

Port+ improving the efficiency of tanker port calls

Antwerp based port call information provider Port+ is helping improve the efficiency of port calls, including reducing waits at the pilot station and delays in berth activity

Antwerp based port call information provider Port+ is helping improve the efficiency of tanker port calls, including reducing time waiting for berths, and improving the efficiency of work done at the berth.

It has developed an online platform which acts as a 'single source of truth' for companies working in the port, including cargo owners / charterers, terminals, surveyors, ship agents, ship operators and port authorities.

The platform, branded "Qronoport", is currently being used in the Port of Antwerp, but is also available for use by, and in, other ports.

In Antwerp, the port authority gives the solution its support, but the driving force behind implementing it comes from cargo owners / charterers, ship operators, surveyors and terminals.

Port+ has been in business since 1905, when it was signalling the arrival of ships by radio, as an independent maritime information provider working for Belgian port communities.

It has been providing a range of information services to port users since then, including information about vessel arrivals and departures, gathered with radar, and now focussing more and more on digital methods.

A platform like Qronoport would be useful in any port around the world. The main issue, says Hans De Hondt, digital solutions manager at Port+, is that nobody has overall control of all of the port processes, and not all parties have the same incentive to reduce delays.

For example, if the charterer is paying for the vessel by the day, the shipowner does not get any benefit if the port call is made shorter. A surveyor does not get paid more from doing something which might help reduce delays, such as proactively informing someone else of a change which may impact them.

Stakeholders do not all have contractual relationships with each other, or may not even know each other.

The people involved spend a lot of time

chasing information with multiple phone calls and e-mails, including e-mailing spreadsheets, and do not necessarily inform each other when the information changes.

And from a technical perspective, it is quite a challenge to gather and combine data from the computer systems each company uses, plus information shared in phone calls, e-mails and shared spreadsheets. Standards for data description and exchange would be helpful, but very difficult to get agreement on within the industry.

And with each tanker operator and charterer having activities in many ports around the world, it may seem too much trouble to develop digital integrations between its internal planning computer system and a system for just one port.

The operations in the terminal for tankers can be more complex and less predictable than for other vessel types, Port+ says. There are more stakeholders involved, which means more communication needed between partners, and more difficulty to get a complete overview.

Mr De Hondt describes the current situation as "the path of lowest resistance, but definitely not the most efficient path in the long run."

Port+ is not advocating any changes which would put seafarers under more stress or push them to work faster, because it is looking at improving the efficiency of the sequence of operations, not the speed of the operations themselves, Mr De Hondt says.

It tracks how long individual operations take, so it can indicate possible delays for the next activity, not to evaluate whether they are taking too long. For example, if the terminal indicates that operations were planned to start at 1400 and will take 6 hours, but they actually start at 1530, it can estimate the new time the work will be completed.

The system could actually reduce crew stress levels, by ensuring operations take place at their planned time. If one task is delayed, that can create pressure for a subsequent task to be

done faster, to make up for lost time.

Wastage

According to the company's analysis, tankers going into Antwerp spend 73,900 hours per year waiting at a pilot station for clearance to sail into the port. There are 5,300 port calls a year from tankers, so an average wait of 14 hours. 62 per cent of vessels are waiting on arrival at the pilot station.

25,850 hours of this waiting was because the destination berth was not available at the time of arrival.

Tankers (product and parcel tankers combined) spend on average 2.5 days in Antwerp. While vessels are at berth, Port+ calculates that 25 per cent of the time is wasted, defining waste as time where there are no operational activities taking place.

The main gaps are between "gangway down" and "surveyor on board"; between "lab results received" [for testing cargo prior to loading] and "cargo arm connected"; and between "completion of operations" and "actual time of departure".

Predictability

A compounding factor is the lack of predictability. The estimated time of departure for a tanker gets changed on average 3 times per port call, Port+ says. 86 per cent of tankers leave the port more than 2 hours delayed. And of the vessels with a delay of more than 2 hours, the average delay is 9.6 hours.

There are many factors which can cause the changes, including changes in operational plans, delays by any of the stakeholders, unavailability of locks, pilots or tugboats.

If the port calls could be more predictable, there would be less need to build in 'buffers' between shipments, port calls and berth calls.

Formula 1

The company takes its inspiration from the way that Formula 1 pitstop times have decreased



The Qronoport software helps everyone involved in a port call understand what is happening right now, what will happen next, and what the expected activity schedule is

from 67 seconds in 1950 to 2 seconds now.

In a Formula 1 pitstop, all of the processes have been optimised, including individuals optimising their own processes, and taking each other’s processes into consideration. All possible preparations are made beforehand.

Where in 1950 the pit crew had to wait till the car actually entered the pit lane to see what needed to be done, nowadays the pit crew has all the information it needs digitally and in real time. The driver does not have to explain anything to anybody.

There is better structured communication and good access to data.

Different roles

In improving efficiency of port calls, it is helpful to look in detail at the roles, goals and incentives of the main players involved – the cargo owner / charterer, the terminal, surveyors, ship agents, ship owners and authorities.

The cargo owner has a key role in the port process, being the first to know how the cargo will be moved from one place to another. The cargo owner endures the cost of delays, so has the most to gain from reducing them. If the vessel is waiting at the pilot station before entering the port, that will nearly always count as demurrage, paid for by the cargo owner. So the cargo owner has the biggest incentive to share data with other companies.

The terminal has a key role in optimising port processes, since it has the data about the operational plans and the execution of operations. Many other stakeholders depend on information provided by the terminal, including surveyors and ship agents. The faster ships

can be ‘processed’ by the terminal, the more vessels the terminal can handle during the year.

Surveyors take a critical role, doing sampling and analysis of cargoes. They usually get paid for by each job. It would be useful for other organisations to know what the availability of the surveyor is, when the surveyor will be at the terminal and for how long, and how long an analysis will take. Surveyors themselves are often contacted at the last minute, which makes it hard for them to do good operational planning.

Ship agents are a hub of information between parties, but they often have to chase it from everybody, while the information itself is changing. The agent has to constantly assess the situation and make estimations or decisions about what information might be wrong or outdated.

Ship operators have an incentive to get the vessel in and out of the port as fast as possible, if the vessel is on a voyage charter.

Port authorities are involved in planning pilot boats, pilots, tug boats and locks, which can also be a cause of delays. While it is easy to just blame port authorities, there is also more shipping companies can do to help them to plan, Mr De Hondt says.

“The terminal doesn’t exactly know when the barge for barge-to-ship operations will arrive, the surveyor doesn’t exactly know when terminal operations will be done, the ship agent often waits till the last moment to order a pilot because he’s not sure when inspection by the surveyor will be done.”

Qronoport

Port+ has developed a data sharing platform called Qronoport which can be made available to other ports around the world, so they can have the same service it has developed for Antwerp. Either a port authority, or private companies using the software, could take on the role of implementing the service.

Qronoport can be set up to gather data from software systems of different companies, and also take data from AIS systems, and also to be updated directly.

There are two main offerings – a central data exchange platform, where you can share and receive operational planning data with other stakeholders, and an online solution for visualizing the data, showing the difference between planned times and actual times.

It enables participants to get an accurate overview of the activities planned, currently taking place and completed.

The company is developing algorithms which can analyze the data and improve predictability (perhaps to be similar to the services which tell you “this plane is usually 10 mins late”).

Each company’s data is placed into its own “digital vault”, and only available to another company where it has provided authorisation, and this company is linked to the port call.

If the system covers more ports, then the data integration effort would be lower for subsequent implementations – for example, a tanker operator which has integrated with Qronoport for its Antwerp port calls could also easily integrate with Qronoport for any other port in the world.