HOW TECHNOLOGY

We solve problems others ignore

TASK ASSISTANT
Software that works

Designed by Seafarers for Seafarers

MIGHT OR MIGHT NOT CHANGE THINGS IN SHIPPING

Ulysses SYSTEMS

We solve problems others ignore

TASK ASSISTANT
Software that works

Designed by Seafarers for Seafarers

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WHAT'S BEHIND THE CURRENT TECHNOLOGY DRIVE?

When a technology driven change
is about to be pushed through society
there is a need to work out the trends
as some can be disruptive to business

Over the top?

WHAT'S BEHIND THE CURRENT TECHNOLOGY DRIVE?

and others can be great opportunities

Good news!

HOW DOES THIS RELATE TO SHIPPING?

In deep sea non-liner shipping,
the effect of general IT related trends,
depend on how shipping primary costs and revenue
can be affected by these trends.

The main shipping costs are
fuel, environmental, operating, and capital costs
while the main revenue is dependent
on supply and demand.

CARGO LOGISTICS

Information technology is ideally used in co-ordination.
Cargo logistics is the most influential example.

MOST TRENDS ARE NOT GOOD FOR SHIPPING DEMAND

Trends currently are not in the interest of any particularly influencing party

Reorganising the world's cargo logistics is a disruptive influence
reducing ship utilisation –which is not good for shipping
thus reducing fuel and environmental cost –which is helpful to the environment.

CARGO LOGISTICS ASSISTED BY HUMAN AND PROCESS PRODUCTIVITY AND ENHANCEMENTS

For example,
less arbitrage trading of oil products could be achieved
by better analysis of supply and demand trends
in the short 1 to 3 month time frame.

Similar changes can be made
to parcel size optimisation.

Yet more could be done
in rationalising the economic multiplier
of prompt transport of goods.

Express or second class delivery?

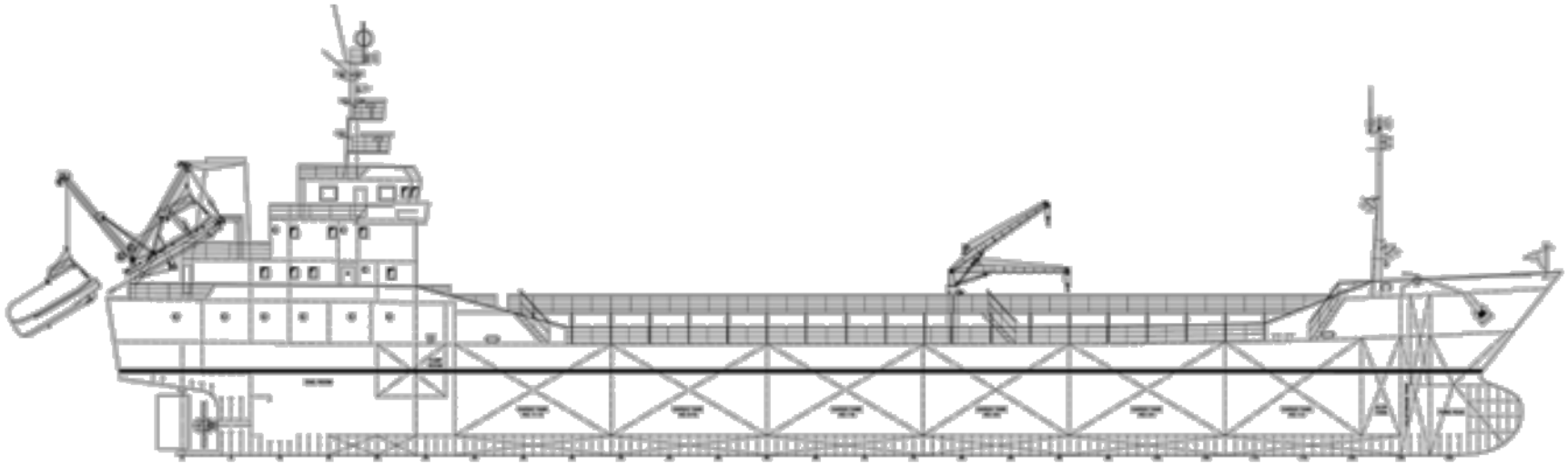
OPERATING COSTS ASSISTED BY HUMAN AND PROCESS PRODUCTIVITY AND ENHANCEMENTS

- Co-ordination of new processes on board and ashore
- Procurement of goods and services in ports
- Crew
- Machinery management
- Classification

OPERATING COSTS ASSISTED BY HUMAN PROCESS PRODUCTIVITY AND ENHANCEMENTS

Co-ordination of new processes on board and ashore

Mariners position on board via local area network that operates in the steel structure using electrical cables



OPERATING COSTS ASSISTED BY HUMAN PROCESS PRODUCTIVITY AND ENHANCEMENTS

Co-ordination of new processes on board and ashore

Shipboard process analyzed from beginning to end
minimize unexpected work via realistic planning

This allows prediction of work rest hours
when external labour services
or other physical resources are needed

OPERATING COSTS ASSISTED BY HUMAN PROCESS PRODUCTIVITY AND ENHANCEMENTS

Procurement of goods and services in ports

Procurement and delivery to be analyzed closely,
and tight co-ordination with vendors
seeking to reduce cost for vendors and ship operators

Crew

Close analysis of crew skills and crew experience
and synchronized with on board work planning

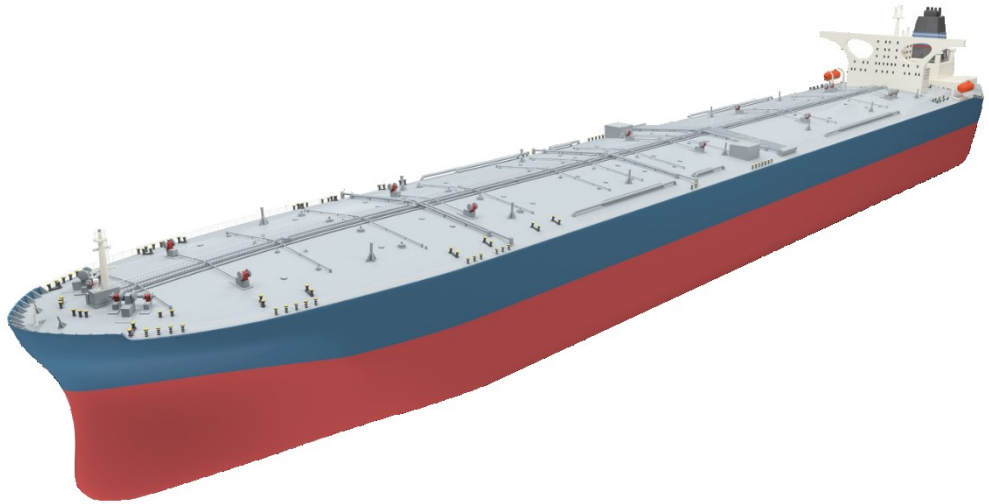
Better methods of ensuring good crew collaboration on board

OPERATING COSTS ASSISTED BY HUMAN PROCESS PRODUCTIVITY AND ENHANCEMENTS

Machinery management

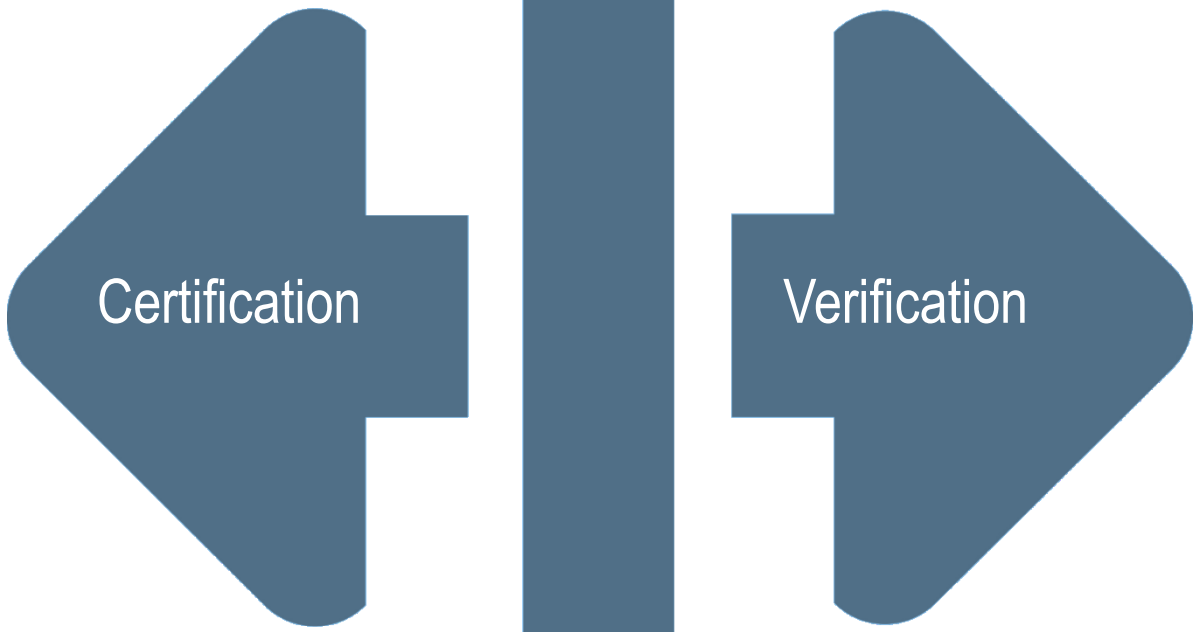
Better models for maintaining machinery on board predicting maintenance

Better ways to design and fina at the newbuilding stage



OPERATING COSTS ASSISTED BY HUMAN PROCESS PRODUCTIVITY AND ENHANCEMENTS

Classification



OPERATING COSTS ASSISTED BY HUMAN PROCESS PRODUCTIVITY AND ENHANCEMENTS

Classification

With the advent of better access and better condition assessment technologies,
certification and verification become separate because they involve different skills

Certification and verification interval change

Planning on board work is coordinated with new verification and certification intervals

CAPITAL COSTS

Capital costs are determined by supply and demand primarily and by construction costs to a lesser extent and also interest rates..

CAPITAL COSTS

Ships and machinery construction costs: **Manufacturing enhancement**

Construction cost may change in one disruptive event sometime in the next 20 years as traditional building or powering methods change. Material science is likely to have an influence but not as much as for other heavy industry because materials used to build ships are not on any critical path as for example are materials used to build aircraft.

Capital availability: New services and value propositions emerge from the breakup and reassembly of old power structures

Capital availability is not a huge part of capital cost but is an important part of propensity to invest. Capital availability will be influenced by IT, as banking changes due to the current breakup of power bases.

SUPPLY AND DEMAND

Economic activity

One of the main drivers are economic activity of countries furthest from raw material sources. This is a vast area requiring intense analysis. So much so that no one has managed to provide reliable investment analytics to compete in any way with a ‘Greek Uncle’’ as described by a famous and important investor recently.

Cargo Logistics and tonne miles

This is a vast area and as mentioned earlier certain co-ordination related aspects can change with IT sources co-ordination. But tonne miles are more dependent on economic activity which is too complex to model. For example geo politics is an important driver of tonne miles. There are few geopolitical models used by investors so far.

SUPPLY AND DEMAND

Investment propensity for new capacity

Information technology can change the sophistication of the prediction but this is a small influence compared to others.

It perhaps can shorten cycles and provide new investment classes that can serve quicker reactions to changing investment conditions.

Taxation

Taxation has not recently been an influence on shipping investment or in any other investment class besides the subsidised classes like wind turbines.

But it could well become so as economic multiplier becomes one of the key elements in corporate taxation.

RISK IN MARINE INFORMATION TECHNOLOGY

Cyber security is the most discussed factor as regards IT risk in the marine industry

Another perhaps more silent fear is replacing people with machines.
This is a very long discussion and perhaps also quite speculative.
But a simple indicator may be that, so far,
no technological advancement has increased unemployment

The most pervasive risk, however,
is poor selection and deployment of IT systems in Shipping.
This is a major risk and has been for many years. This in itself is a long discussion

RISK IN MARINE INFORMATION TECHNOLOGY

Big Data

Big data in shipping is new.
There is not enough existing data
in all of non liner shipping
to concern us with the issues
that have contributed to
the high technology
of big data

IF THE INFORMATION IS NOT UNIFIED YOU CANNOT RUN REPORTS ON IT

Current compliance related KPI's

- TMSA 4B KPI Overdue jobs KPI
- TMSA 3B KPI crew retention
- LTI Loss time incidents
- STOW reports

Reports regarding procurement efficiency;

- Time between original requisition and delivery
- Time between requisition arriving in the office and the order being approved for a PO.
- Time between approval and arrival on ship.
- Two of the above a heavily dependent on the ships schedule so to be done properly you should take away the time the ship is sailing which can be idle time as the order might have been processed but can only arrive when the ship reaches port. So you could combine thisreporting with the ships schedule.

Procurement cost efficiency;

- Cost of a spare being bought compared to the lowest prices across the fleet and the highest price including lowest cost vendor and highest cost vendor
- Expenditure for each vendor
- Expenditure per accounting category (usually related per machine)
- Expenditure for each vendor according to account category
- Prediction of technical costs based on machinery schedule overhauls
- Historical costs based on PMS split between scheduled and unscheduled maintenance
- Comparison of scheduled maintenance cost over actual maintenance cost
- Cost of freight to deliver spare parts and machinery items

PMS reports:

- Breakdowns per equipment as installed on each ship
- Breakdowns per machinery component across fleet
- Average time to resolve unscheduled maintenance
- Average number of unscheduled jobs being open
- Compare defects against sister ships
- Number of days jobs are overdue on average

SHQE reports:

- Ships processes prone to non conformance and undesired events
- Time it takes to close non conformance and undesired events processing.
- Departments against which non compliance and undesired events were assigned.
- Number of non conformities recorded against ships and fleets
- Number of vetting observations against ships and fleets.
- Sections against the manuals that these defects were raised against. This is like saying the marine model is made up of manual sections and then assigning them against a section you have a good understanding of the affected processes.

HR/Crewing reports:

- Cost of crew travel
- Average period a person stays longer than the original contract
- Number of crew related accidents similar to LTI but silly ones like how many fingers were busted etc..
- Nationalities across fleets
- Accidents against nationalities
- Accidents across fleets.

RE-UNIFYING DATA IS AN ENORMOUS UNDERTAKING

and it is far more effective
to try and remember data inflection points as a domain expert
and take action, than to run a BI system in order to find
inflection points and cause and effect relationships

THANK YOU