

Blockchain dans le Transport maritime & logistique

Menaces ou opportunités
sur le commerce
extérieur national

18 Décembre 2019



Port of Antwerp –

- . Key figures
- . Trade with Morocco

A truly global port

Belgium's biggest economic driver



235

Million tonnes
of freight



12,068

hectares



11

million TEU/year



144,000

jobs



1,000

companies



4.8%

GDP

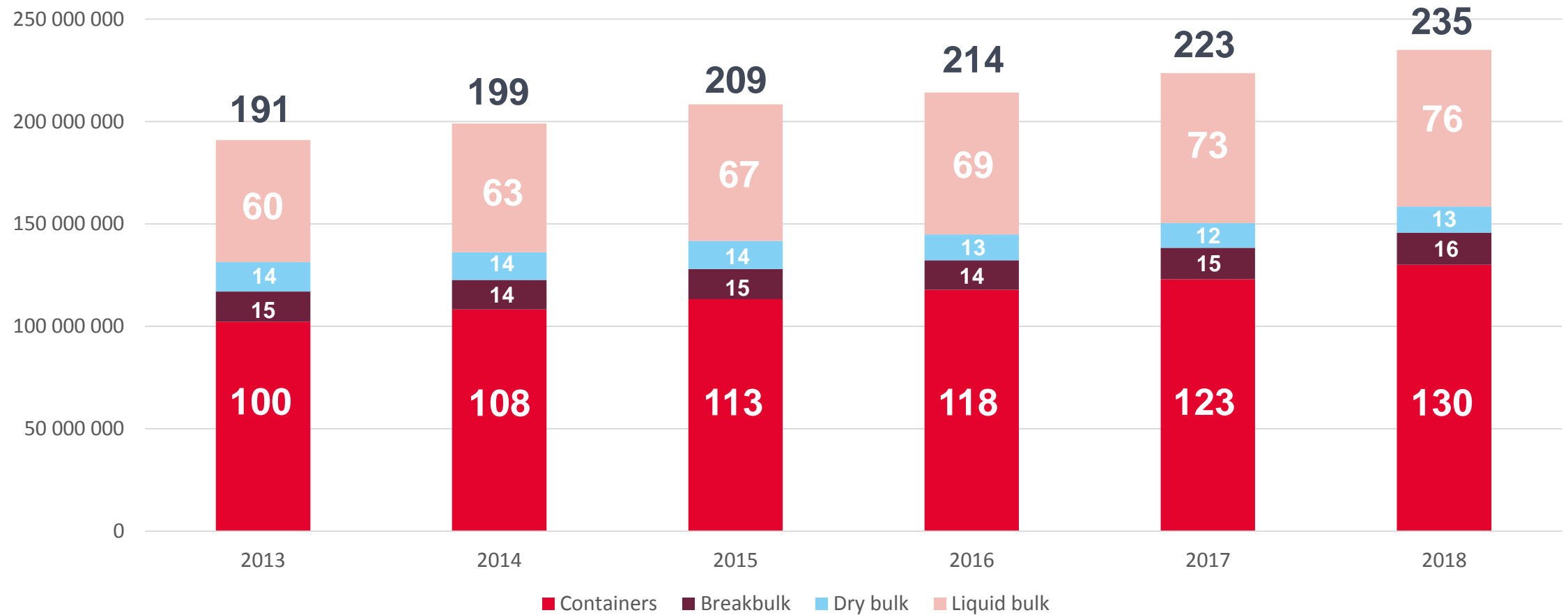


20.7

billion €
added value

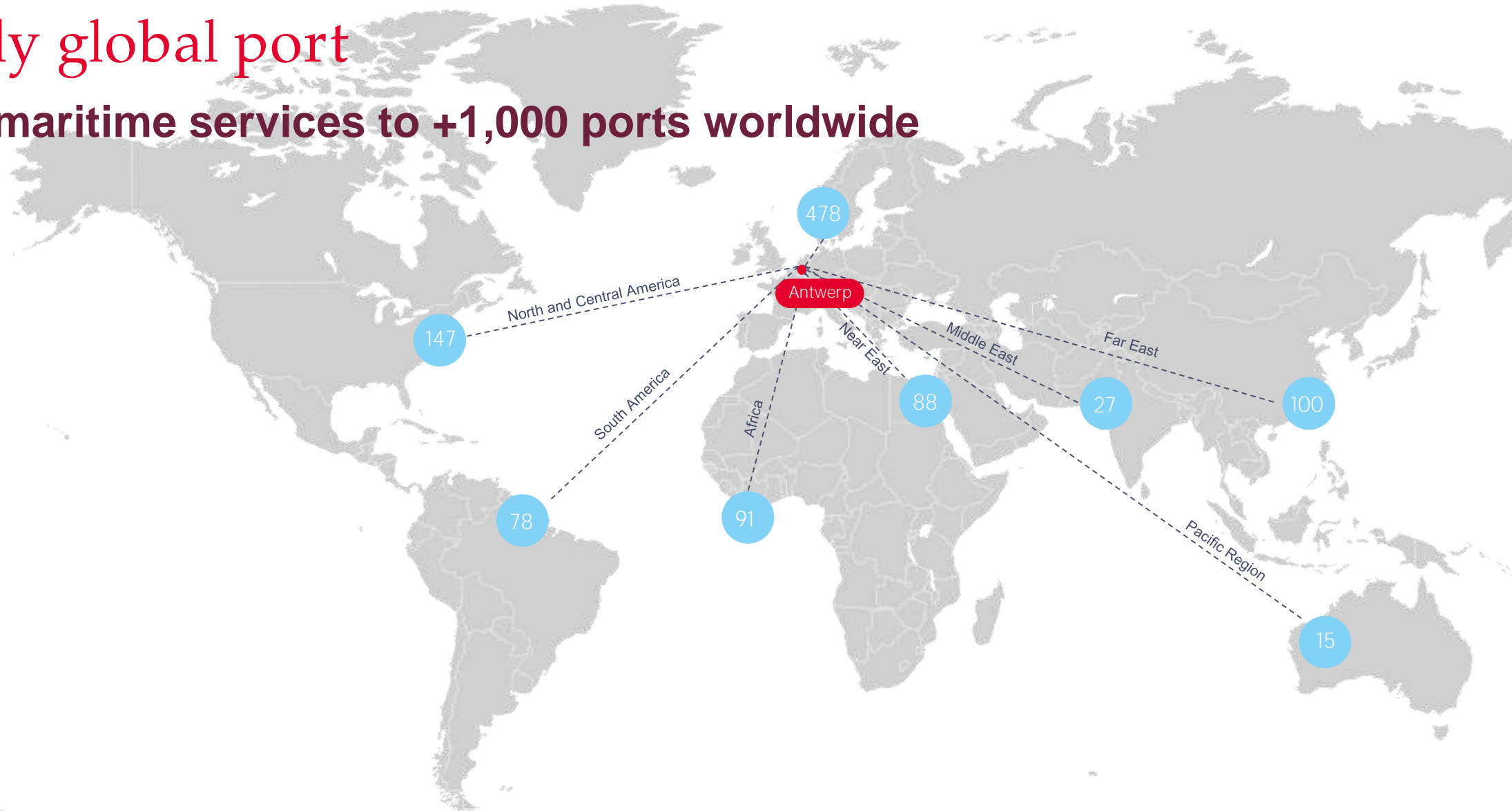
A truly global port, with sustainable growth

6th record in a row: 235 million tonnes of cargo in 2018



A truly global port

Direct maritime services to +1,000 ports worldwide



Excellent connectivity

Intermodal offer and shift 2030: more rail and inland shipping (containers)



2018 38%

2030 42%



2018 7%

2030 15%



2018 55%

2030 43%

Trade Port of Antwerp – Morocco

Yearly average over period 2014 - 2018



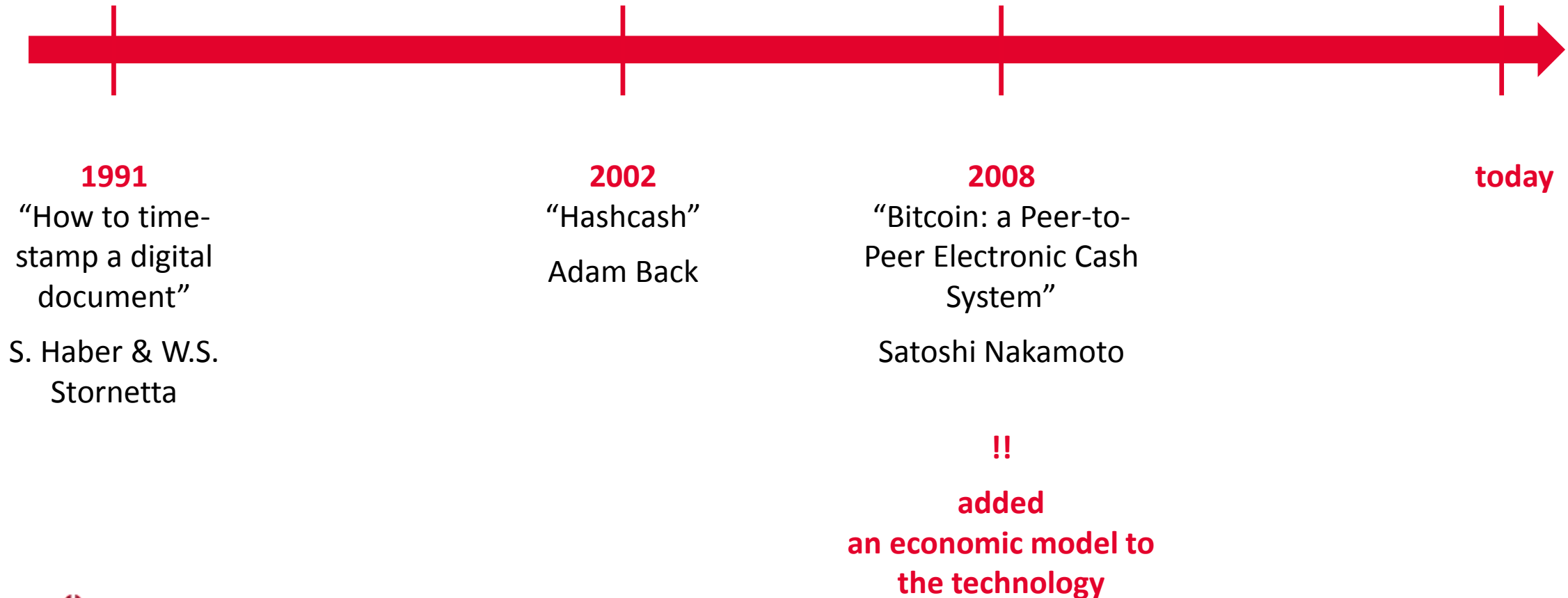
2,25
million tonnes
of freight



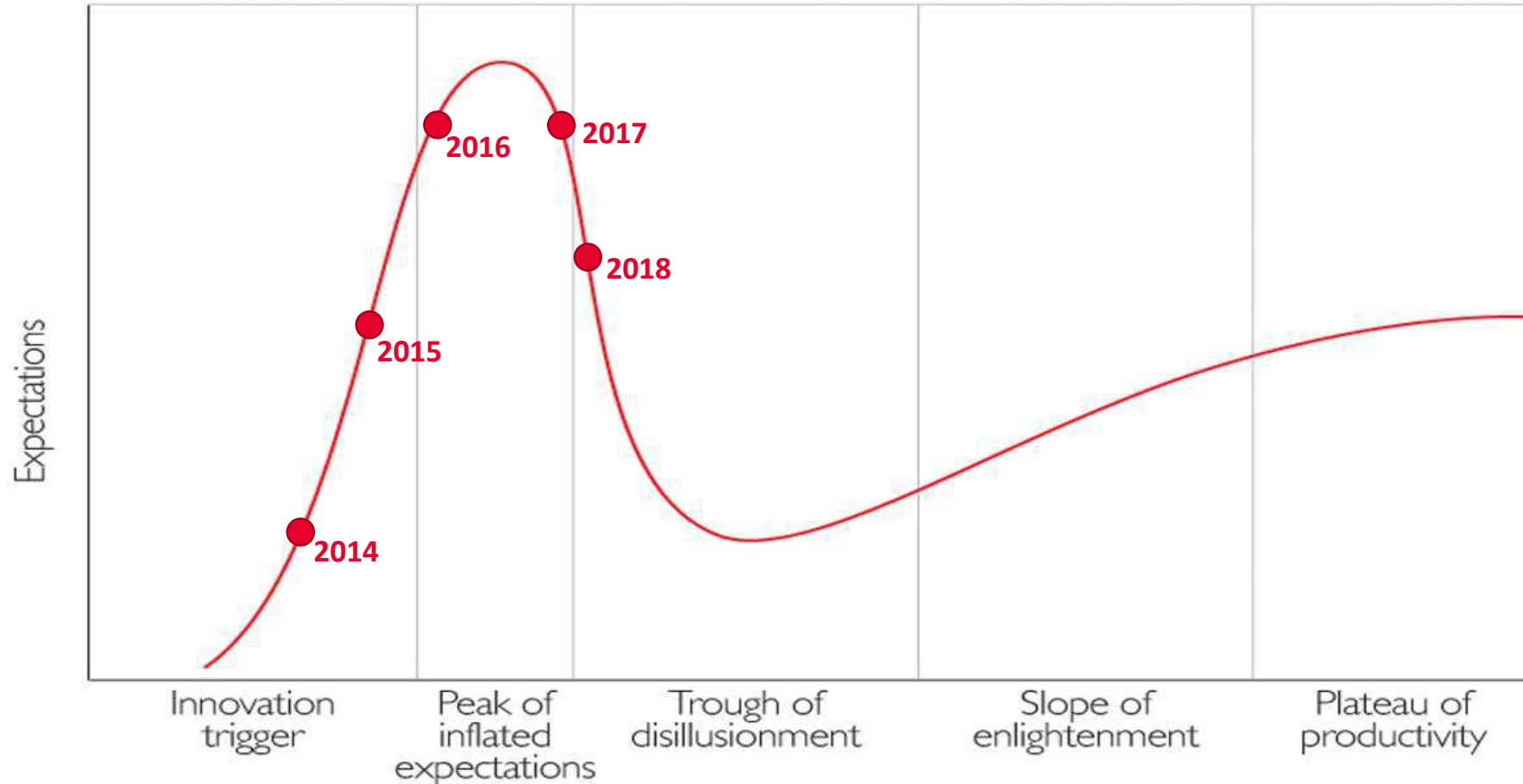
±150.000
TEU/year

Blockchain: State of play – today

Blockchain technology is not new



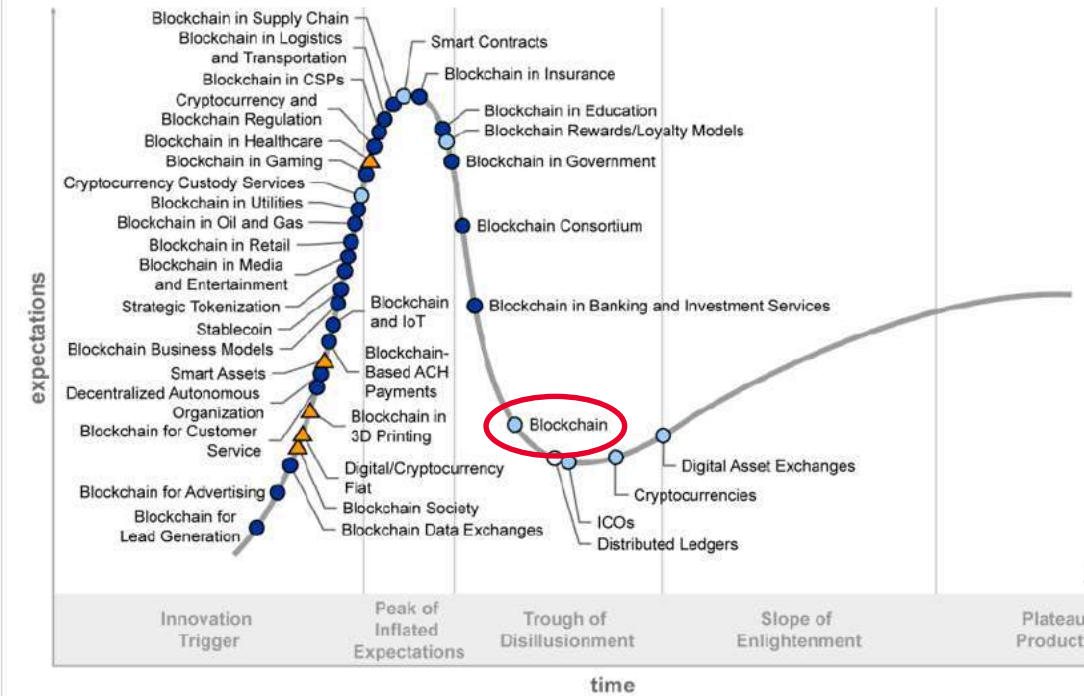
Gartner hype cycle for Emerging Technologies



Blockchain today

- Blockchain is **sliding** into the through of **disillusionment**
- will begin to **climb out** of this by **2021**
- “Blockchain is not yet enabling a **digital business revolution** across business ecosystems and may **not until at least 2028**, when Gartner expects blockchain to become fully scalable technically and operationally.”
(Avivah Litan, Research VP – Gartner)
- ... ending up with 3.100 billion \$ on economical value

Hype Cycle for Blockchain Business, 2019



Plateau will be reached:

○ less than 2 years ● 2 to 5 years ● 5 to 10 years ▲ more than 10 years ✗ obsolete before plateau

Source: Gartner
ID: 390391





“We are witnessing many developments in blockchain technology that will change the current pattern. By 2023, blockchain platforms will be scalable, interoperable, and will support smart contract portability and cross chain functionality. They will also support trusted private transactions with the data confidentiality required. All together, these technology advances will take us much closer to mainstream blockchain and the decentralized web, also known as Web 3.0”

Avivah Litan, Research VP – Gartner

Blockchain in Logistics

- 85% of the blockchain projects are stuck in experimentation mode. (stays in or frozen after the Proof-of-Concept phase)
- Blockchain-technology is only 20% of the project, the other 80% lies in the strategic domain
- Blockchain in Logistics & Transportation almost at the Peak of Inflated Expectations

Hype Cycle for Blockchain Business, 2019



Source: Gartner
ID: 390391



Today's conclusions

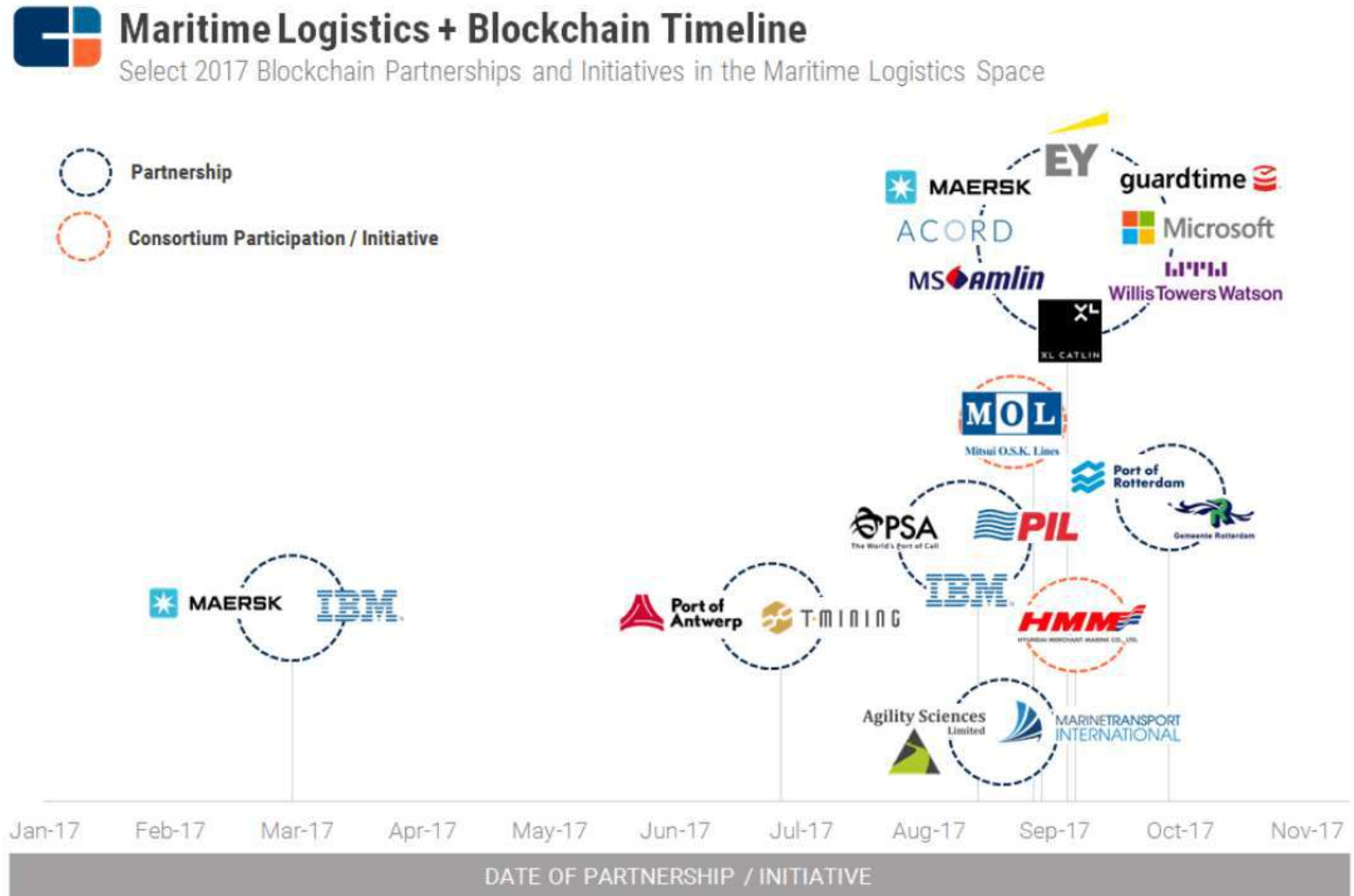
“Additionality”



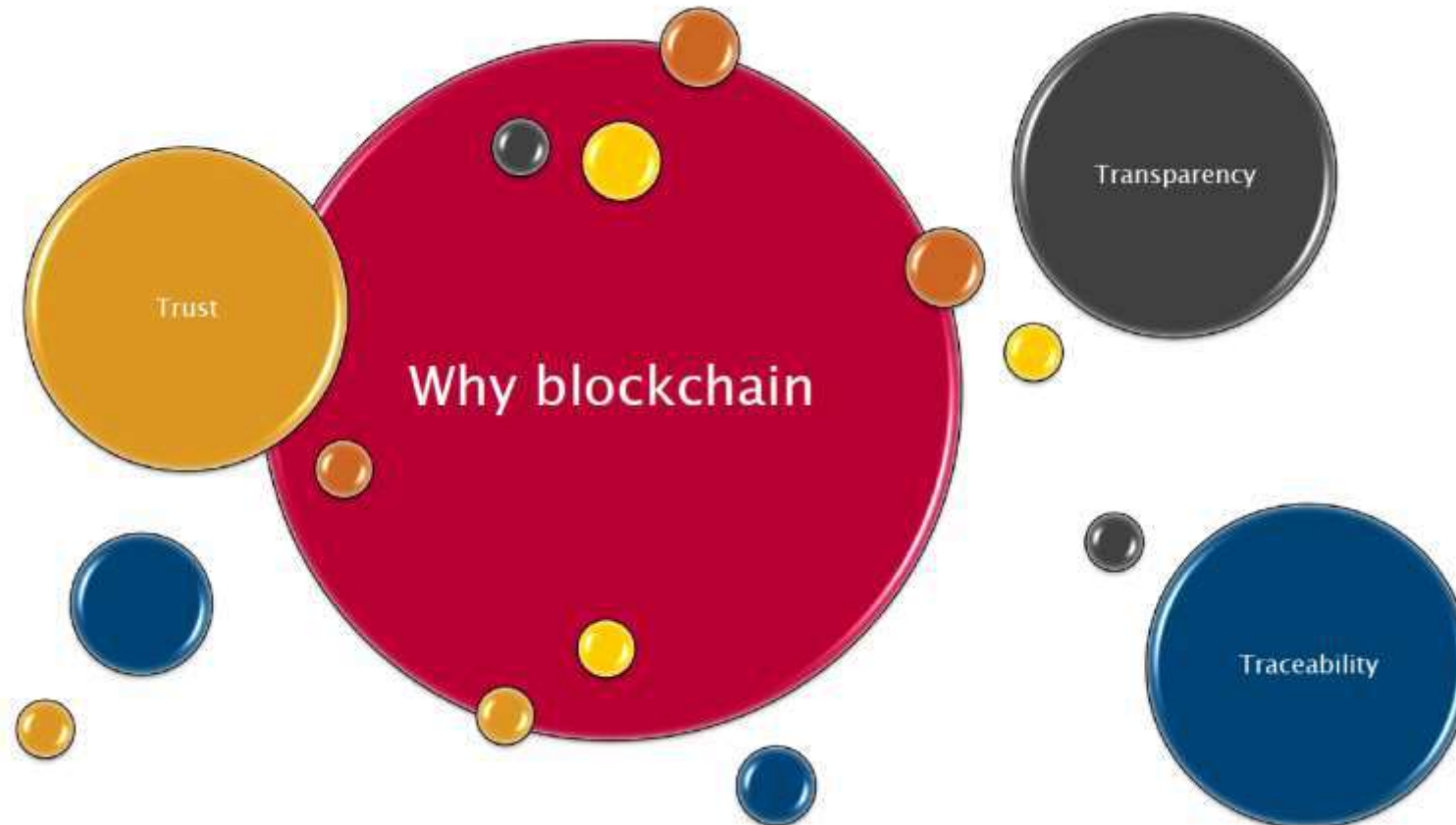
- ICT innovation in the supply chain is seen as the key for keeping competitive advantage
- Blockchain technology can help further integration, if standardization is achieved
- Full blockchain benefits are enabled only in combination with other technologies
 - Just a supporting technology ! Not an ultimate business game changer (~~disruption~~)
 - Additionality through integration with other technologies: add-on services, Machine learning & AI, IoT, Data analytics, Certified hardware, ...

Blockchain in Maritime & Logistics

Early adopters in the maritime supply chain



Why Blockchain – the 3 T's



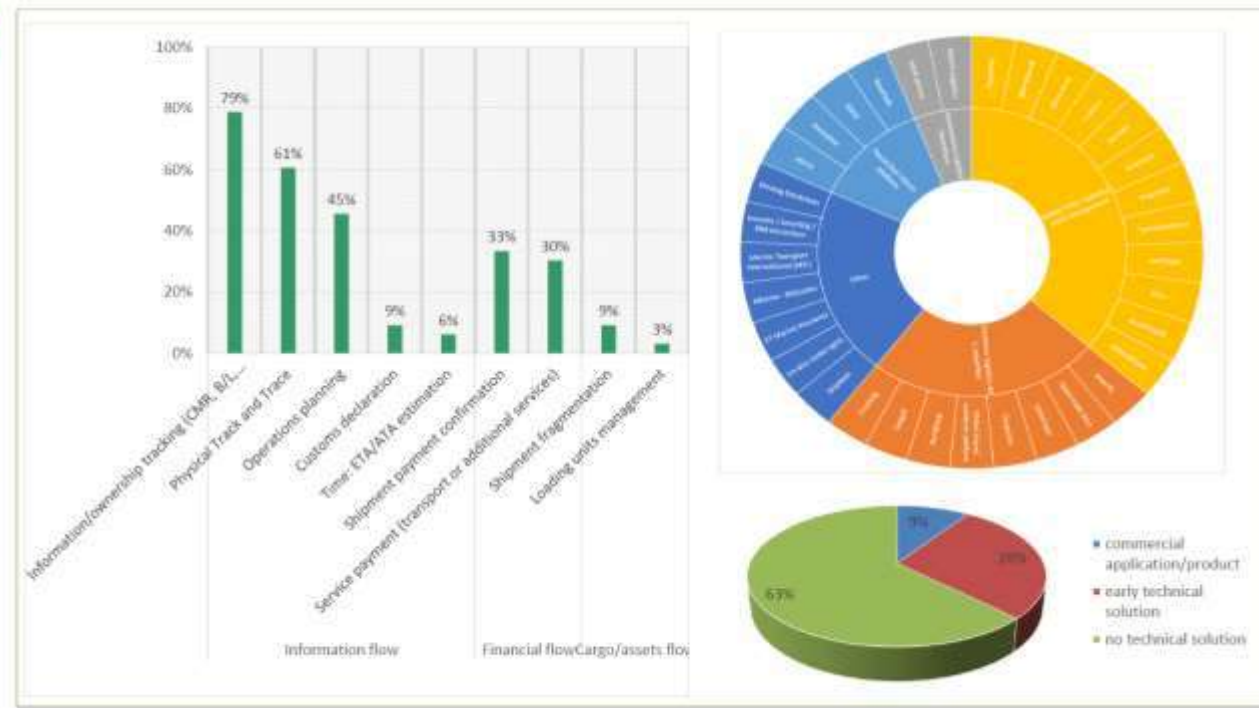
Rationale – why blockchain

The necessity to pilot on blockchain projects

- Hype – external pressure (...everybody does it ! ...and what if we don't ?)
- the trend towards collaborative innovation in the maritime supply chain
- main characteristics for piloting and/or studying:
 - the growing need for digital innovation gradually moves to the maritime supply chain
 - cost savings
 - increase the quality of products (or services)
 - further growth opportunities
 - fast technology push
 - a fast evolving and dynamic global context
- Solving inefficiencies in the maritime supply chain

Inefficiencies in the Maritime supply chain

	Port and hinterland stakeholders							Authorities				Other third parties			
	Shipper	Freight forwarder	Customs declarant	Shipping line	Terminal operator	Hinterland transport		Receiver of the goods	Port Authority	Customs	Harbor master, pilotage etc.	Others (e.g. Police, Sanitary and veterinary authorities)	Agent	Financial institutes	ICT providers
Data-related inefficiencies															
Information/document flow															
Information/ownership tracking (CMR, B/L, phytosanitary...)	X	X		X	X	X	X	X	X	X	X	X	X		X
Operation planning				X	X	X	X	X				X			X
Customs declaration	X	X	X	X		X	X		X	X		X	X		
ETA/ATA estimation				X	X	X	X	X		X	X				X
Financial flow															
Late shipment payment	X	X	X	X				X							X
Late service payment	X	X		X	X	X	X								
Cargo flow															
Shipment fragmentation (under-capacity utilization)	X	X				X	X	X				X			
Loading units management				X	X	X	X								



Moving a container from A to B

> 30 different parties involved

> 200 communication interactions

Poor supply chain efficiency



> 99%

of freight transport
operations within EU still use
paper documents

Poor supply chain efficiency



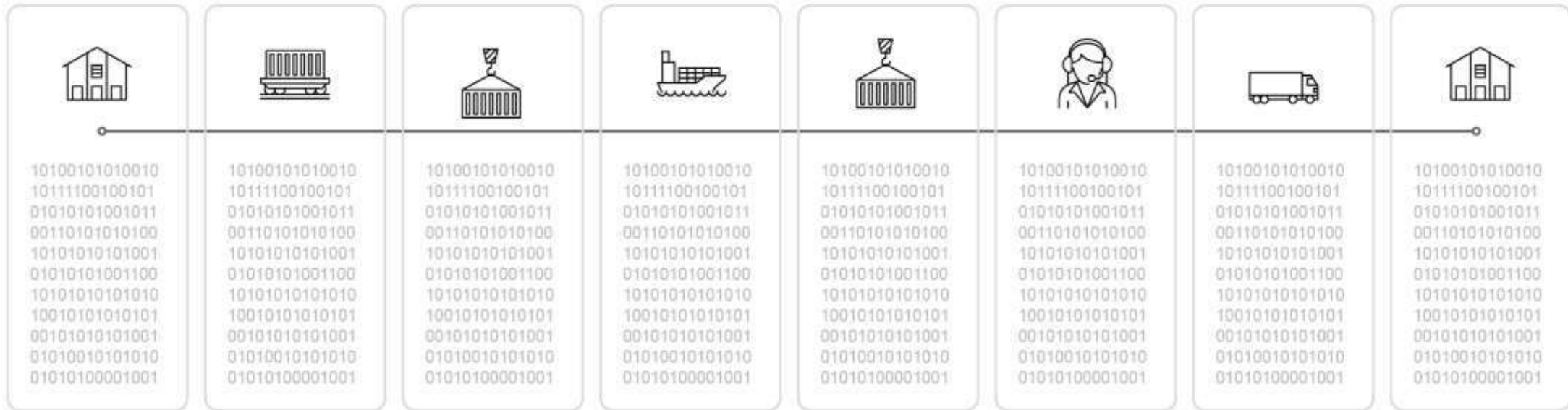
Up to **50%** of the cost of moving a container is related to paperwork

Terminal reposition a container
4 to 5
times

1 out of 4
trucks is driving empty
on our highways

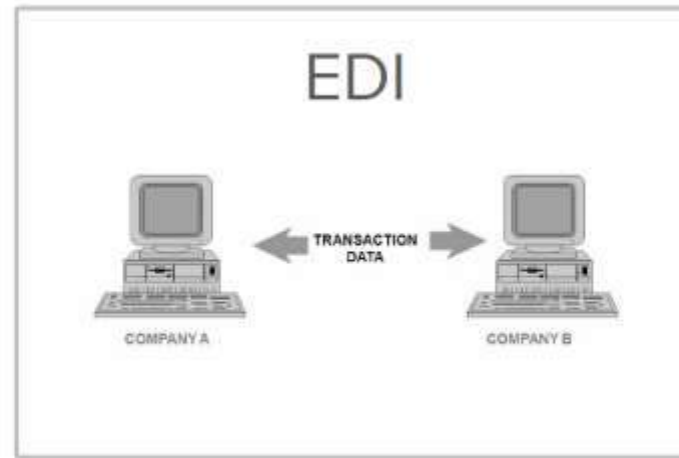
Current information flow

Interconnected **data silo's**



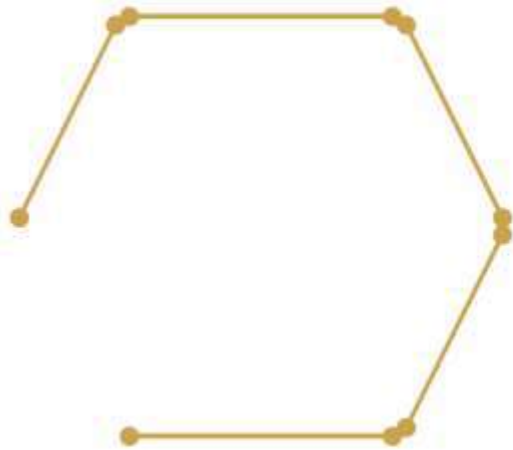
Optimized company operations resulting in sub-optimized end to end chains

Outdated point-to-point information technology

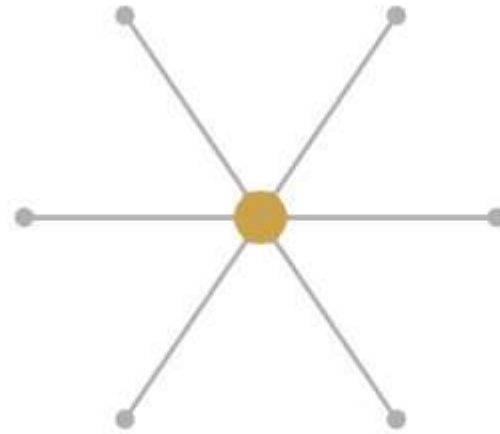


So we need another infrastructure to collaborate..

Point-to-Point

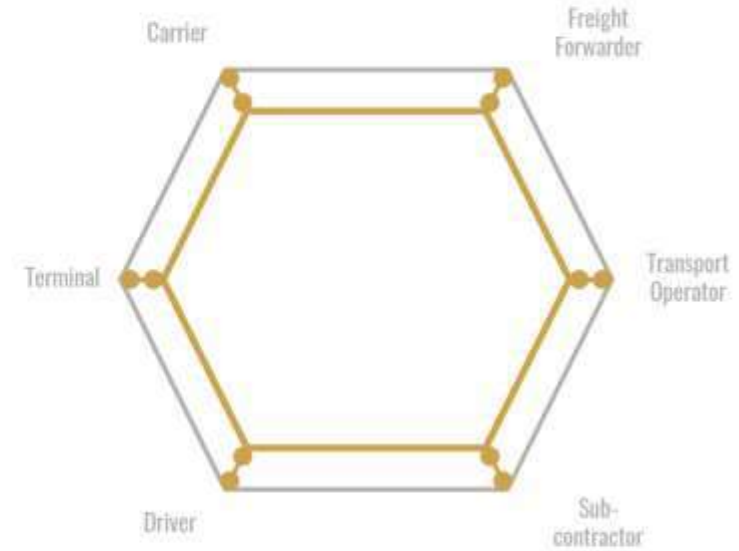


Centralised platform



Cloud
trust in middleman

Decentralised platform



Blockchain
Peer-to-Peer
trusted collaboration

Some Blockchain projects

- within the port area
- port & hinterland / transport

Use Case - Physical Flow

Secure Container Release

50 tons of narcotics
found in the Port of Antwerp
in 2018

Port of Antwerp



The MSC logo is on the left, the PSA logo with the tagline 'The World's Port of Call' is in the center, and the BDP International logo is on the right.



Use Case - Document Flow

Secure Document Workflow

Phytosanitary Certificate



administrative cost of
€8 billion
related to processing of
freight transport documents
in the EU

Use Case - Chainwise Collaboration

Chainwise collaboration

today a terminal needs to
reposition a container

4 to 5

times before releasing it

Next Mode of Transport





TEST, INSPECT, CERTIFY, TRAIN & CONSULT



Safety First



Efficiency



Quality



Sustainability

for a safe & efficient environment



Systemen in het netwerk



Container
boeking



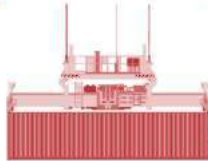
Boeking &
planning



Track & Trace



Yard &
terminal
operaties



Yard en
terminal
operaties



ERP



Depot &
stockage



Transport
management



Warehouse
management

Use cases

When to use blockchain

- in a B2G-environment – when issuing legal documents: declarations, certificates, permits, ...
 - Importance of timestamps when issuing, delivering freight documents on time, etc
- in a B2B-environment:
 - when there is no contractual relation between stakeholders
 - by combining the 3 different flows in the supply chain



Business cases

Practical cases proven to work in port area & hinterland transport

- Certificates (phytosanitary, Vinçotte case)
- Transparency in
 - multimodal transport (container pickup – secure container release, NMoT)
 - combined transport – barge & rail (H.Essers case)
- e-Documents & interoperability amongst freight documents
 - e-B/L
 - e-CMR
 - e-CIM
 - e-AWB

Challenges & obstacles for adoption

Business

- Change management – awareness–building executives
- Scaling – significant investment as not ready for mass adoption (not competitive)
- Set up early adopters ecosystem
- Data sharing – culture switch to open up company boundaries for mutual advantages

Organization

- Training & acquisition of personnel
- Integration with legacy – data integration, digitization, automation, process standardization
- Rollout – develop underlying infrastructure for sustainable & scalable impact

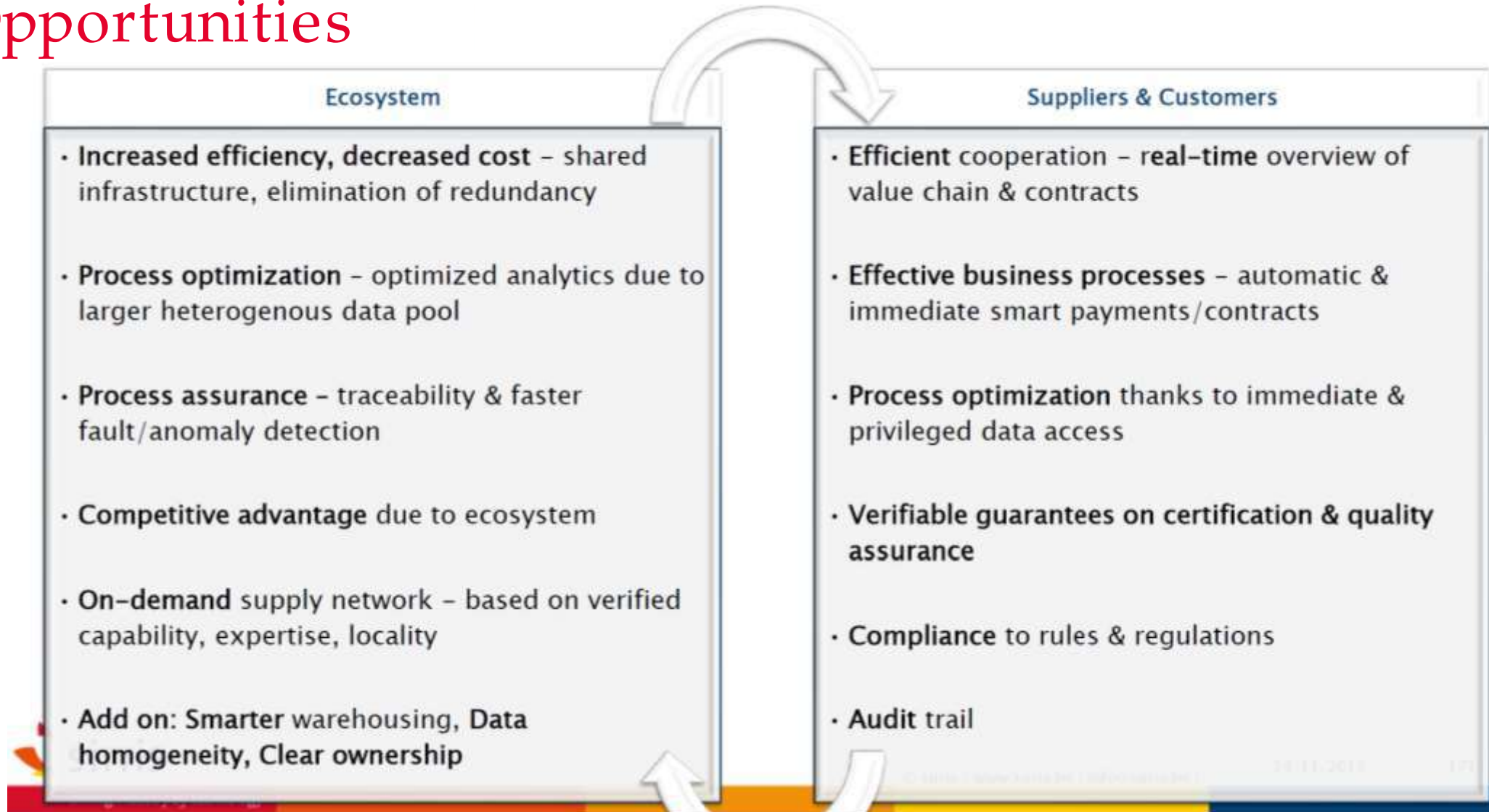
Product

- Switch to decentralized track & trace ledger instead of product data per department unit
- Integrate external product life cycle
- Confidentiality
- IP
- GDPR

Technical

- Security metrics
- (IoT) data integrity
- Data standardisation
- Domain knowledge to understand & use the data
- Data analytics – combining internal & shared knowledge
- Hardware conformance

Opportunities



Blockchain - Conclusions

not benefitting from
the cryptocurrency
attention

non-finance industry is
only discovering its
potentials, but has a
different personality

business shock to
blockchain adoption
still too big compared
to alternatives

not a standalone game
changer

companies are waiting
& looking for example
cases, early adopters,
multinationals



“No one can whistle a **symphony**.
It takes a **whole orchestra** to play it.”

H.E. Luccock

Merci beaucoup !



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