



Towards a Digital and Real-time Supply Chain



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Learn more at cargovalue.com and klavenessdigital.com

Agenda:


1. Digitization
2. Klaveness and the development of CargoValue
3. Industry pain points and the CargoValue proposal
4. The future of the raw material supply chain
5. The role of ports and terminals

Digitization. SaaS what?

Cloud: Information, computing power and applications available through a web browser.

Platforms: Microsoft Azure, Amazon Web Services, IBM Cloud/Watson and Google Cloud are services that host applications like CargoValue.



SaaS: Software-as-a-Service. Lives the cloud and is accessed through a web browser  CARGOVALUE

Digitization: Going from manual processes towards automation and AI. **Real-time:** Happening now, i.e. AIS positions, stock prices, temperatures

IoT: Internet-of-Things. Apply sensors with a transmitter everywhere to send data for analysis/updates.

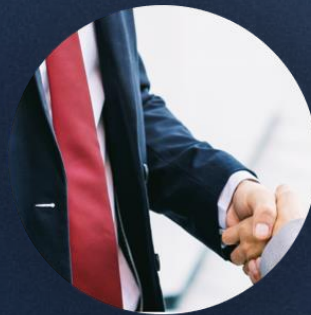
About us

Leveraging the knowledge and experience from a 70+ year old shipping company



We know shipping

Combining over 70 years of shipping knowledge and experience from Torvald Klaveness with the latest advances in technology



Built with customers

Developed in collaboration with more than 20 leading companies in the metals and mining, agricultural and energy industries



In-house technology

20 engineers with strong capabilities in software development, machine learning and big data



Agile implementation

Demonstrated ability to help companies successfully transition from spreadsheets to CargoValue effortlessly

Working closely with the industry

One of the largest **aluminium smelters** in the world



One of the largest **alumina refineries** in the world



One of the largest **mining companies** in the world



Why CargoValue? Identifying industry pain points



Demurrage

Identify and address delays early to avoid demurrage



Supply risk

Realign your shipping plan in real-time to avoid running low on stock

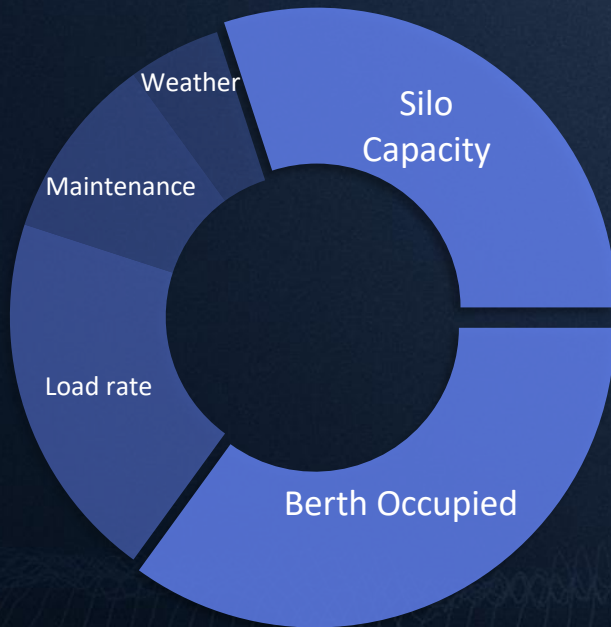


Safety stock/ Working Capital Cost

Improved scheduling visibility and inventory control allows you to reduce working capital

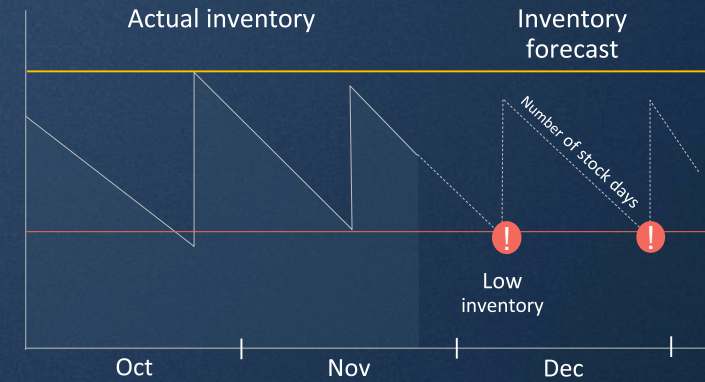
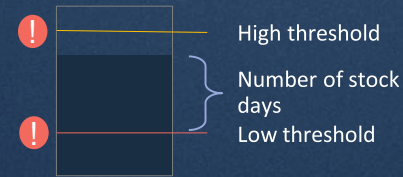
Pain point – demurrage and supply risk

DEMURRAGE CAUSES



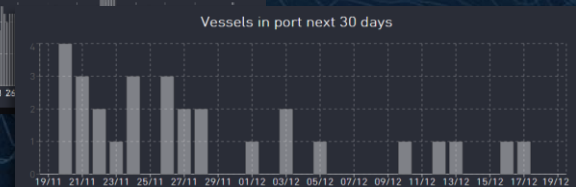
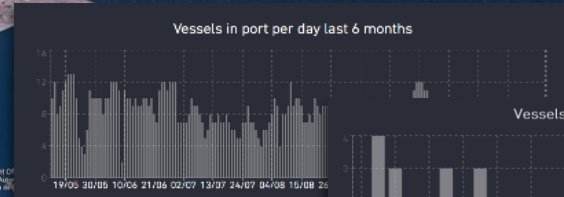
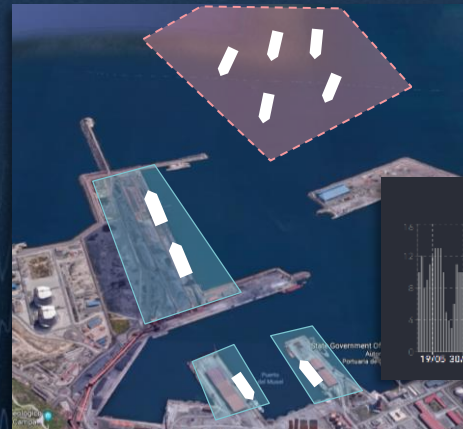
Inventory monitor

Avoid high or low inventory levels by planning and forecasting how inventory will develop over time



Port Insights

Plan incoming shipments according to historic, live and future data of vessels in port



Pain point - Working capital costs

Example: Lower safety stock requirements



Increased scheduling visibility and inventory control will lower safety stock requirement over time

Action: Lower safety stock by 3 days ► Frees up millions in working capital

Inventory settings

Max capacity
120,000 MT

54,713.4 MT

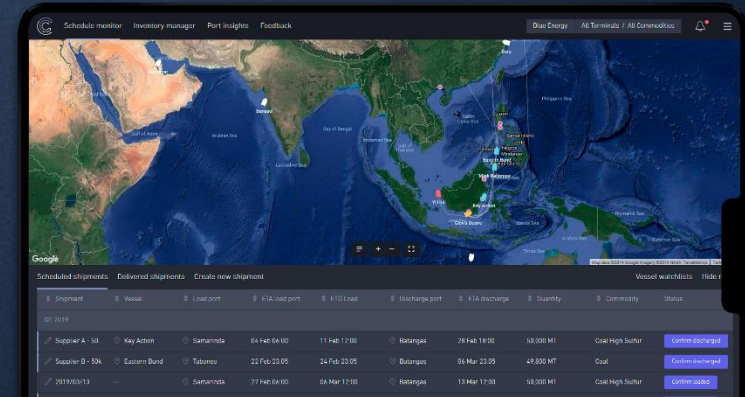
High threshold
100,000 MT

Low threshold
34,000 MT

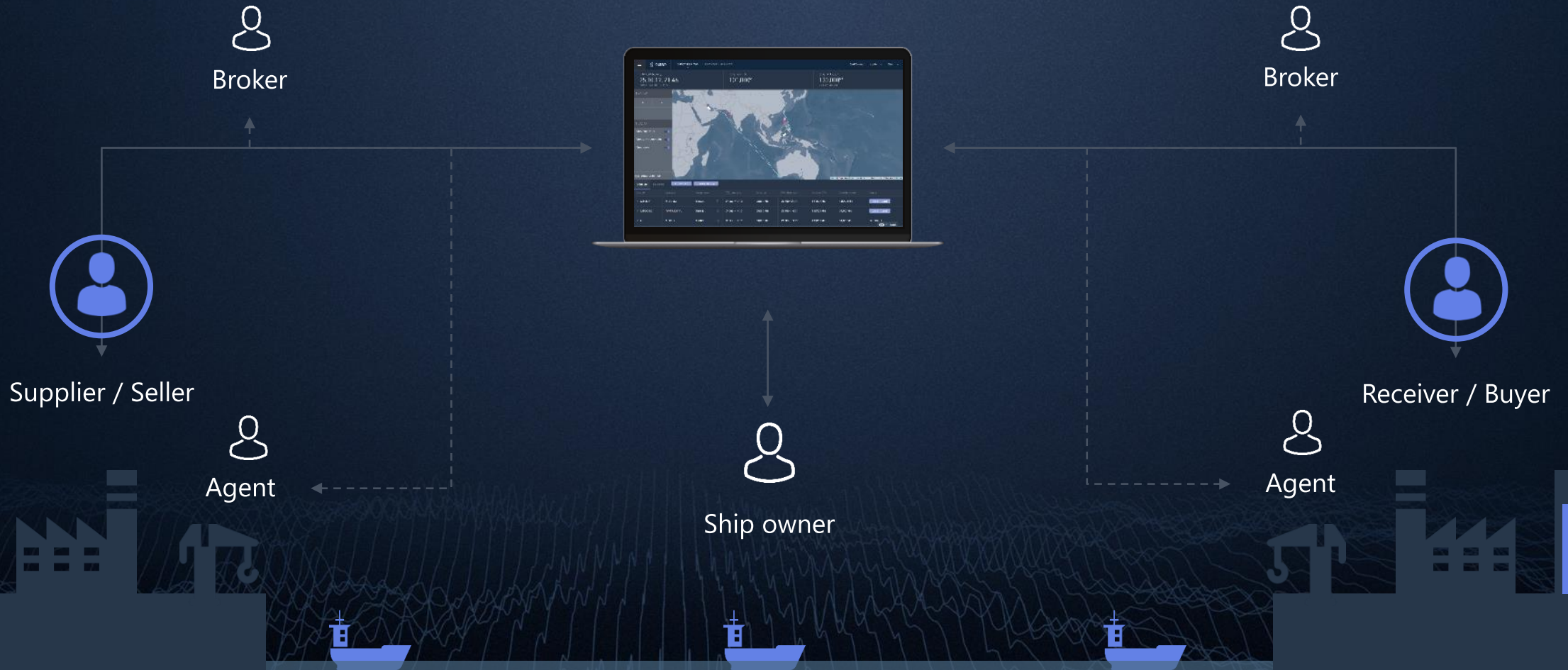
Critically low threshold
20,000 MT

Adjust See overview

Gain point – from lack of collaboration to common workspace



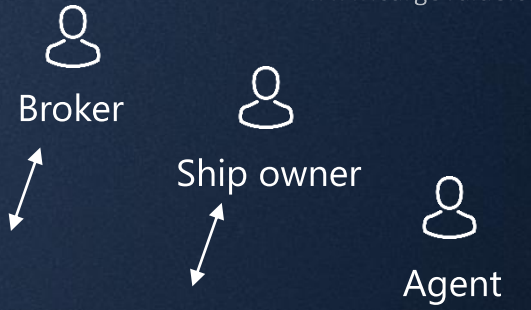
A single workspace for internal and 3rd party collaboration



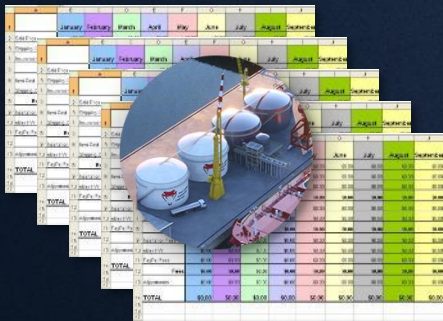
The role of the terminals

- At the heart of the sea borne materials supply chain

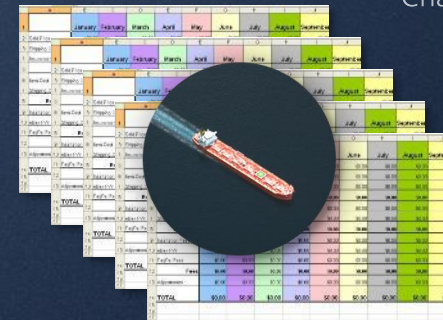
Ocean based transportation



Production planning



Port and terminal



Land based transportation



The future of the raw material supply chain

Advanced Analytics



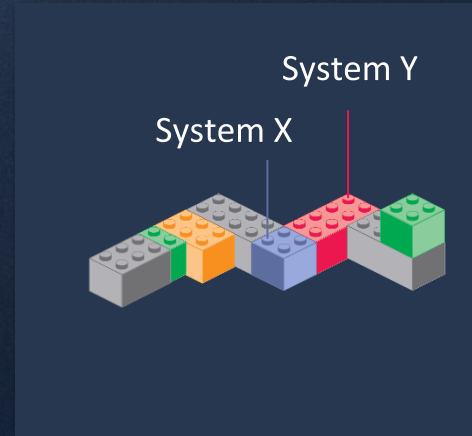
Machine learning applied to supply chain data

Seamless collaboration



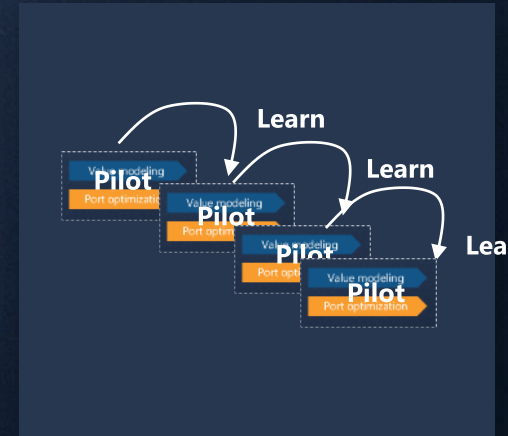
Secure stakeholder collaboration and information sharing

SaaS and APIs



Modern APIs enable secure integrations across systems

Agile implementation



Learn what works before scaling initiatives and solutions

Schedule monitor Inventory manager Port insights Feedback

Blue Energy Inbound / All Terminals / All Commodities

Daily inventory overview
See the inventory levels for all terminals and commodities.

01 Oct 2019 Yearly overview

Batangas

Coal 299,209 MT

View Inventory

Coal Blending 5 MT

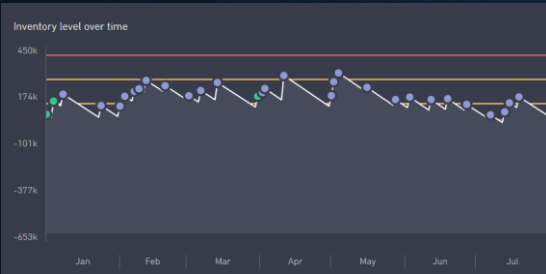
View Inventory

Coal High Sulfur 66,267 MT

View Inventory

Coal Low Sulfur 78,825 MT

View Inventory



Schedule monitor Inventory manager Port insights Feedback

Blue Energy Inbound / Batangas / Coal

Next delivery
Banastar (9228045)

22 Sep 12:00

Stock on ETB
75 stock days

227,578 MT

Stock in transit
On next arrival

101,631 MT

Scheduled shipments Delivered shipments Shipment timeline Create new shipment Vessel watchlists Hide map

Shipment	Vessel	Load port	ETA load port	ETD load port	ETA discharge	Quantity	Stock on ETB	Stock in transit	Status
Q3 2019									
Shipment 4	Green Point	XINGANG TIANJIN	20 Aug 06:00	27 Aug 12:00	15 Sep 12:00	51,631 MT	265,578 MT	51,631 MT	Loaded
Shipment 5	Banastar	Aaheim	13 Sep 00:00	20 Sep 06:00	22 Sep 12:00	50,000 MT	227,578 MT	101,631 MT	Confirm loaded
Q4 2019									
2019/10/10	Baffin	Tarakan	01 Oct 17:20	05 Oct 12:00	10 Oct 12:00	50,000 MT	275,209 MT	50,000 MT	Not Loaded
2019/10/26	—	Taboneo	14 Oct 12:00	16 Oct 12:00	26 Oct 12:00	1 MT	277,209 MT	1 MT	Not Loaded
2019/11/06	—	Taboneo	25 Oct 12:00	27 Oct 12:00	06 Nov 12:00	50,000 MT	244,210 MT	50,000 MT	Not Loaded

Ports around the world

Port insights Feedback



Port insights Feedback



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Port insights Feedback



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