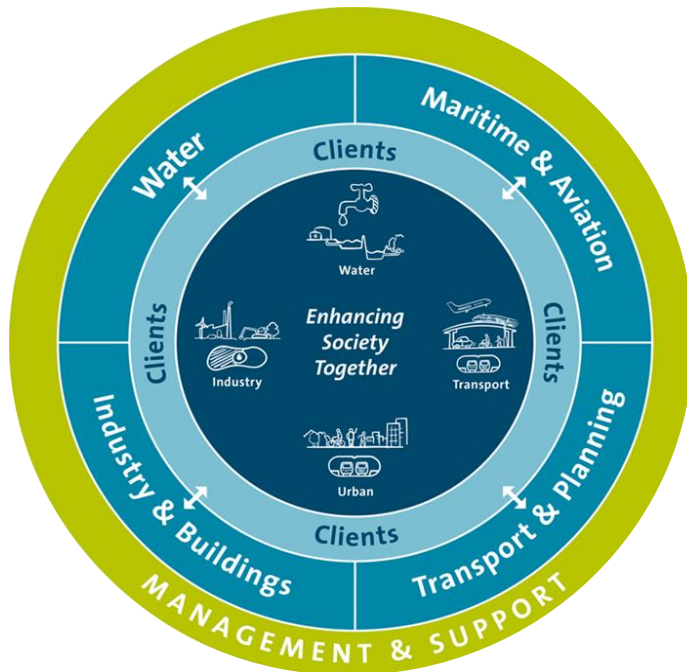
Ocean Shipping Consultants (OSC) is the maritime economic consultancy group of Royal HaskoningDHV, and a leading brand in the maritime sector with more than 35-years of experience



Royal HaskoningDHV has been making a world of difference in people's lives since 1881. As an independent international engineering and project management consultancy,

we have been working with clients to successfully deliver projects which contribute to improving living circumstances around the world for 135 years.

Our 6,000 colleagues, spread over 150 countries are committed to our promise to enhance society together. We combine global expertise with local knowledge to deliver a multidisciplinary range of consultancy services for the entire living environment.



OCEAN SHIPPING CONSULTANTS

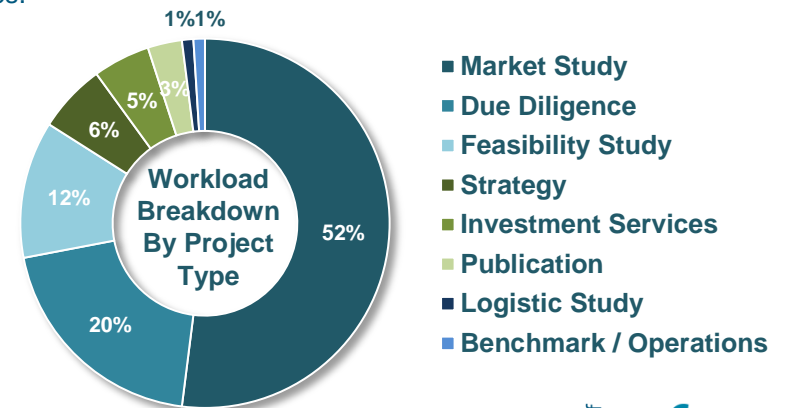
With over 350 projects in more than 65 countries successfully completed over the last 5 years, OSC provides global bespoke consultancy services from offices in London, Amsterdam, Dubai

and Singapore to more than 200 different clients, including port authorities, terminal operating companies, governments, shipping lines, logistics operators and the wider financial community.

Our service portfolio covers three different areas:



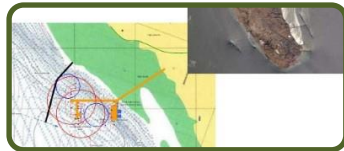
These range of services are undertaken for all cargo types and sectors ensuring that clients are able to make appropriate, well informed decisions at all times.



Examples of RHDHV projects in Iran and worldwide



Shahid Rajaei Port Development
 RHDHV has been involved from the start (Phase I) up to now (Phase III) covering design review of the entire port infrastructure, construction supervision and port planning.



Kharg Island Gas and NGL Feasibility Study
 The work comprised the collection and analysis of meteorological, geologic and hydraulic environmental conditions as boundary conditions for the design of the port lay-out. Different port layouts were developed.



Due Diligence Limassol Port
 A global shipping line requested OSC to undertake a commercial and technical due diligence for the port of Larnaca, which was to be privatised.



Callao Northern Multipurpose Terminal Modernisation
 Royal HaskoningDHV was appointed by APMCT to develop the Master plan for the modernisation and to carry out detailed design for Phases 1 and 2.



Takoradi Port Development
 OSC was approached to provide a high-level financial feasibility analysis for a potential multi-berth terminal within the Port of Takoradi, Ghana.



Business Plan for Kuala Tanjung
 OSC created an integrated business plan for developing Kuala Tanjung as a hub port on the Indonesian island of Sumatra.



New Port Project, Qatar
 RHDHV was contracted to develop detailed design, prepare specifications and technical tender documents and provide technical support to the tender process and construction of the New Port Project.



Rotterdam World Gateway Market Advisor Report Update
 Ocean Shipping Consultants were commissioned by the consortium to provide a market study and updates, as part of the due diligence process to finance the project.



Imam Khomeini International Airport
 IKAC appointed NACO and our local partner consortium 3T as Master Consultant to provide specialised services and assist in the planning, development and implementation of Imam Khomeini Airport City.



Duqm Port Expansion Works
 The client appointed RHDHV to undertake the planning and design for the facilities and marine protection works situated in deeper water.

- RHDHV projects in Iran
- Other RHDHV projects (Maritime)
- OSC projects (Maritime/Commercial)

Introduction

Iranian Container Market overview

Iranian Automotive Market overview

Trends in Container Shipping and
Challenges for Ports

Trends in Automotive Shipping and
Challenges for Ports



Middle Eastern Container Market & Port Investment Opportunities in Iran

United Arab Emirates continues to dominate the Middle Eastern region for container flows handling volumes over three times larger than the next closest competitor.



Source: OSC, IMF, World Bank, PMO

Bandar Abbas remains the dominant port within Iran. Port



Port	2011	2012	2013	2014	2015
Shahid Rajaei	2,751,823	2,261,333	1,796,862	1,766,645	1,703,449
Bushehr	232,979	196,891	186,907	278,140	218,095
Bandar Imam Khomeini	146,851	161,419	143,254	172,843	127,870
Khorramshahr	103,028	84,827	56,004	89,375	64,343
Chabahar	29,009	23,528	13,809	37,478	33,585
Gheshm	0	0	8,026	20,417	15,520
All Other Ports	8,491	11,285	12,824	17,091	17,940
TOTAL	3,272,181	2,739,283	2,218,202	2,382,870	2,183,610

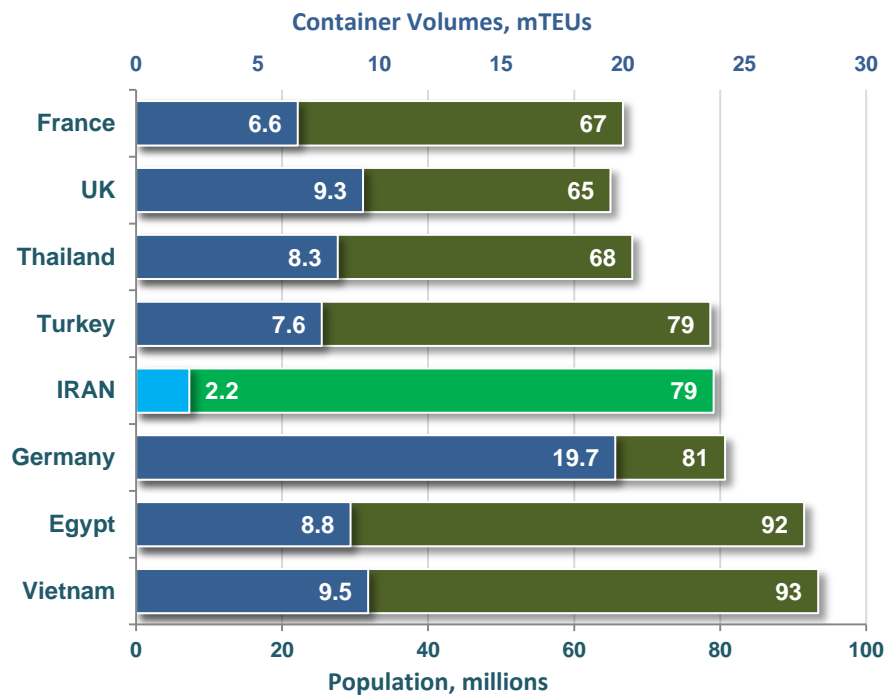
* All volumes in TEU

Source: PMO

Container handling volumes for Iran are less than they could be, when compared to other nations of similar size.

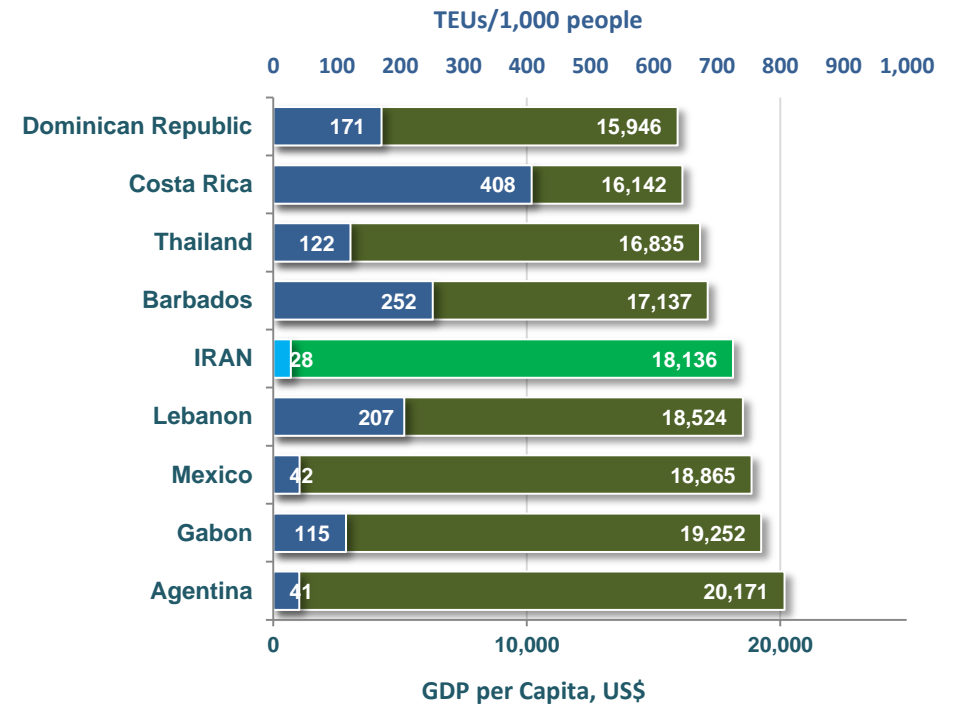
Countries of similar population

- Similar countries are handling volumes between 7.5 - 9.5 million TEU p.a.



Countries of similar GDP per Capita

- Also on a basis of GDP/capita Iran has relatively low volumes

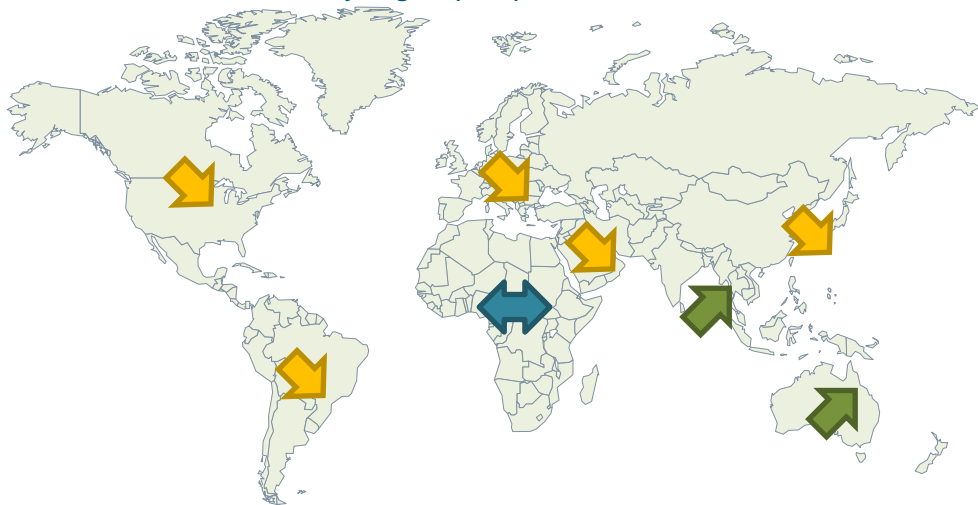




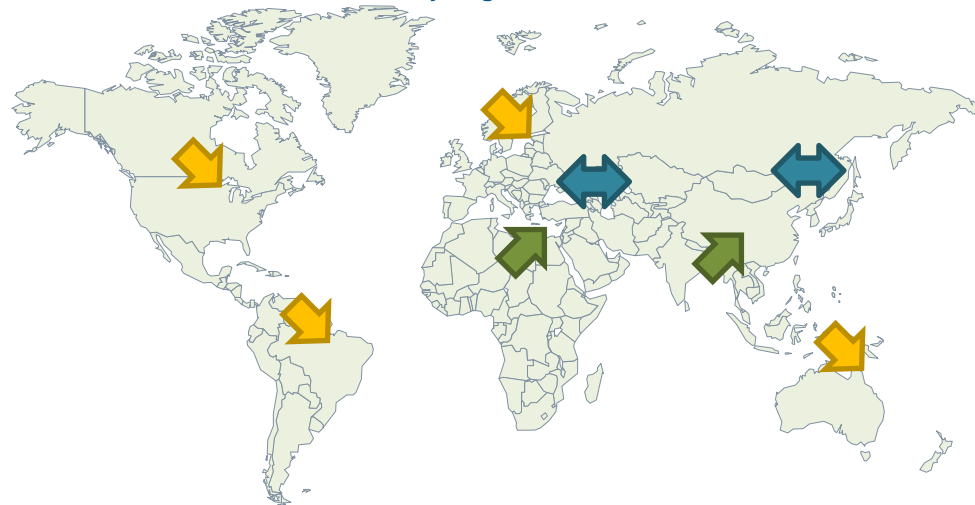
Global Economic Outlook & the Container Shipping Sector

The economies of Central, South and South East Asia, and Africa are expected to out perform other regional economies in the near future.

Current GDP Performance* by Region (2015)

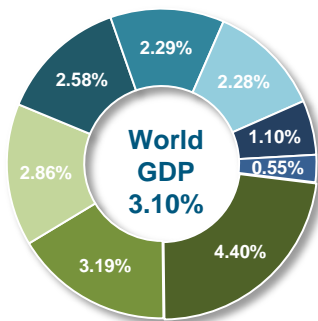


Future GDP Performance* Outlook by Region



World GDP Growth by region, 2015 (%)

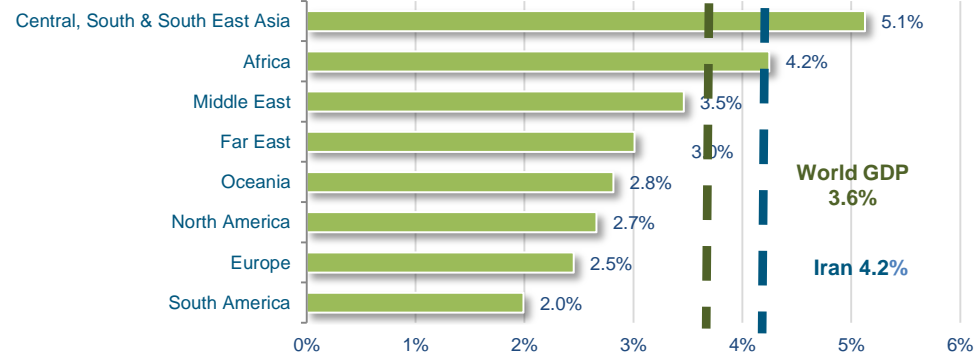
- Central, South & South East Asia
- Oceania
- Africa
- Far East
- Europe
- North America
- South America
- Middle East



Source: OSC / IMF

*Performance as compared to Average World GDP Growth

GDP forecast CAGR, 2016-2021 (%)

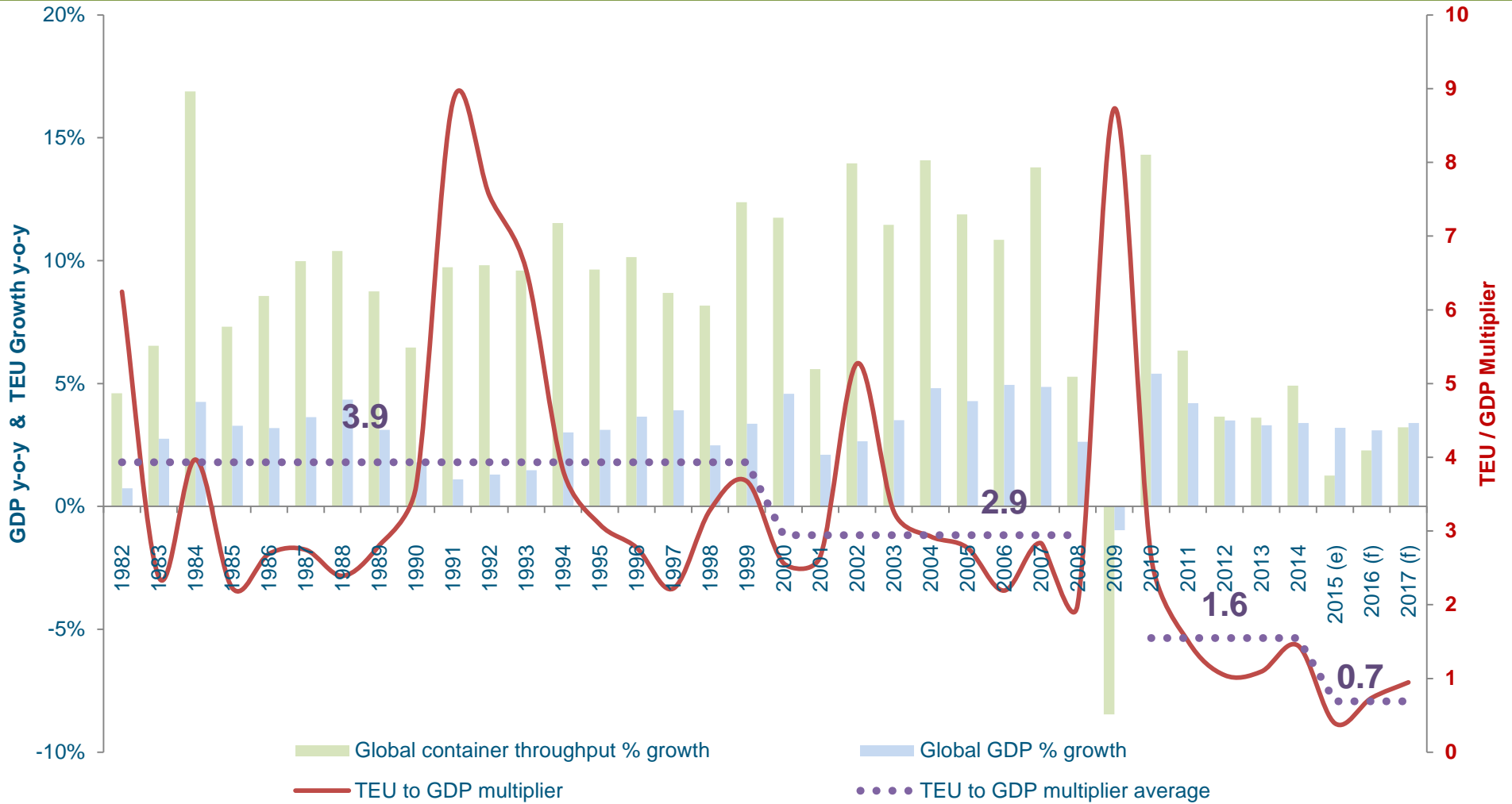


Source: OSC / IMF

*Performance as compared to Average World GDP Growth










Over-Performing World Avg. Growth
 Performing to World Avg. Growth
 Under-Performing World Avg. Growth

The declines in the container volume growth is putting pressure on Shipping Lines.



Source: OSC, IMF

Driven by market share & economies of scale, the ship size revolution has continued, but savings are decreasing...

Container Ship Size Evolution		
Early Containerships (1956) 500-800 TEU		LOA (m) : 137 Beam (m): 17 Draft (m): 9
Fully Cellular (1970) 1000-2500 TEU		LOA (m) : 215 Beam (m): 20 Draft (m): 10
Panamax (1980) 3,000-4,000 TEU		LOA (m) : 250 Beam (m): 32 Draft (m): 12.5
Panamax Max (1985) 3,400-4,500 TEU		LOA (m) : 290 Beam (m): 32 Draft (m): 12.5
Post Panamax (1988) 4,000-5,000 TEU		LOA (m) : 285 Beam (m): 40 Draft (m): 13
Post Panamax Plus (2000) 6,000-8,000TEU		LOA (m) : 300 Beam (m): 43 Draft (m): 14.5
New Panamax (2014) 12,500 TEU		LOA (m) : 366 Beam (m): 49 Draft (m): 15.2
Post New Panamax (2006) 15,000 TEU & Triple E Class (2013) 18,000 TEU		LOA (m) : 400 Beam (m): 59 Draft (m): 15.5
New Generation 22,000 TEU*		LOA (m) : 430 Beam (m): 59 Draft (m): 15.5

Source: OSC, Alphaliner

Effect of Container Shipping Market

Cascading Effect

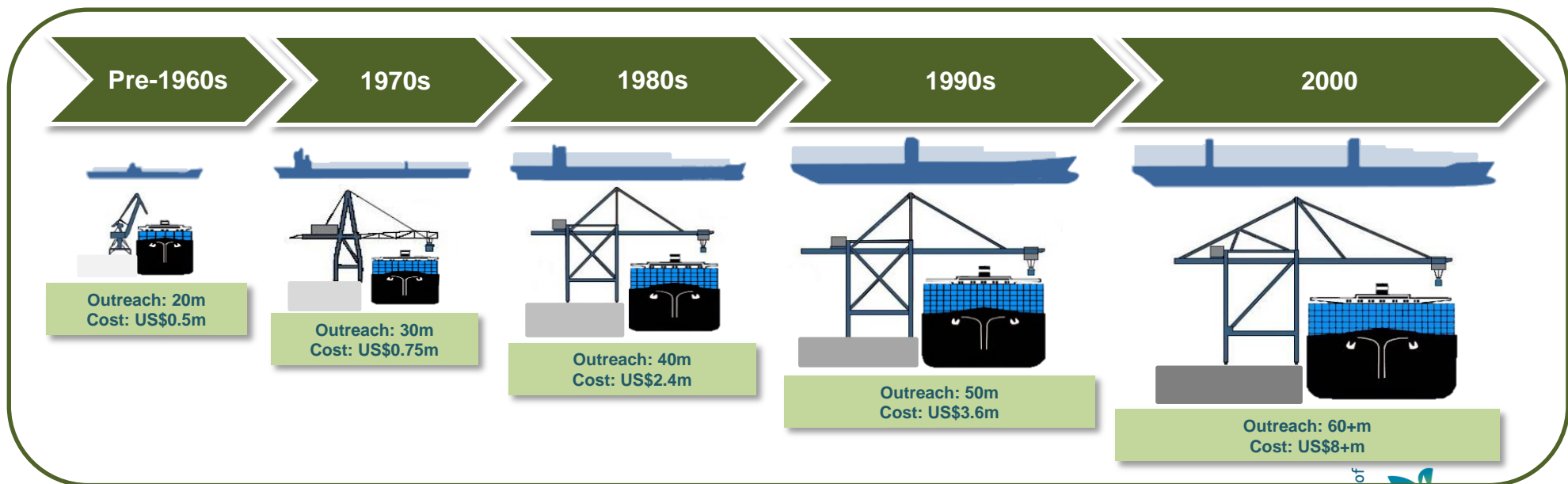
- Replaced vessels are downsized to other Secondary and Tertiary trade lanes
- Larger container volume exchanges resulted in the port call frequency to drop

Impact on Alliances

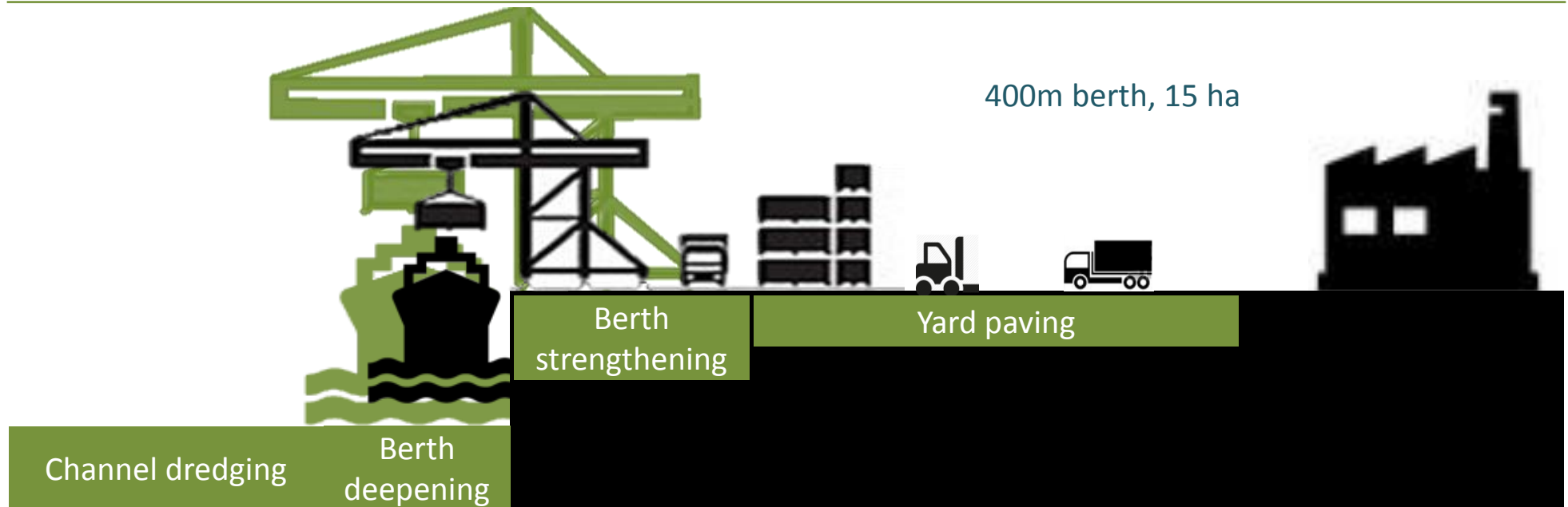
- Formation of fewer, larger alliances in an effort to maximise vessel utilisation

... while costs are rapidly increasing for terminals.

Larger Ships	Less frequent calls	Larger Alliances
<ul style="list-style-type: none"> Larger cranes Additional dredging Other upgrading <ul style="list-style-type: none"> Quay wall strength, locks, bridges, etc Increased insurance cost 	<ul style="list-style-type: none"> Larger container exchanges <ul style="list-style-type: none"> Higher peak capacity & productivity required throughout the terminal More flexible labour needed Increased impact when losing a client 	<ul style="list-style-type: none"> Increased bargaining power of Alliances



The increase in vessel sizes has resulted in port authorities and terminal operators incurring capital expenditure to upgrade their facilities.



Area	Current	New	Estimated cost (US\$ millions)
Channel depth & width	1 km, 242m wide, 15m	1km, 295 wide, 16m	4.1
Berth length & depth	400m, 15.0m	400m, 16.0m	2.7
Equipment upgrades	4 cranes with 18 rows	4 cranes with 23 rows	40
Yard paving	15 ha	20ha	30
Total			76.8

Will the lines pay for these extra costs?



Vehicle Terminal opportunities in Iran

Iranian Automotive market overview

Effect of Sanctions

- Iran was the region's largest carmaker
- Sanctions had a negative effect of Sales and Production
- Import volumes tumbled due to the weak currency and exports were affected by lack of quality
- Local brands strengthened market share and Chinese carmakers replaced western carmakers

Vision 2025

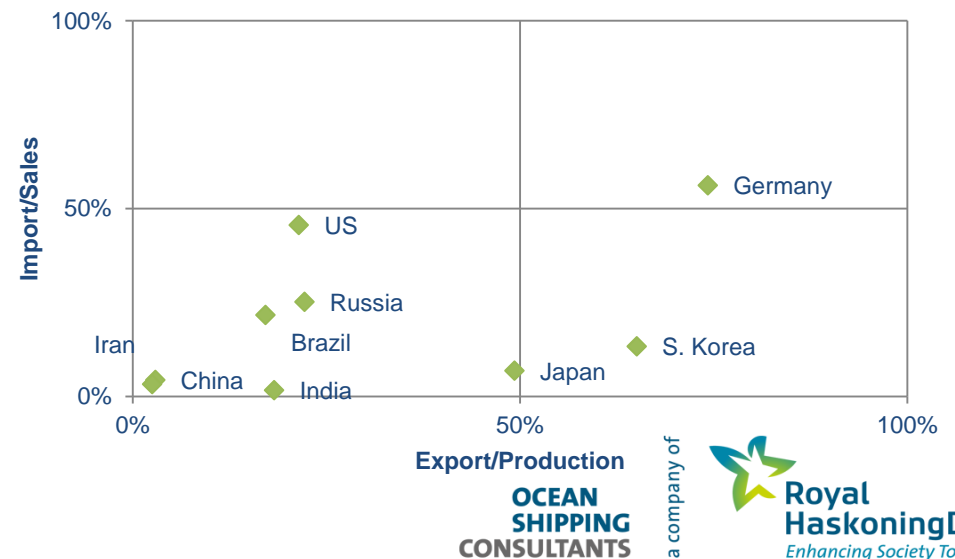
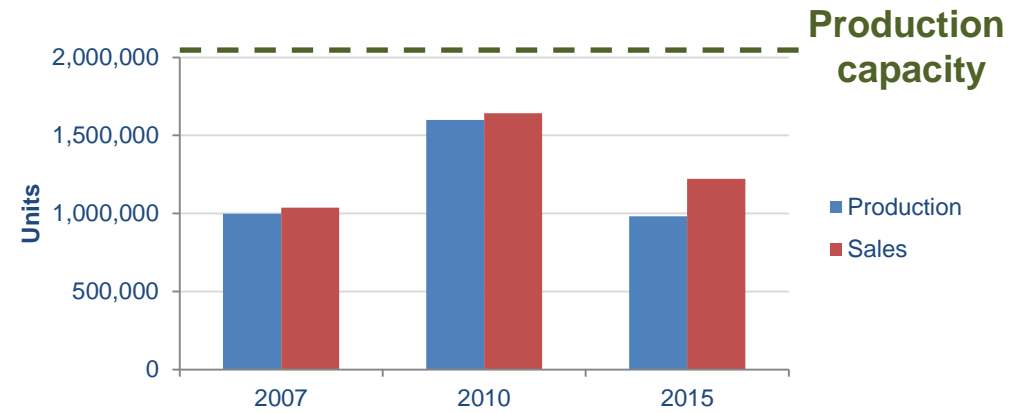
- Still Iran's 2nd largest industry
- Young population (>50% younger than 25 years)
- Car ownership at approx. 170/1,000 people
- Government targets production of 3 mio vehicles by 2025 (local content requirements, import tariffs, import restrictions etc)
 - 2 mio for local market
 - 1 mio for export

Medium term trade potential

- Insufficient financing opportunities
- Consensus that production of 2 mio is more realistic
- Target export markets are the same markets that Chinese JV partners are targeting (Iraq, Russia, Syria, Venezuela...)

Long term trade potential

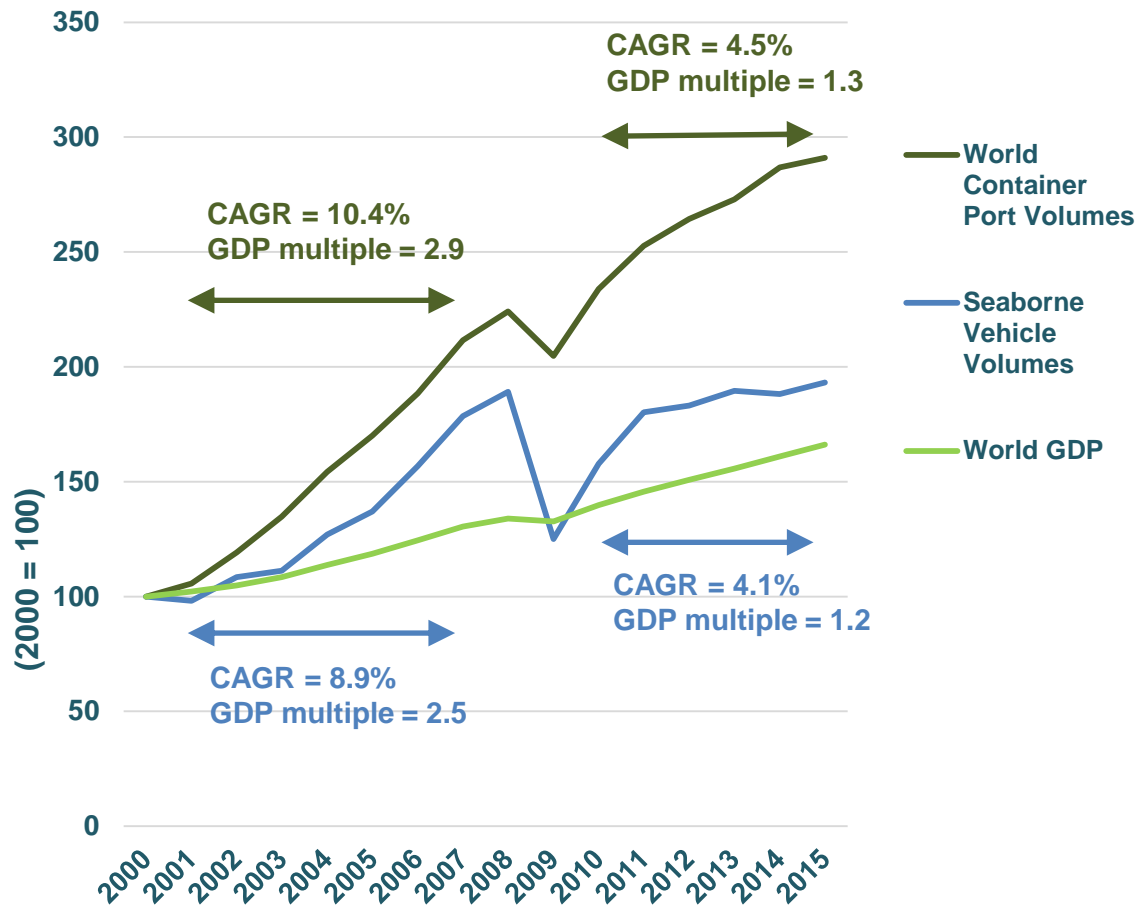
- Clients want choice!!!





The Vehicle Shipping sector

Global Vehicle volumes follow a similar trend as Container volumes, but growth is slower ... and slowing

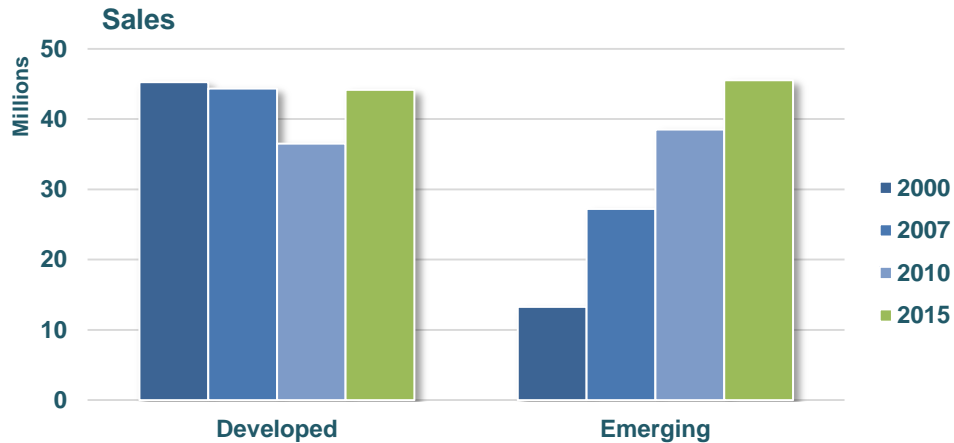


Growth slower

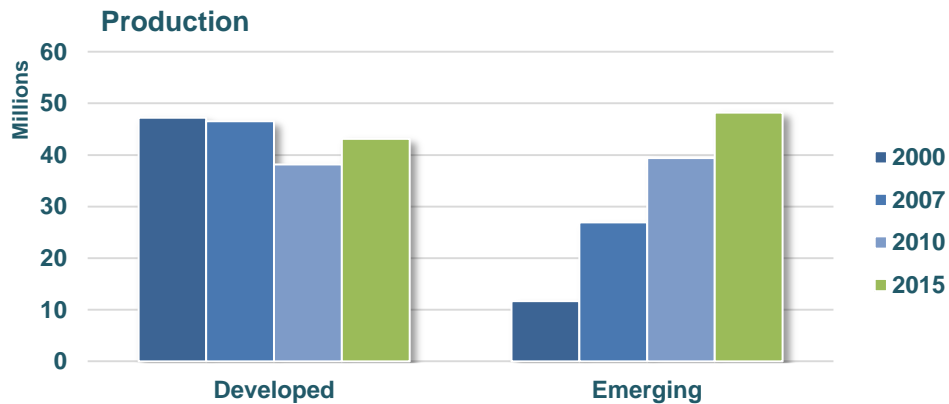
Growth more volatile

- Limited transshipment opportunities due to vessel design
 - No new products adding to volumes
 - Vehicle ownership maturing around 550-600 vehicles/1,000 people
 - Localisation of production
-
- Disasters
 - 2011 Japanese earthquake & tsunami
 - 2011 Floodings in Thailand
 - Political events
 - 2011 War in Syria
 - 2016 Brexit vote
 - Economic developments
 - 2013 Korean labour strikes
 - 2014 Oil price crash effect on Russian wealth
 - Regulatory decisions
 - 2017: Iran import restrictions

Growth now relies on emerging economies



- Sales are relatively stable in most developed countries and production is relatively well spread amongst most of these regions
- Substantial demand growth seen in emerging economies and this is attracting carmakers to set up plants in new locations (localisation)
 - E.g. Russia, Brazil, Mexico
- As a result, sales and production volumes in emerging economies has now overtaken those of developed countries

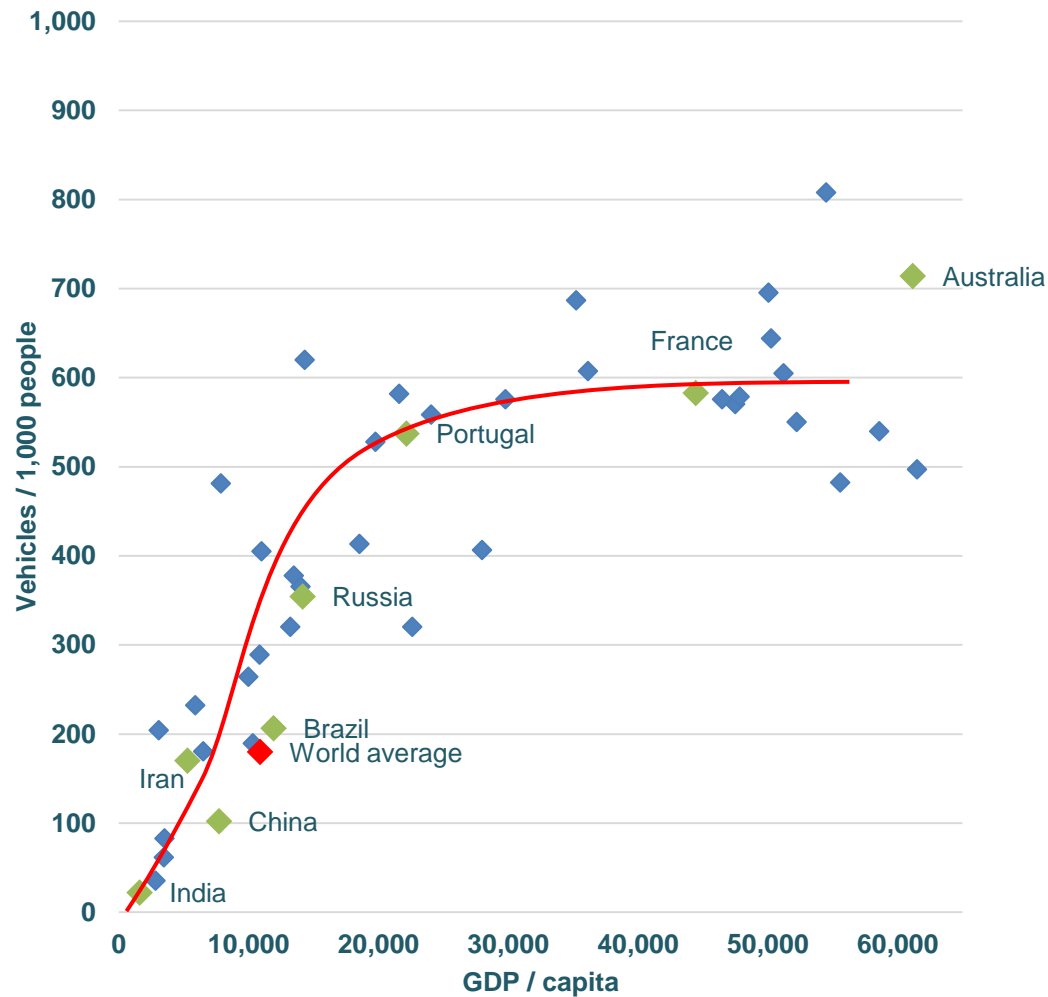


**Population:
Abt. 1bn**



**Population:
Abt. 6.5bn!!!**

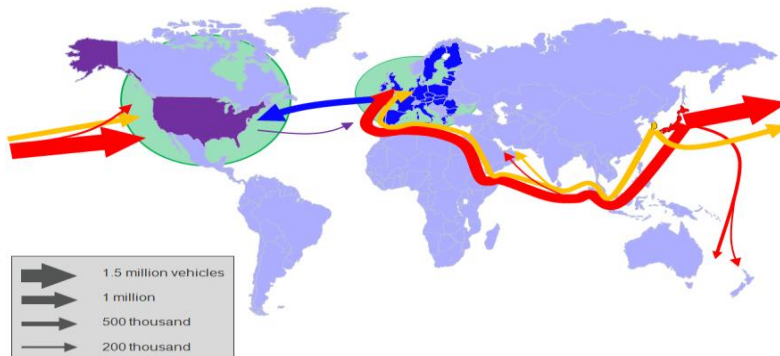
... and this is where further growth will continue to come from



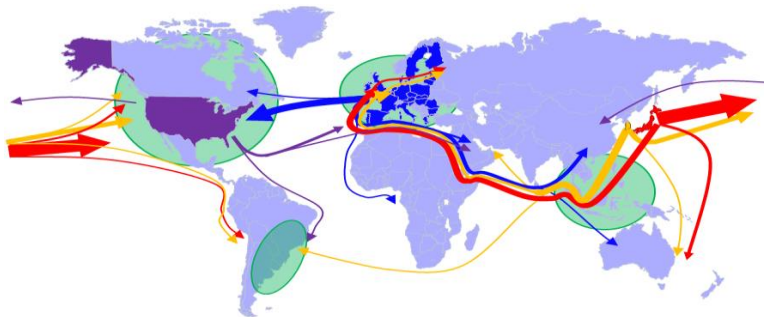
- Car ownership per 1,000 people is around 550-600 in most developed countries
- ... so there is still substantial growth potential in emerging countries,
- despite demand (growth) threatened by:
 - Inadequate infrastructure
 - new technologies (e.g. autonomous driving)
 - environmental regulations (e.g. Chinese car ownership restrictions)

So new trade lanes are emerging and growing fast, requiring direct calls

2000: 8.7 mio vehicles

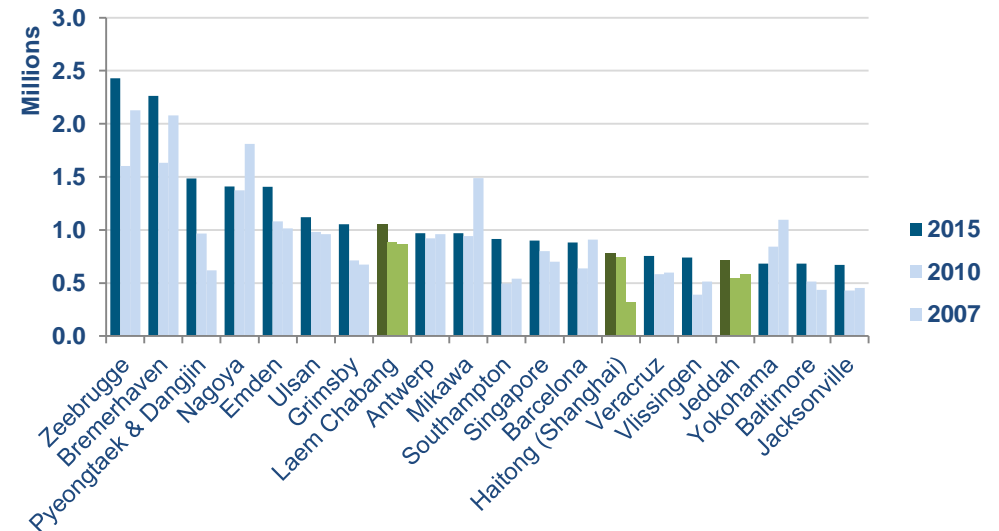


2010: 13.6 mio vehicles

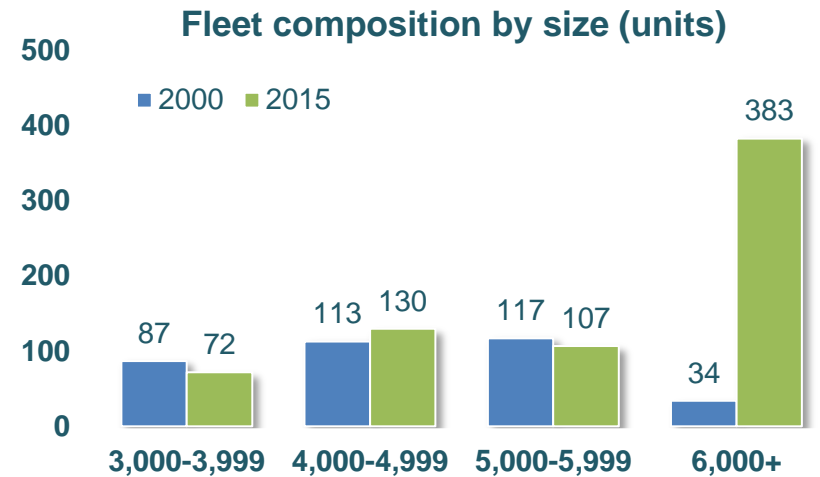
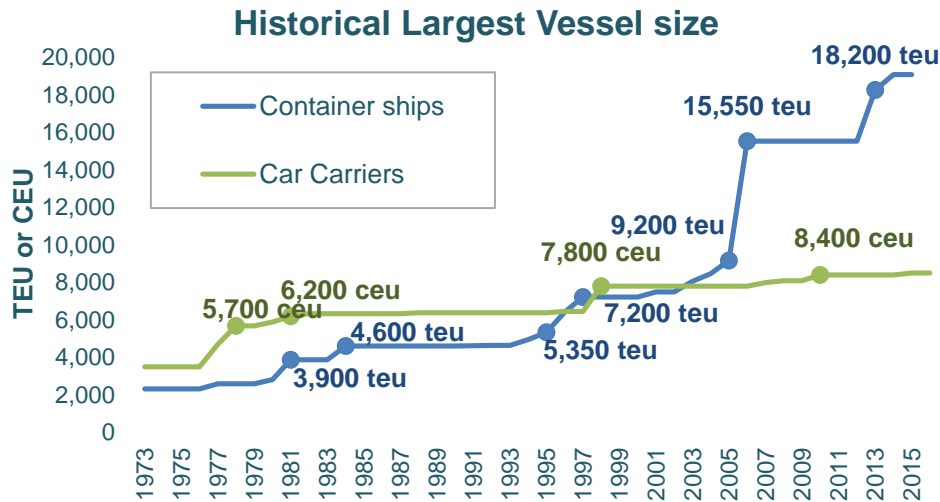


- Approx. 20% of global vehicle sales is shipped (seaborne)
- The share of East-West trade seaborne volumes (between Japan, S. Korea, EU and US) decreased from 55% in 2000 to approx. 25% in 2010:
 - Trade imbalances decreased
 - Emergence of new intra-regional trade (SE Asia, Latin America, NAFTA)
 - Increasing volumes on north-south routes
 - Limited transshipment opportunities

- The global top-20 vehicle ports remained largely the same, dominated by European, Korean and Japanese ports
- Volumes in the current Top-20 ports has increased 17% since 2008
- But the number of ports that require direct calls by Car Carriers has boomed
 - Volumes up by 17% in Top-20 port between 2008-2015
 - Number of ports handling 50,000+ vehicles p.a. increased by 30%



Car Carriers have not increased as much in terms of capacity as Container ships ... and even less in terms of dimensions



Franconia (1985)
3,500 ceu
Length 177m / Beam 29.2m
Draft 9.0m



Marina Ace (1987)
5,400 ceu
Length 198m / Beam 32.3m
Draft 11.6m



Hoegh Treasure (1999)
6,500 ceu
Length 200m / Beam 32.3m
Draft 10.3m

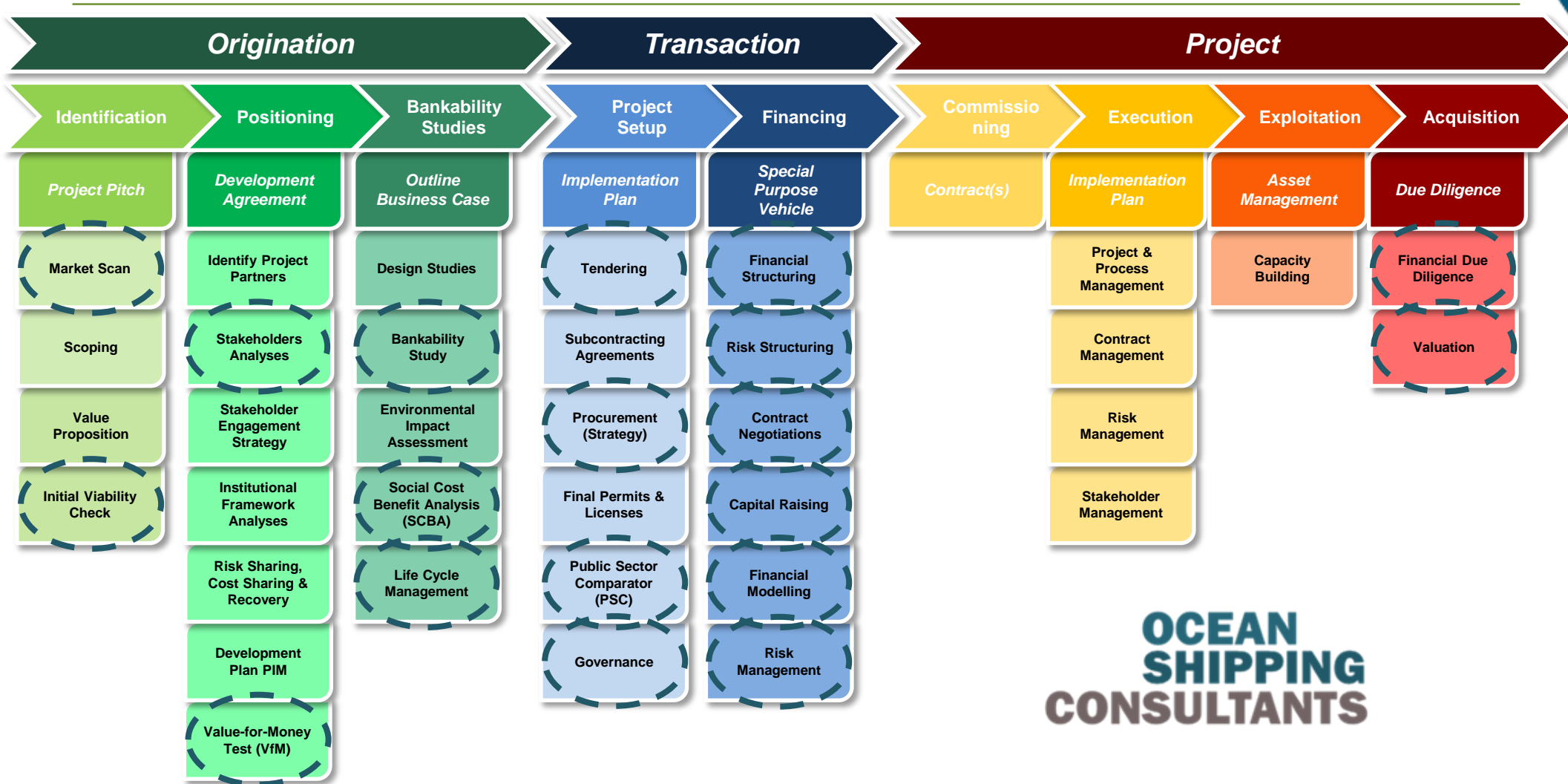


Helios Highway (2015)
7,500 ceu Post-Panamax
Length 200m / Beam 35.4m
Draft 10.6m

So the implications of changing trades to Car Terminal Operators are limited



Port investment process



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