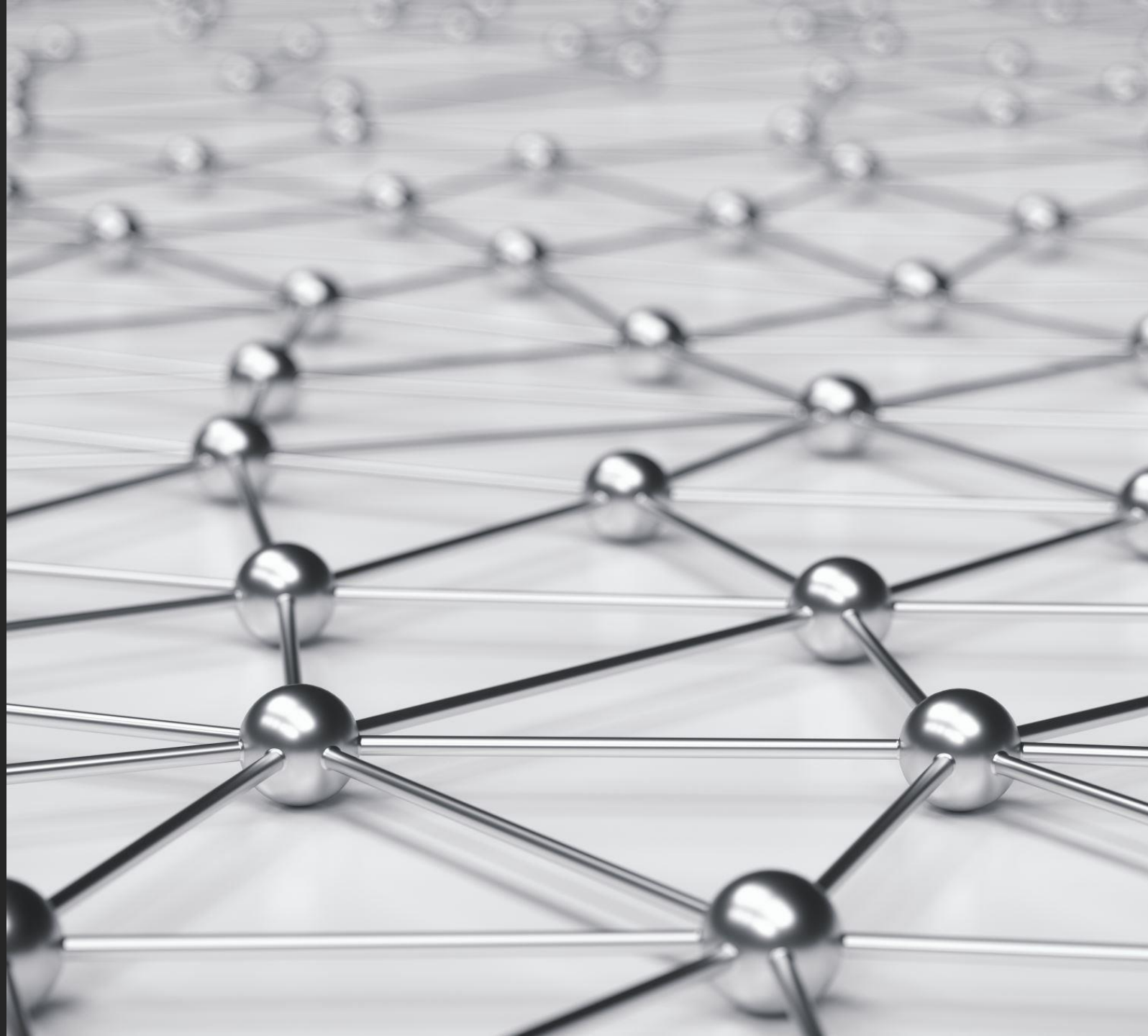


Big Data,  
Blockchain, AI,  
Machine  
Learning, IoT,  
Digitalization

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..... AND OTHER THINGS  
THAT WILL SAVE THE WORLD



.....but the root of the success of all these items will depend on the quality, quantity and timeliness of INFORMATION.

..... And how to act on this information.

**Who stands to benefit from more optimization? The shippers obviously - but also the ancillary industries around shipping which will make the shipper more efficient in the long-run. – Insurance Companies, Banks, Audit, Traders, Customs.**

Real-time information is needed by the Maritime Industry to support these technology tools in 3 different geographic locations to enhance optimization.

- ❖ On Land
- ❖ On Sea
- ❖ In Port

## On Land:

- **Verify the fuel on the incoming vessel**
  - **Verify the fuel being onboarded**
  - **Post-fill Verification**
- 
- Reduce wait times and verify fuel specs so that additional information can be derived from this.
  - Blockchain ability to monitor fuel through the on-land supply chain.

## On Sea:

- **Real Time monitoring of fuels for engines**
- **Real Time monitoring of lubricants**
- **Testing of fuel for sediment or microbes**
- **Cargo Safety: Are the liquids of ISO Containers safe?**
  - Supply data to logistics companies so that they can make informed decisions about correct fuel usage and lubricant condition.
  - I-IoT applications for monitoring fuel on board.
  - Sensors to geo-map dangerous liquid cargoes.

## **In Port:**

- **Expedited Customs -cargo/contraband identification**
- **Correct Manifest for Shippers – and Insurance Companies, Banks and Audit**
- Better geo-fencing abilities for moving cargos seamlessly through ports.
- Embedded sensors can be scanned for quicker transit through customs.



Optimization comes from better input sources.  
Not from more data.

The ability to shape this data and reference it will allow better decisions and more transparency to all the partners of the shipping industry.

Perceptive Sensors utilizes ultrasonics to identify liquids from the exterior of a container and delivers this information to be acted on.