



Ocean of Opportunities

Challenge Statements: General Category

1) Real-time monitoring and tracking container conditions

How can we maintain a high visibility of our container statuses and conditions with minimal human intervention by internal and external stakeholders?

We operate a container fleet of more than 1 million units of all types and sizes. These containers are also getting constantly refreshed in both compositions and numbers as a result of various operational activities like procurement, disposal or more. During the entire handling process of containers, a great amount of human intervention is involved.

All this gives rise to errors in inventory, inefficiency in asset management, invisibility and/or absence of data, difficulty in cost control in terms of manpower, asset maintenance/repair, etc. The solution needs to be practical and economical for us as a major ocean liner carrier. It would allow us to possess a high visibility of our containers and their status/conditions at any given time and reduce human intervention by both various internal and external stakeholders. It should also be applicable to both our own containers and leased units which need to be reinstated to original conditions before returning.

2) Auto-digitalisation of contracts and other documents

How can we accurately record key contents of those documents into our in-house systems in an automatic or semi-automatic way?

We handle and process a huge number of operations-related important documents, including vessel blueprints, contracts with vendors in asset and service procurement, on both Global Headquarters level and regional levels. Digitalisation of such documents is crucial for our contract management as well as information conversion and utilization. These documents are not standardized, but unique on its own merits. At present, we have to largely resort to a manual way of storing them.

The solution will be one that helps us accurately enter key contents of those documents into our in-house systems in an automatic or semi-automatic way. It should be user-friendly and cost-effective for quick adoption.

3) Prevention of hull and propeller fouling

Are we able to prevent hull fouling by using new technology?

Hull and propeller fouling are always big concern for vessel operators. Fouling on ships drives up fuel consumption due to increased resistance. Fouling is caused by many reasons such as poor paint performance, loss of anti-fouling paint, long port stay, drifting. Many factors affect hull and propeller fouling and vessel operators are required to pay attention to them to minimize risk of fouling until next drydock.

Are there new technology that could prevent or slow down fouling instead of using paint? How do we monitor remaining paint? Are we able to know the risk of fouling before deciding drifting or anchorage area?

4) Digitalisation in ship inspection

How can we manage our large amounts of photos easily for future use?

We periodically inspect vessels and take hundreds of photos for each session. to check their condition and utilize inspection result to improve the quality of our fleet. There are various types of data obtained from the inspection is various such as evaluation results, photos, comments etc. These data are usually summarized as an inspection report and shared among stakeholders. Among hundreds of photos taken in one inspection, some of them are used in the report, but others are just stored in shared folder. We would like a solution that allows us to maximize our use of the inspection data by being able to extract useful information from photos.? Is there any way to retain unstructured data that is not extracted, but may possibly useful in the future.

5) Vessel space control using machine learning models

Would it be possible to make a reliable model to imitate decisions that are currently made by experienced staff?

ONE's experienced staff plan and optimise use of vessel space, controlling customer bookings, considering multiple determinant factors. After one year of operation as a newly established company, ONE has accumulated minimum data for machine learning. Information including booking acceptance time and various determinant factors around it. We would like a solution where machine learning models can assist our staff in making decisions.

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