## Deloitte.



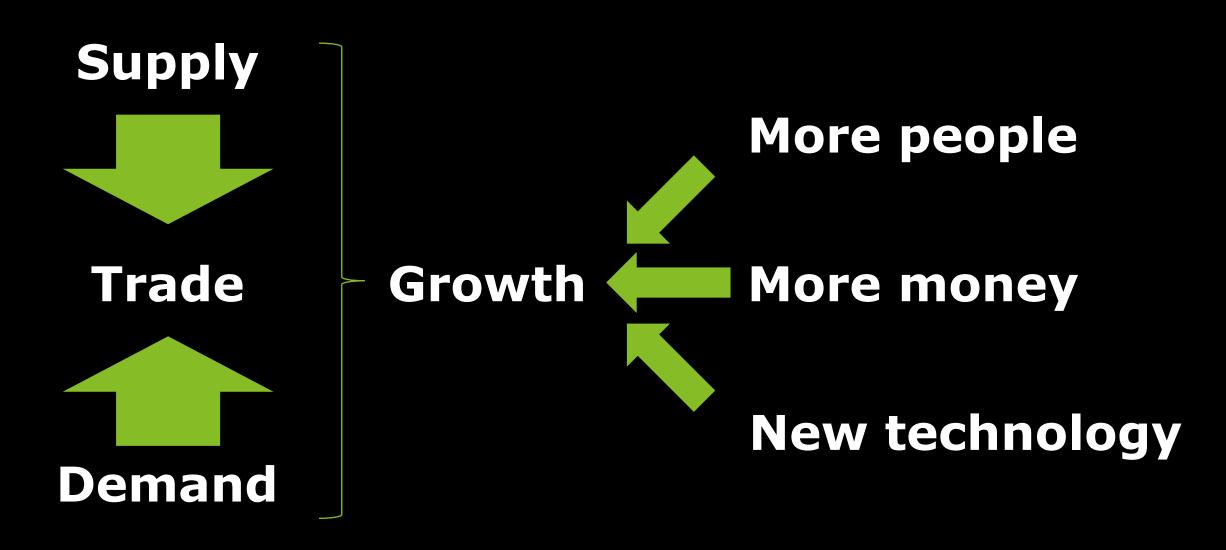
### **Demographic change and the maritime industry**

Indra Vonck, Deloitte Port Services

## "Age is just a number"

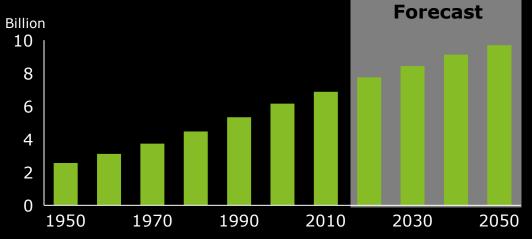
Anonymous

Demography and the maritime industry has always a story of growth and imbalance

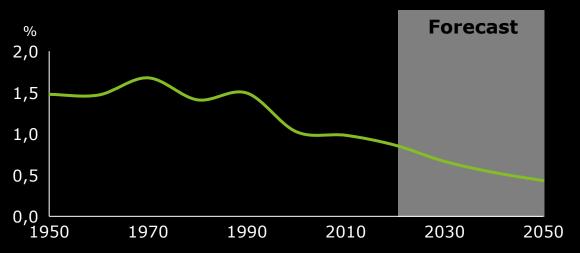


### Global demographic trends indicate a rising aging population

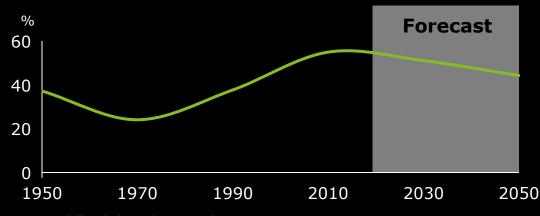




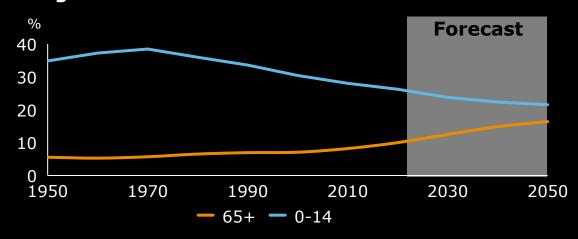
#### **Population growth**



#### Working share of population 15-60



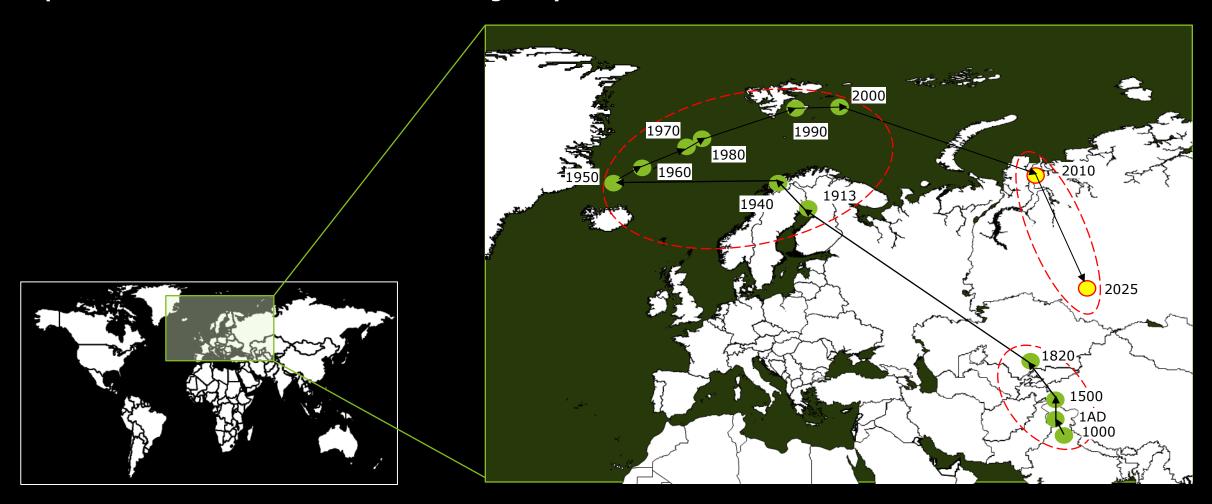
#### **Age distribution**



Source: worldbank based on UN data 2015

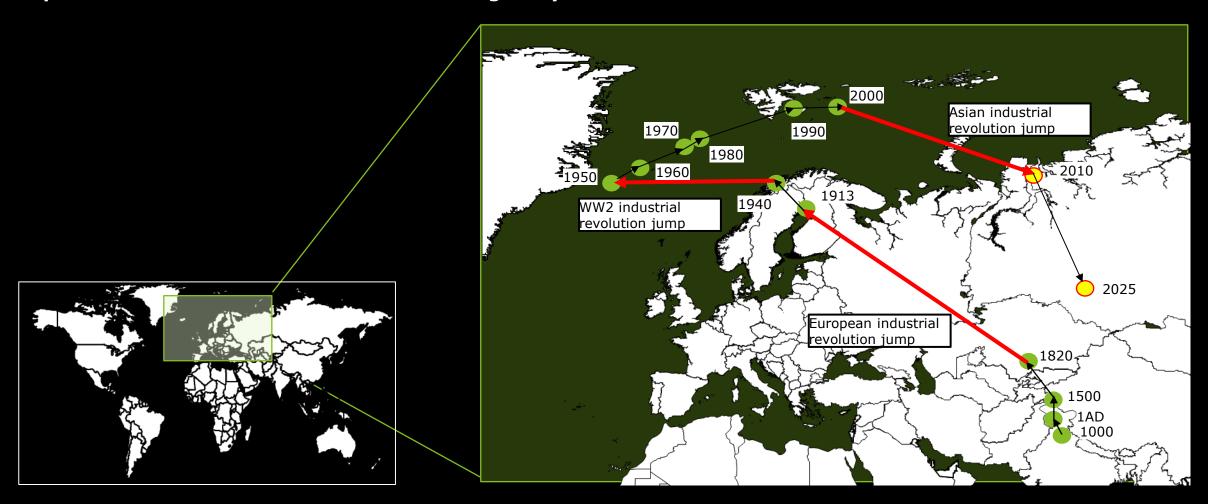
Demography and the maritime industry has always a story of growth and imbalance

#### **Expected shift in world's economic center of gravity**



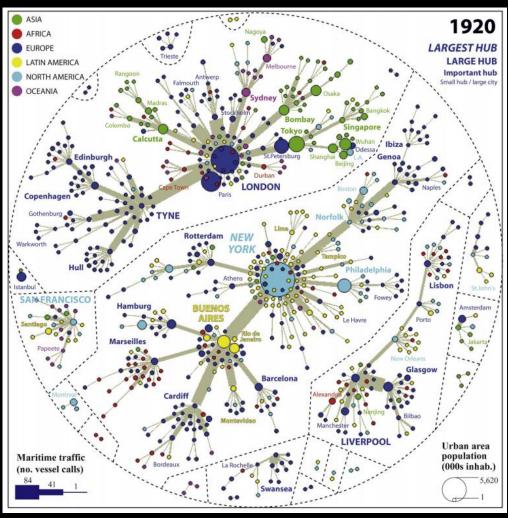
## Demography and the maritime industry has always a story of growth and imbalance

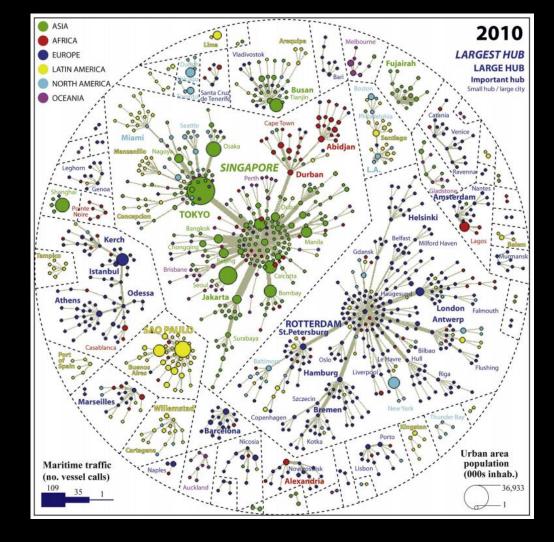
#### **Expected shift in world's economic center of gravity**



## We see this gravity shift visualized in the city mapping of maritime hubs over time

#### **Growth of maritime cities over time**





Source: Ducruet 2017

Three main demographic parameters and trends directly affect the maritime industry





- Wealth & spending
- Product mix

People age





- Productivity
- Labour force

People concentration





- Throughput expectation
- Spatial priorities

The growing middle class in Asia is leading to a decrease in labour cost driven supply chains



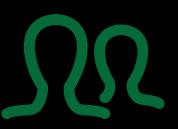


## This shift in trade intensity and structure has already been happening and is only forcasted to increase

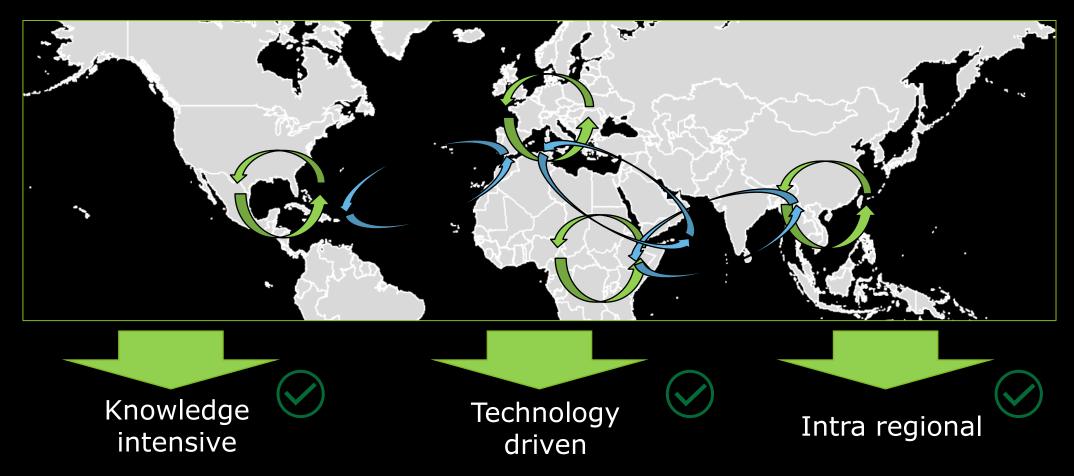


		Change in trade intensity			
		2000-2007	2007-2017		
Global innovations	Chemicals	7,8	-5,5		
	Transport equipment	11,0	-6,2		
Labour intensive	Furniture and other manufacturing	7,3	-0,8		
	Textile and apparel	8,2	-10,3		
Regional processing	Paper and printing	3,7	0,3		
	Glass, cement, ceramics	2,2	-3,1		
Resource intensive	Agriculture	0,6	-0,7		
	Basic metals	5,1	-6,2		
Labour intensive	Wholesale and retail trade	3,5	2,4		
	Transport and storage	1,7	-2,5		
Knowledge intensive	IT services	5,6	4,9		
	Professional services	2,3	0,1		

This will result in a more regionalized trade built on more knowledge- and technology driven trade flows



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The changing wealth distribution and age demographic mix leads to a more regionalized trade with smaller and more frequent sailings



#### **Increase in nearshoring**

**Smaller ships** 

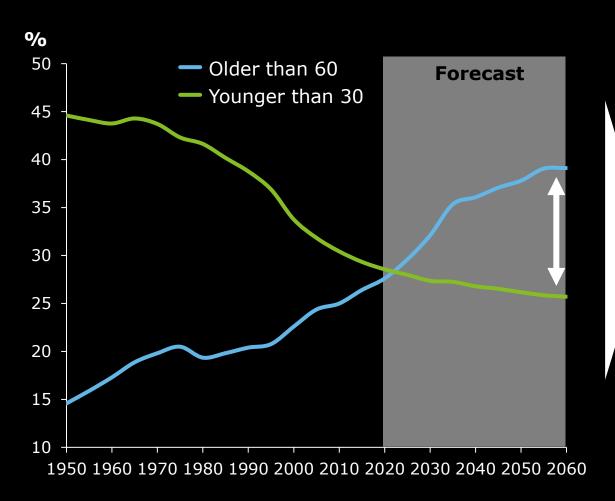
More frequent sailings

**Lower volumes and different cargo mix** 

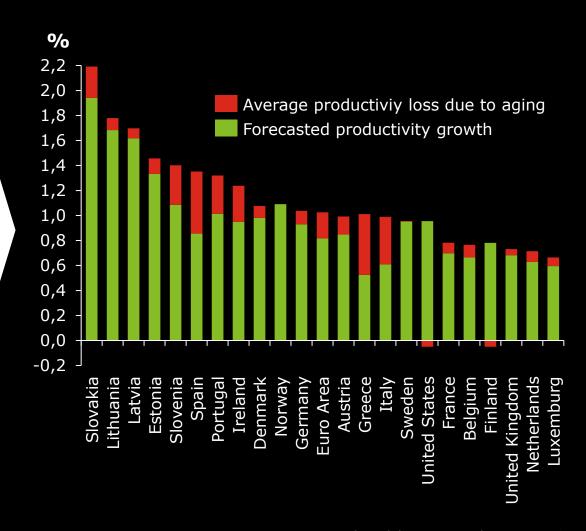
### Productivity is dropping, but technology is there to take up the slack



#### Population evolution (GE)



## Productivity growth and aging impact



Sources: OECD; EU commission; US bureau of statistics; IMF

## The maritime industry has abundant opportunities to digitize and innovate



•			•				•		
Producer	Transport node	Maritime transport	Approach services	Loading/ unloading	Storage	Industrial processing	Intermodal transport	Dry port	Hinterland transport
Virtual Reality	Intelligent Asset Development	IoT enabled remote operations	Cross-functional and geographical working	Platform solutions	Big data Analytics	Smart grids	RFID for logistics and transportation	Robotics	Drones/ RoVs
			(Zx)	Ţ	(A)				
Commodity data analytics	Big data Analytics	RFID for logistics and transportation	Internet of Things	Machine to machine communication	Robotics	Smart energy management	Autonomous transport	Collaboration tools	Smart Cities
	2.	P		(Å)	(\dagger\dagger\dagger)				
Supply analytics	Autonomous transport	Predictive maintenance	Collaboration tools	Robotics	Smart metering	3D Printing	Supply chain and vendor optimization	Single view of stock	Demand analytics
			(Ħ)					$\bigcirc$	(%)
Real-time digital resource management	Supply chain and vendor optimization	Outsourcing	Robotics	Intelligent Asset Development	Single view of stock	Safety Analytics	Drones/ RoVs	Pricing analytics	Outsourcing
(N)				<u>^</u>					
Intelligent risk and compliance	Drones/ RoVs	Autonomous transport	•	Mobile Workforce		Predictive maintenance	e		Intelligent risk and compliance

Note: Non exhaustive Source: Deloitte Port Services

## The resulting innovations will have a spin off effect on cargo and trade flows



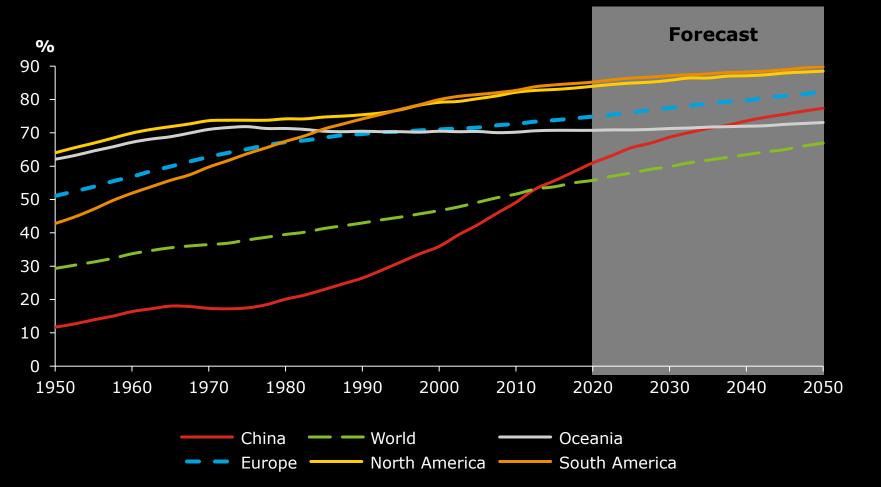
#### Impact of technology on trade flows

		Impact on trade flows				
		Primary resources	Manufactured goods	Services	Data	
Digital platforms	E-Commerce	_				
	Port community systems					
	IOT platforms					
Logistics tech	Smart materials			_		
	Autonomous vehicles			_		
	Blockchain	_	_			
	Cloud	_				
Altering production	3d printing	_				
	Automated (terminal) operations	_		_		
	Virtual assistants	_	_			
	Back office automation	_	_			
New products	Renewable energy		_	_		
	Electric vehicles			_		

Our urban centers will keep growing increasing the pressure on sustainable land use and environmental challenges



#### % of urbanisation



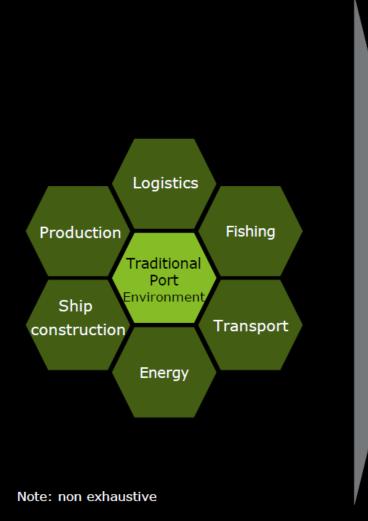


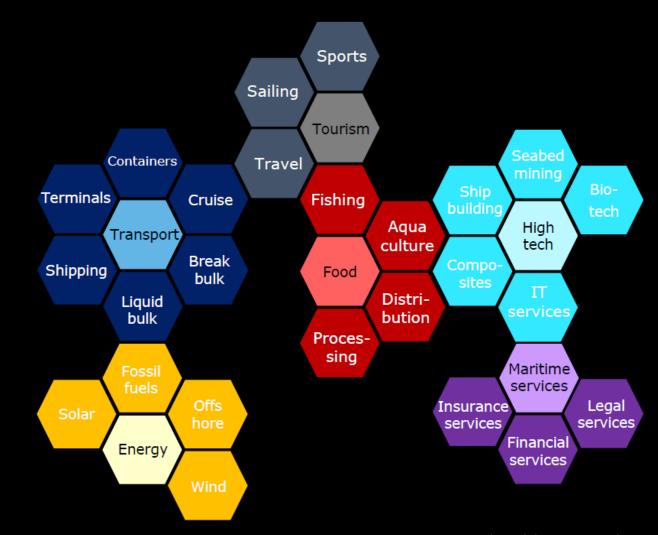


Land use pressure

## The maritime industry will be forces to think about spatial planning and environmental responsibility

#### **Evolution of land use possibilities**





### What will the future bring?

## Future of freight

- Increase in raw material flows
- Decrease in manufactured goods



#### Future of maritime sectors



- Stagnating volumes
- Changing vessel dynamics
- Growing niche markets (cruise, offshore,...)

## Future of trade (logistics)



## Future of employment

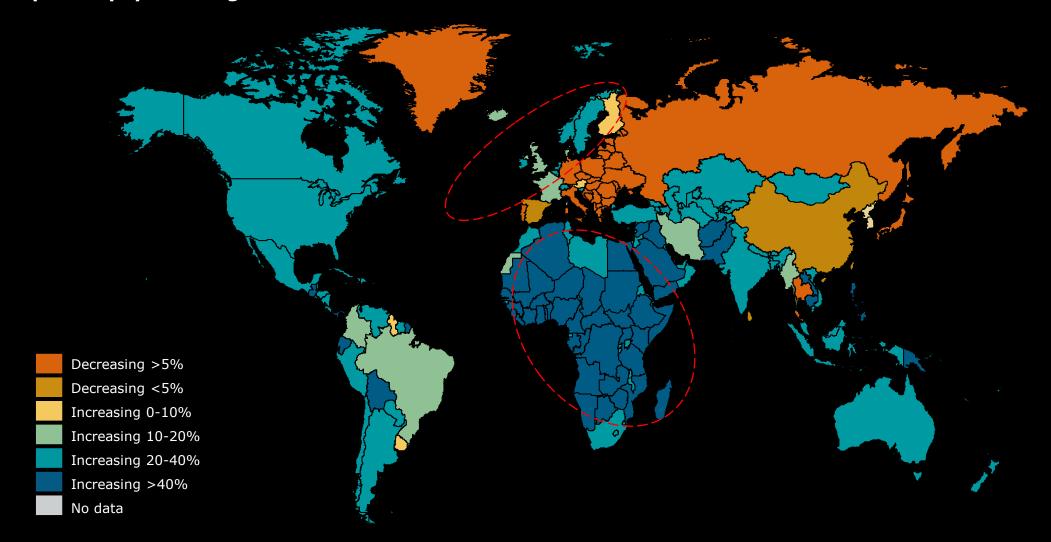


- Increase in nearshoring
- Increased use of technology

- Lower dependency on labour intensive product flows
- Focus on knowledge intensive product flows
- Increased use of technology

## What will the future bring?

#### **Expected population growth till 2050**



### Main takeaways

- We are getting older, becoming more numerous and have less money to spend
- Trade flows will become more regional, knowledge and service driven
- Technology will gain importance in our daily lives and act as a balance for decreasing productivity
- Increasing concentration of people will lead to increased social license to operate putting pressure on the way in which maritime operations are ran

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Demography and the maritime industry

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# Thank you!

Questions?