

UNECE

Inland Water Transport Workshop

**Digitisation and its role in
optimizing Management of
Maritime Operations**

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The power of two little letters - AL



WHAT IS **DIGITISATION**?

- Digitisation is the process of converting information from a physical format into a digital one.
 - For example: John scans a signed NDA and saves this scan as a PDF. He then saves this PDF to his C drive.

WHAT IS **DIGITALISATION**?

- Digitalisation is the process of leveraging digitisation to improve business processes.
 - For example: Jane scans a signed NDA and saves this scan as a PDF. She then uploads this PDF to the cloud so she can access the NDA anytime and anywhere.

What does this mean?

DIGITISATION VERSUS **DIGITALISATION**

- In the above examples, both John and Jane have **digitised** a part of their business process, but Jane's business process is more **digitalised**. She is leveraging **digitisation** to improve business processes to a greater degree.
- While **digitalisation** carries implicit positive connotations, **digitisation** does not.
- **Digitisation** is an act that may enable **digitalisation**, but the latter always requires the former.

The Maritime World

- There is change afoot
- Backdrop of:
 - Slow growth in demand
 - Oversupply of vessel capacity (6 – 9% in 2020)
- New players and pressures
 - \$3.3 billion has been invested in digital start-ups in the shipping and logistics sector:
 - Amazon – Licence to operate as an assetless cargo forwarder between China and the US
 - Flexport (A technology based freight forwarder) - \$200 million VC investment (October 2017)

Digital Trends **or** Buzz Word Bingo

- E-Platforms
- Advanced Analytics
- Internet of Things
- AI
- Autonomous Vessels & Robotics
- Block Chain
- Cyber Security

Digital Trends

- E-Platforms
 - **Significant impact**
 - Operations
 - **Disruptive impact**
 - Commercial

Online Booking

Online cargo management

Customer personalisation

Digital Trends

- Advanced Analytics

- **Significant impact**

- Commercial

- **Disruptive impact**

- Planning
 - Operations

Network optimisation

Lead generation

Demand forecasting

Dynamic pricing

Empty container repositioning

Digital Trends

- Internet of Things
 - **Disruptive Impact**
 - Operations

Vessel machinery monitoring
Reefer container condition monitoring

Digital Trends

- AI
 - **Significant impact**
 - Planning
 - Commercial
 - Support functions
 - **Disruptive impact**
 - Operations

E-service centres (e.g. Customer call centres)

Dynamic capacity reallocation

Predictive maintenance

Digital Trends

- Autonomous Vessels & Robotics
 - **Disruptive Impact**
 - Operations

Automated vessel navigation
Automated port calls

Digital Trends

- Block Chain
 - **Disruptive impact**
 - Operations
 - Commercial
 - Cargo insurance

E-bill lading

Payment automation

Cargo insurance

Digital Trends

- Cyber Security
 - **Significant impact**
 - Operations
 - Commercial
 - Support Functions

Security assurance for customer data

Security assurance for automated operations

Equations

$$\mathbf{IM + IA = IX}$$

The successful Management of Information (IM), combined with the effective Administration of Information, leads to the ability to Exploit that Information (IX).

$$\mathbf{K + ID + E = W}$$

The application of Knowledge (K), combined with the ability to access Integrated Data (ID), tempered with the voice of Experience (E), leads to Wisdom (W).

These two equations provide the basis for digitalisation in any business - in other words, commercial profit and sustainability with tangible human benefits. The maritime sector, end to end, provides the perfect platform.

What is needed?

- A digital vision
 - E.g. Maersk, CMA CGM and Hapag-Lloyd
- Business needs
 - How can digital technologies support business needs along the full value chain?
- Inspiration and strong leadership
- Pace
 - How fast can, or should, an organisation transform?
- Planning
 - Advanced analytics
- Operations
 - Voyage operations
 - Fleet maintenance
 - Port operations

Key Autonomy Questions

- What do we mean by Autonomy?
- **What are the true benefits of Autonomy?**
- What is the timeline for Autonomy in the Maritime Sector?
- **Are we in control of technological progress?**
- Is there a risk that we will lose sight of safety and efficiency in our pursuit of Artificial Intelligence and Autonomous Systems?
- **Is the research and development work for Autonomous Systems having an unexpected benefit for 'conventional' manned vessels?**
- Is it all about Manned and/or Unmanned vessels?
- **Are we taking sufficient account of the Human element – Human 4.0?**
- What skills, knowledge and experience will we need in the future?
- **Is our infrastructure prepared for the development and integration of all Autonomous Systems?**
- What can Maritime learn from the other Transport sectors?

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**UK Codes of Conduct and Practice for Maritime
Autonomous Surface Ships are at:**

www.maritimeuk.org/media-centre/publications