

Körber Supply Chain

Completing the digital voyage

Driving operational efficiency
in ports and marine terminals



Introduction

Digitization is changing the way the maritime logistics supply chain operates, and the application of new technologies is enabling smart ports and terminals to take advantage of increased IT connectivity to drive operational efficiency. Embracing a digital transformation is not a one-off event, but a strategic decision to embed technology in day to day

operations, enhance the exploitation of data and to meet the growing importance of improving efficiency and customer service. However, despite the industry's move to digitise, a review of the market has found that most ports and terminal are still not leveraging digitization across the entire vessel voyage.

Digital disconnect

The historical trend of implementing point solutions and focusing on large scale IT projects, such as ERP systems, have resulted in many organizations being behind in connectivity and digitization.

A Market survey of 50 terminals identified:

More than 50% relied upon non-integrated methods of planning and communication

Less than 25% used technology to calculate the time on the berth

55% recalculated the berth schedule manually based on live information

The time is right for greater digital adoption

In some organizations the idea that their ERP system would support the majority of their processes optimally is now being challenged. The move to "smart" terminals is underway as the industry sees the investment in technology as the way to increase operational capability and drive increased revenue across the same berth infrastructure. The expectation is that software will allow organizations to access and analyze the increasing volumes of data, while easily allowing users to control processes and improve performance. Getting these right leads to enhanced customer service and better collaboration across the entire supply chain.

It is not unusual for a terminal to average 19 ETA changes per day, 70% of which change by over 18 hours.



Completing the digital voyage

To complete the digital voyage, the industry must now take action to seek and apply solutions that are gathering pace in other industries.

A successful digital strategy requires the harnessing and interpreting of data, together with the appliance of artificial intelligence (AI) to drive enhanced operational performance.

While data is becoming increasingly available, it cannot be subjected to AI without the nuances and characteristics of the terminal infrastructure itself being captured into a digital model, which can then be subjected to AI optimization.

Digital planning and scheduling

Scheduling a modern maritime terminal is a complex activity often undertaken by specialists with years of experience. The scheduling team, however, often use spreadsheet tools like Microsoft Excel, which are not easy to share and are time consuming to keep up to date.

Investments in scheduling systems is often overlooked, potentially due to board level stakeholders being unaware of the complexity of the planning process and the speed and extent of the return on investment available.

Timely Data

The expectation today is that decisions are made quickly while accounting for as many variables as possible. The maritime planning and scheduling environment is highly volatile. The successful planning of a terminal requires a variety of information to be considered, such as vessel ETA, draft at berth, available quay side infrastructure. Also, shared resources such as tugs and pilots are dynamic, and need to be reconsidered each time an ETA changes. Research has shown that it is not unusual for a terminal to average 19 ETA changes per day, 70% of which change by over 18 hours.

Ports and terminals that are unable to compute these changes are struggling to publish regular updates

to their community, typically only submitting one revision to their plan per day. Implementing an effective digitalization strategy to capture this data live and serve it to support key decision will support your staff's ability to be more effective in their role.

Artificial Intelligence

Serving live data at the point of the decision making takes the terminal one step closer to creating a complete digital strategy but the goal should always be to process the data with AI before presenting the data back to the user. In this way the user can evaluate the merits of different outcomes and select an AI option optimised based on a set of criteria which could be operating profit based, customer service or cost based.

By automating mundane processes, reducing pressure on your staff and allowing the use of AI in everyday situations, terminals enable consistent, repeatable decisions that focus on your unique operating parameters and business drivers.

Körber

Körber has systems to bridge the gap between the shore-side management infrastructure and the vessel through a comprehensive, algorithm-based scheduling tool.

The critical parts of the vessel call can be integrated and managed more effectively, replacing traditional paper-based methods to provide an effective and comprehensive solution that manages the unique aspects of each terminal and port. A highly flexible and configurable system, Körber completes your digital environment and is the final link in the chain between the vessel and your operations.

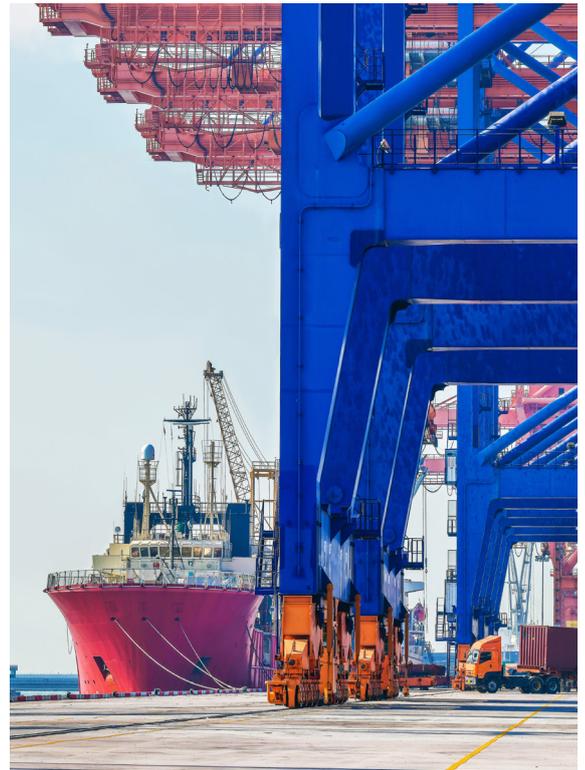
Körber's advanced scheduling tool:

- Incorporates all of the constraints that your terminal faces
- Reflects the needs of beneficial cargo owners
- Supports the allocation of resources to ensure the vessel visit is dealt with effectively
- Provides a system of record for post vessel administration while allowing real time analysis of performance
- Reduce waiting times by 10%
- Reduce demurrage by up to 30%

Conclusion

The maritime supply chain, by comparison to land or air, can suffer with more disruption and planning uncertainty. The harmonization of vessel arrival with vessel processing is a real challenge, resulting in most terminals deliberately planning based on sub-optimum utilization to cater for the inevitable disruption. Our research has shown that considering vessel dwell time is a key performance indicator, only 50% of this time is actually managed by traditional terminal ERP systems. The remaining 50% of time is not managed by IT and therefore presents considerable opportunity to drive improvements. Whilst digitizing the voyage cannot prevent weather delays or the knock-on effects from a previous terminal, it can minimize the impact of the disruption and provide tools and AI to assist in identifying the best possible operating schedule.

As the saying goes, “the only constant in life is change”. While we cannot know exactly what will happen in our markets, we can be sure that by embracing digitalization we will be in the best position to take advantage of opportunities when they arise.



Why Körber?

- We have 20 years of experience in delivering marine optimization process technologies.
- Our global presence provides you with local support wherever you are located
- Our software supports both in-house and cloud applications
- Our online platform allows easy integration to other terminal applications within the wider port's community
- Our applications allow the scheduler to optimize terminal throughput, reduce vessel waiting time and meet the operating objectives of different stakeholders
- Our solutions meet all industry regulations and safety requirements fully
- Our visual dashboards are easily interpreted through real-time interactive Gantt charts, tide charts, vessel databases and resource spreadsheets.

See how Körber can help your business:

Find out more

Learn more about our maritime logistics solutions

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