

**OCEAN  
SHIPPING  
CONSULTANTS**

# Outlook For Middle East Container Trade Compared With Global Trends

**11<sup>th</sup> Trans Middle East – Doha, 6<sup>th</sup> May  
2015**

*Steve Wray  
Principal Consultant  
Ocean Shipping Consultants  
(part of Royal HaskoningDHV)*



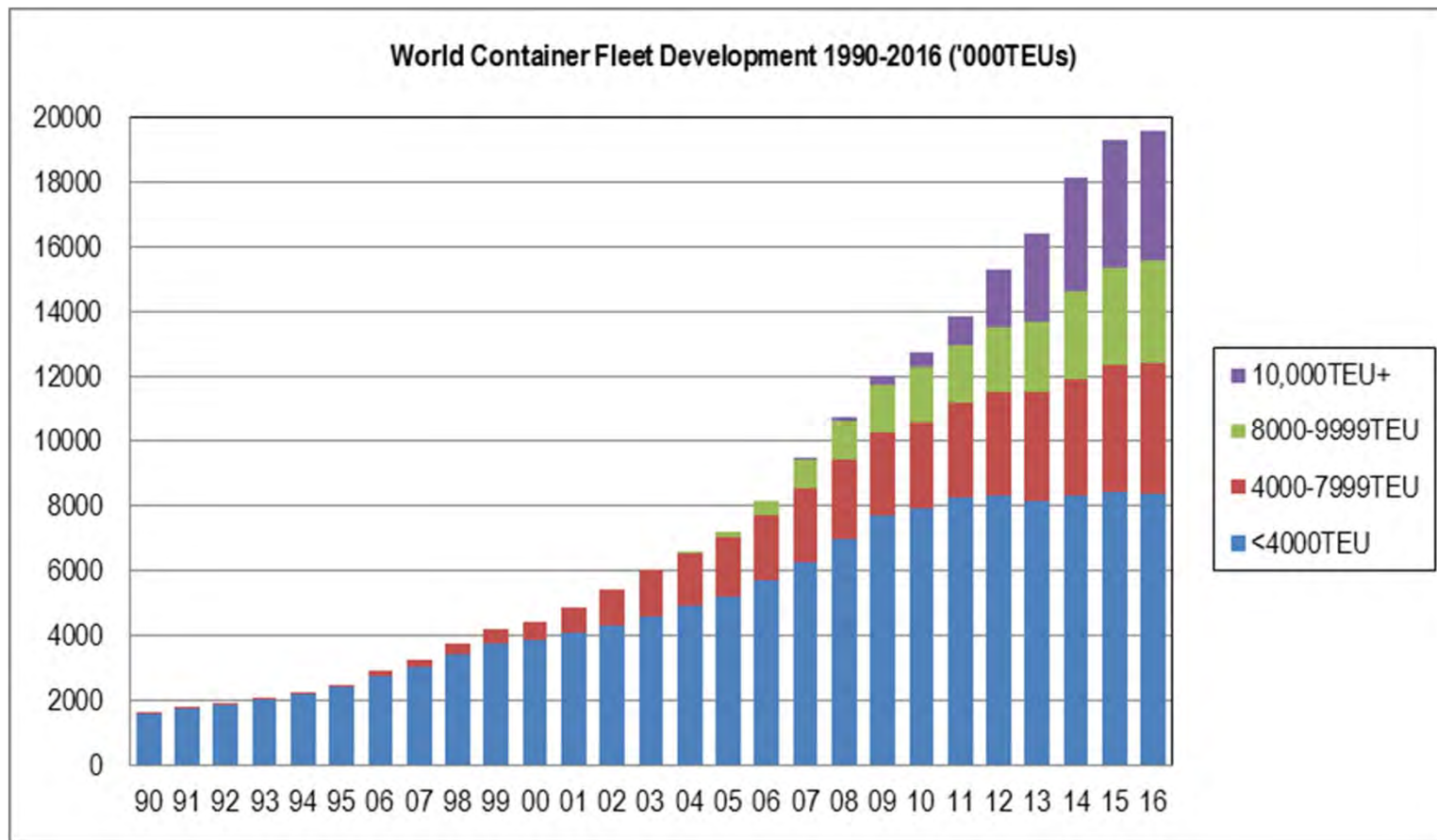
# Contents

- Setting the scene - Industry trends - ship size revolution
- What is happening to the container fleet?
- Regional service / fleet developments
- Increase in T/S demand
- T/S requirements
- Historical regional and T/S port volumes
- Existing regional container facilities
- Planned regional terminal developments
- Implications for container terminals
- Conclusions

## OCEAN SHIPPING CONSULTANTS



# Industry trends - Ship Size Revolution



# Industry Trends–Ship Size Revolution

- Fully cellular containership fleet expanded to >16m TEU.
- Focus remains on larger vessels – 8,000TEU+ sector up by 10.8%.
- Trend for bigger ships well established since 2004 – 18,000TEU+ ships in service.
- Almost all major lines committed to ULCS.



Design Development of Large Containerships

	TEUs	Length overall (m)	Beam (m)	Maximum draught* (m)	Required berth depth (m)*
First generation: 1968	1,100				
Second generation: 1970-80	2-3,000	213	27.4	10.8	12.0
Panamax: 1980-90	3-4,500	294	32.0	12.2	12.8-13.0
Post-panamax: 1988-95	4-5,000	280-305	41.1	12.7	13.5-14.0
Fifth generation: 1996-2005	6,400-8,000	300-347	42.9	14.0-14.5	14.8-15.3
Super post-panamax: 1997->	8,000-11,400	320-380	43-47	14.5-15.0	15.3-15.8
Ultra large containerships: 2006->	14,500	380-400	56.4	15.5	16.3
New-panamax: 2010	12,500	366	49.0	15.2	16.0
Maersk EEE Class	18,270	400	59.0	16.0	16.5
China Shipping UASC newbuilds	18,400	400	58.6	16.0	16.3

\* Maximum draught is rarely realised, even when vessels are fully laden, so required berth depth is less in practice.

Source: Ocean Shipping Consultants

- China Shipping and MSC confirmed current orders to be extended to 19-20,000TEU.
- Other lines to follow – Maersk Line, CMA CGM, UASC all committed to larger tonnage.
- Ship cascading will continue to secondary trade lanes including Middle East calls

# Industry Trends - Ship Size Revolution

Key factors of note for lines operating larger vessels:

- **Port Concentration:**
  - Terminals have to meet needs of larger ships.
  - Potential fewer ports of call.
- **Transshipment:**
  - Intensifying in key locations.
  - Hub & Spoke, Relay/Interlining used.
- **Alliances/Consolidation:**
  - Individual lines lack overall traffic to successfully utilise bigger ships cost-effective – hence alliances.
  - G6 Alliance, 2M Alliance, CKYHE and “Ocean Three” grouping will all continue in major trade lanes.
  - Fewer viable alternatives for customers on main trade lanes.



# What is Happening to the Container Fleet?



- The role of 10,000TEU+ vessels has increased dramatically, driven by scale economies and competitive pressures.
- Massive ordering for ULCS and New Panamax vessels including vessels now >20,000TEU.
- Transpacific and Asia-Europe trades cannot absorb all of this tonnage - 'cascade' effect on other routes now being felt and also beginning to impact on Middle East.
- Development of new 'broad beam' 8,000-10,000TEU vessels for North-South trading, particularly in Africa and South America.
- The overall effect will be further concentration and greater transshipment activity.
- New generation container feeder vessels – 1,800-2,000TEU (and larger) will be typical. Larger 5,000TEU feeders also appear in Europe. Potential for cooperation too.

# Future Container Fleet Developments

- The shipping lines desire to maximise the size of vessels, whilst minimising the slot costs looks set to continue with designs for 22,000TEU and 24,000TEU vessels already under discussion.
- New vessel designs offer either an increase in LOA (from 400m to 430-450m) or an increase in beam from 59.0m to 61.5m.
- In all new design option, draught required remains the same as EEE-Class vessels.
- WAFMAX/SAMMAX vessels specifically designed to maximise capacity for use in shallower waters such as in Africa and South America.

Container Vessel Sizes and Rows Across

Type	TEU range	No.of rows
Panamax	4,500-4,900	13
Post Panamax	5,000-6,000	16
	6,000-9,000	17
	9,000-10,000+	18
New Panamax	12,500-13,000	20
Post New Panamax	14,500	23
EEE-Class	18,270	23
New generation	22,000	24
WAFMAX/SAMMAX	7,450-8,700	18

Source: Ocean Shipping Consultants

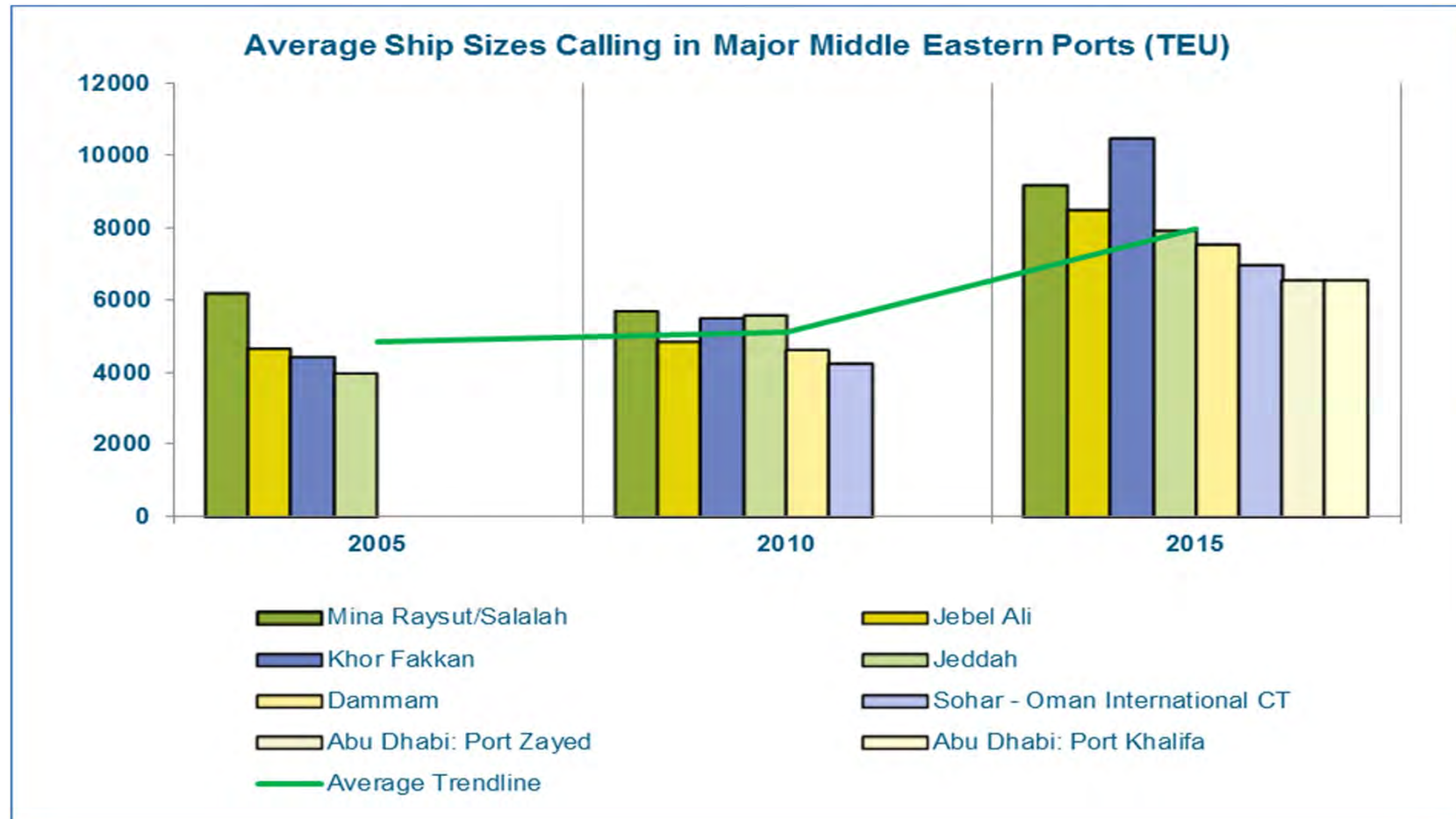
# Regional Service Developments

- There are three main ways of serving the ME region:
  - Asia-Europe
  - Asia-USA (via Suez)
  - Asia-ME/ISC
- Asia-Europe services deploy largest available tonnage and are served by all major Alliances.
- Asia-USA via Suez offer limited number of services <8,000TEU currently.
- Asia-ME/ISC old “niche” market service operated by many niche operators and major Alliances
- Focus of expansion in Asian Trades – especially Intra-Asian feedering, but also some direct services to regional hubs appearing to help fill larger tonnage.
- Integration with major East-West services via Salalah, Jebel Ali, Khor Fakkan, Jeddah, Colombo, Sohar etc. and increasing number involve direct calls at transshipment hubs in Middle East.





# Regional Fleet Developments



# Increase in Transshipment Demand

- The development of transshipment demand will be a function of a number of interrelated factors:
- The continuing increase in vessel size and further moves to reduce the number of direct calls on deepsea vessels.
- Related terminal accessibility for largest vessels.
- Adequacy of existing ports for direct calls.
- Future development of built-up costs of direct calls v feeder alternatives.
- The availability of overall capacity for transshipment operations, as determined by the balance of supply/demand in the regional port markets.
- Degree of shipping line investment in terminal developments in dedicated terminals – effectively fixing a shipping line at a particular port.

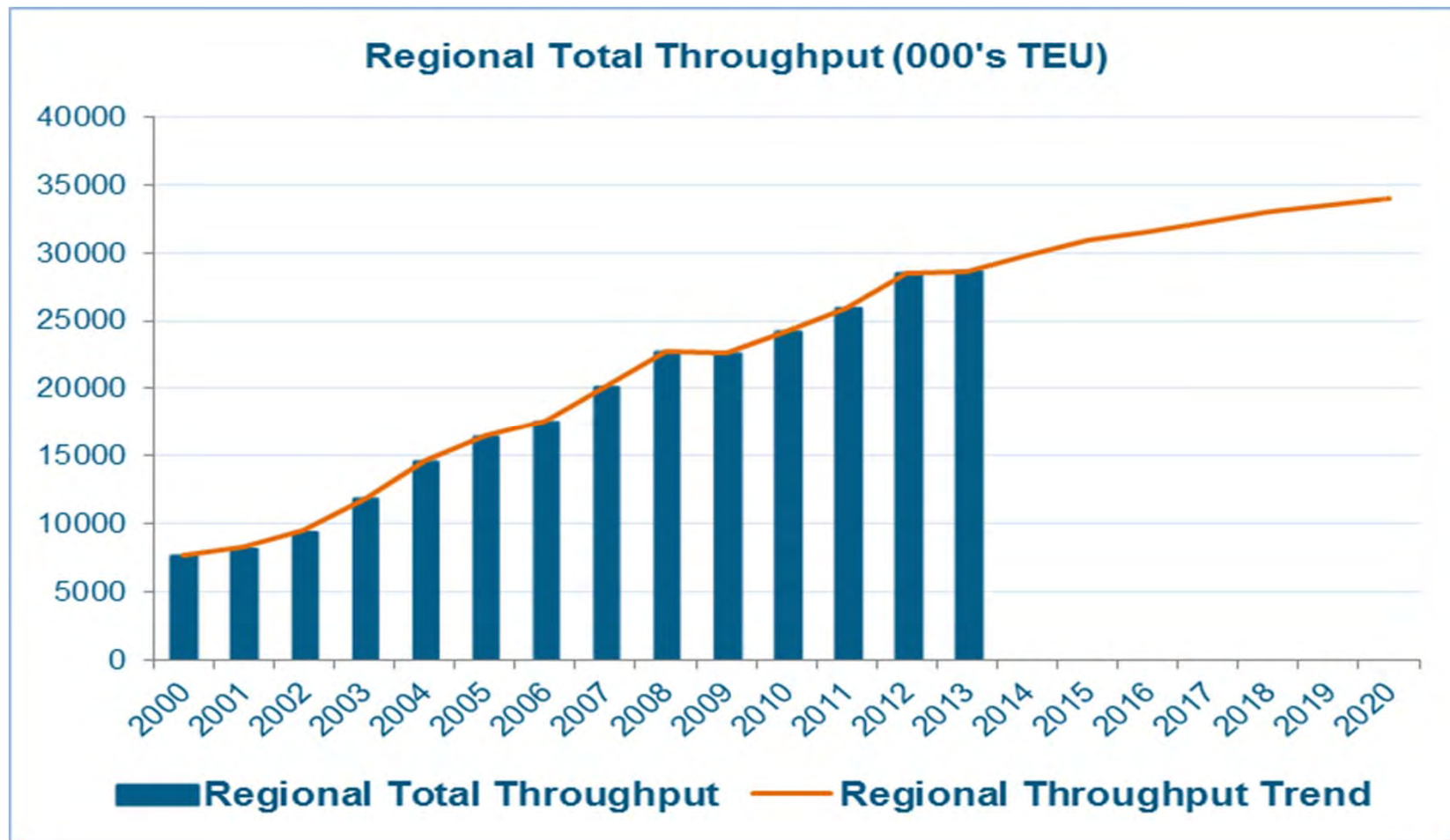


# Requirements For Transshipment Hubs

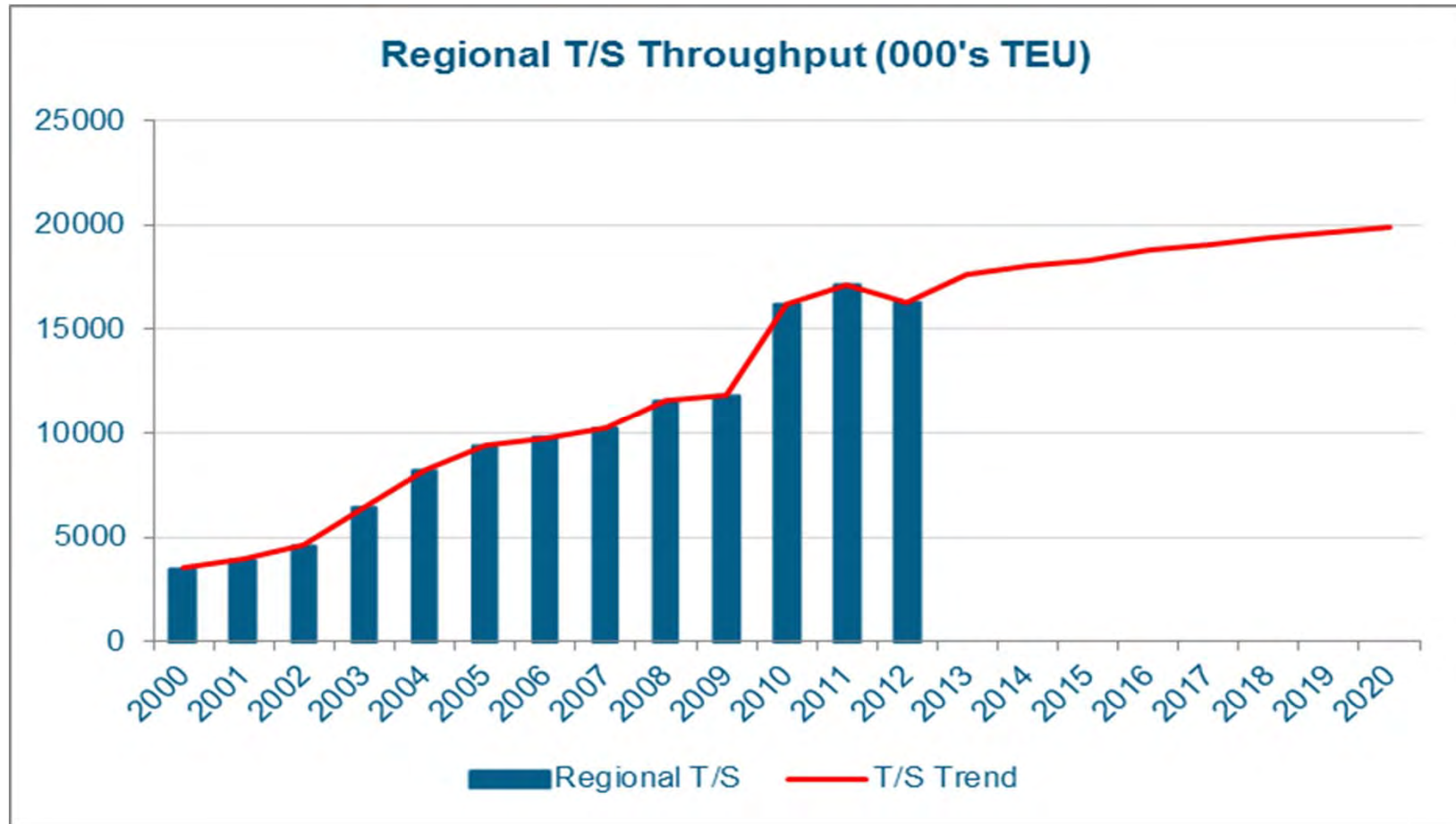
- Geographic location - minimal deviation from main East-West route.
- Tariff levels and operating costs.
- Performance and service levels.
- Labour/workforce arrangements .
- Facilities (e.g. physical accessibility, water depth, size/number of cranes).
- Availability of capacity.
- Avoidance of congestion.
- Potential for dedicated facilities/terminal areas.
- Priority berthing.
  
- Low degree of bureaucracy at port, especially customs authorities.
- Efficient vessel support systems in place – i.e. pilots, tugboats etc.
- Other support services and functions.
- Value-added services.
- Good security and protection coverage at all times.



# Regional Container Port Volumes



# Regional Transshipment Volumes



# Existing Major Regional Terminal Facilities

## Current Port Facilities

Port	Terminal	Area (ha)	Quay Length (m)	Berth Depth (m)	Capacity (000 TEUs)	Quay Cranes		Gantries		
						P	PP	SPP		
Jebel Ali	Tml 1	206	4875	10.5-16	9000	9	16	24		
	Tml 2	302	3000	16	6000			29		
	Tml 3	72	1862	17	4000			19		
Fujairah		20	800	10.5-12.5 draft	1000	2	4			
Khor Fakkan		70	2000	16	5000	6				4+10 megamax
Khalifa Bin Salman		90	1800	13.40-15	1000		4			
Abu Dhabi: Port Khalifa		0.27	1200	18	2500					9
Mina Raysut/Salalah		77 yard	1350*	18	5000					25
Sohar - Oman International CT	Tml 1	28	520	16 draft	800	4				
	Tml 2	68	970	18 draft	1500	6				
	Tml 3	98	1780	18 draft	3000	10				
Dammam		116	1680	14		16+5mobile				
Jeddah	Red Sea Gateway Tml	50	1055	16.5	1800		2	2	6	
	North Container Tml	107	1660	15	3000	2 mobile			11	
	South Container Tml	62	1720	16	2400	6 mobile		5	11	

\* total length after planned expansion

Source: Ocean Shipping Consultants

# Maximum Size of Vessel Accommodatable

## Design Development of Large Containerships

	TEUs	Length overall (m)	Beam (m)	Maximum draught* (m)	Noted Required berth depth (m)*
First generation: 1968	1,100				
Second generation: 1970-80	2-3,000	213	27.4	10.8	12.0
Panamax: 1980-90	3-4,500	294	32.0	12.2	12.8-13.0
Post-panamax: 1988-95	4-5,000	280-305	41.1	12.7	13.5-14.0
Fifth generation: 1996-2005	6,400-8,000	300-347	42.9	14.0-14.5	14.8-15.3
Super post-panamax: 1997->	8,000-11,400	320-380	43-47	14.5-15.0	15.3-15.8
Ultra large container ships: 2006->	14,500	380-400	56.4	15.5	16.4
New -panamax: 2010	12,500	366	49.0	15.2	16.1
Triple E-Class	18,270	400	59.0	15.5	16.4
CSCCL 18,400 Class	18,400	400	58.6	15.5	16.4

\* Maximum draught is rarely realised, even when vessels are fully laden, so required berth depth is less in practice.

Source: Ocean Shipping Consultants



**OCEAN  
SHIPPING  
CONSULTANTS**



## Maximum Vessels Accomodated When Full

Terminal	Max.Depth (m)	Max. Vessel Cap.
Oman Int'l	18.0	20,000
Salalah	18.0	20,000
Jebel Ali	17.0	20,000
Jeddah	16.5	18,400
Khor Fakkan	16.0	12-14,500

Source: Ocean Shipping Consultants

11<sup>th</sup> Trans Middle East 2015 – Doha, 6<sup>th</sup> May 2015

 **Royal  
HaskoningDHV**  
Enhancing Society Together

# Main Planned Regional Developments

- **Jebel Ali – 19m TEU capacity by 2H 2015; 10 new cranes will give a total of 97 and port will handle 10 ULCSSs at the same time.**
- **Khor Fakkan – last major expansion in 2011; \$60m of cranes due in 2015.**
- **Jeddah – Red Sea Gateway major expansion due to be finalised in 2015. increase from 1.8-2.5m TEU with +255m quay**



- **Salalah – 3 new container berths planned 2015-2017**
- **Dammam – 2<sup>nd</sup> container terminal underway and first phase operational in Q1 2015 with 16m deep; 6 STS and 0.9m TEU capacity.**
- **Abu Dhabi – transfer ops from Port Zayed to Khalifa Port with initial capacity of 2.5m TEU increasing to 15m subject to demand.**



# Implications for Container Terminals

- Terminals must expand and make better use of existing facilities to handle larger vessels and consignment sizes
- Terminal productivity has improved, but there remain a need for further improvements
- Terminals which do not lift productivity will see market share decline
- Need for dredging – approach channels and berths. Clear planning needed for all terminal developments. Depth alongside is critical to ‘future-proof’ terminals. Channel and approach dredging can follow later.
- Longer berths ; larger terminal area; increased gate pressure
- Larger/Havier Quay Cranes - Longer reach; Taller clearance; Twin/Tandem Lifts
- Increase in load on quay structures and increase in electrical loads and electrical infrastructure



# Conclusions

- Major Alliances gives access to markets ahead of notional demand for individual shipping lines
- Slow steaming allows potential time for extra calls
- Increased number of t/s hub options
- Terminals have to become increasingly efficient and look to offer 'something different' to be able to attract calls
- New deepwater terminals to be more prevalent in the region and take a higher share of t/s business away from Jebel Ali
- New service structures will see introduction of larger tonnage and consolidation of volumes at major t/s hubs across the region





# Thank You

*Steve Wray*

*Email: [stephen.wray@rhdhv.com](mailto:stephen.wray@rhdhv.com)*

*Web: [www.osclimited.com](http://www.osclimited.com)*