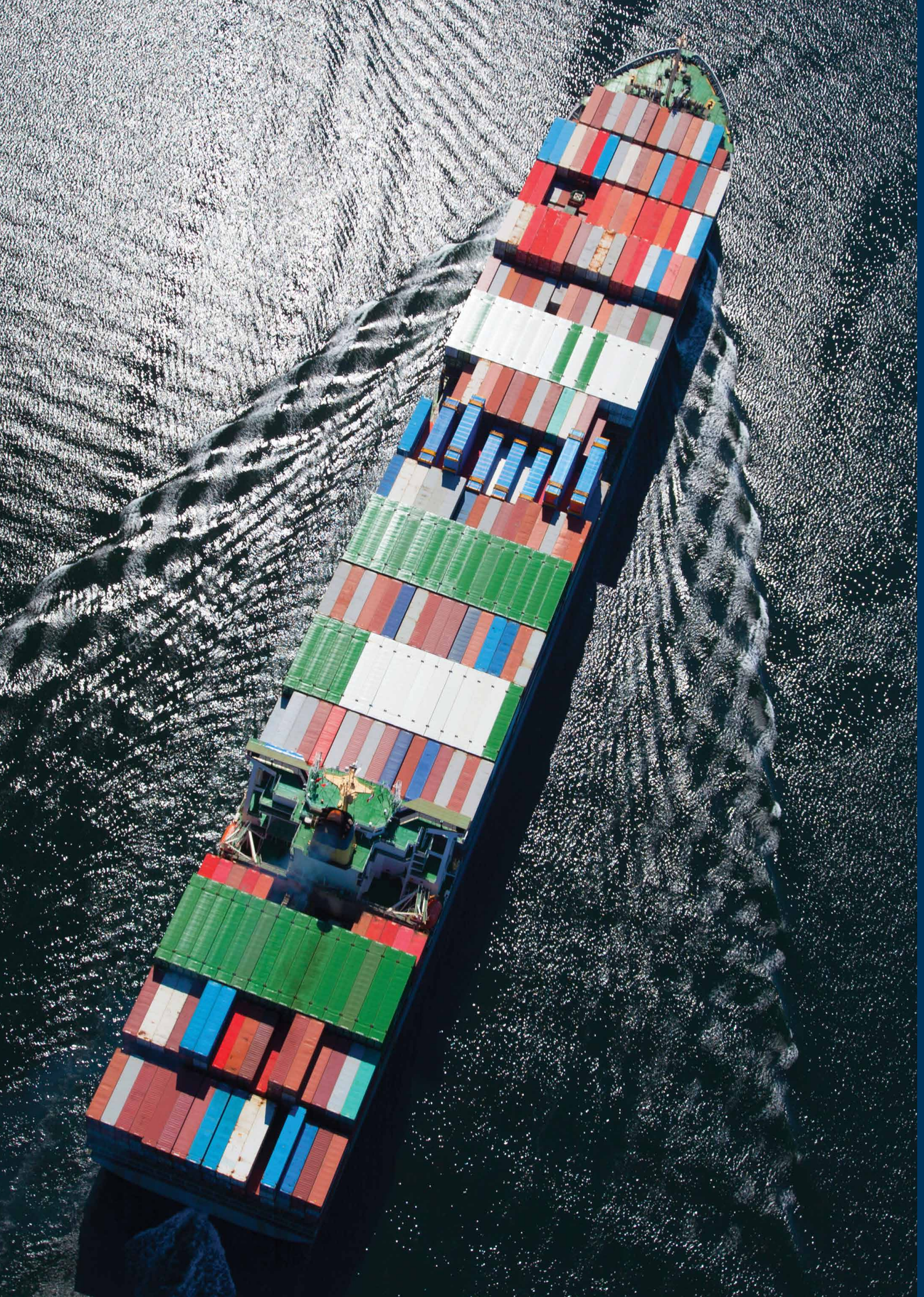
7 challenges in technical ship management

WHITE PAPER

SERTICA



Freight rates are still low for most cargo, and many shipping companies are facing difficulty generating profit - or at least the profit margin they require. Not much can be done about freight rates as they are a result of the world market and the necessity to move cargo around.

However, shipping companies can ensure efficiency in managing their ships by making sure that the fleet comply with safety regulations and is operated without breakdowns and detentions. This way time schedules can be met and customers stay satisfied.

This paper identifies 7 challenges faced by shipping companies all over the world. The data is gathered by observing many shipping companies using different solutions, having different policies, procedures and strategies. We provide a recipe of how to overcome the challenges and thereby contribute to the overall performance of the ships from the best practice seen across companies.

1

Data communication between ship and shore

Even with constantly improved data communication available on the ships, there are still limited bandwidth. This means that ships cannot stay online, and a lot of data communication must be transmitted in packages. The ships are constantly requesting spare parts, inventory, food and other things from the office with the expectation that they will be delivered as requested. Otherwise, it can impact the performance of the ships. Therefore, it is very important that the information is sent without errors from the ships to the office. If anything goes wrong, the communication principles must be able to deal with errors and resend the required information. Not all data communication and systems are able to do this, and too often we have observed frustration from ship crew when data is not transferred as expected. The best practice seen in this area is when the communication lines and principles are reliable and self-repairing. For example, in case a package is not transferred correctly, the systems will identify the problem and resend the package to restore information. These lines must be completely reliable and ensure smooth and secure communication. Due to the high cost of data communication, it is always vital that data is compressed in the most efficient way.

2 Ease of use

“Garbage in equals garbage out” is a well-known phrase in systems dealing with user entered data. Operation of ships today is often dependent on data entered by the crew on-board. Decisions are made, and actions are taken from the data that is available in the systems. Therefore, we are dependent on the quality of the data. Data is not valuable if it is not correct or of a sufficient quality. One of the main reasons for wrong or missing data is that many software systems today are still made to be operated by experienced IT users understanding the complexity of functions and data. Although the crew onboard is well-educated, their main job is not to operate computers, but we are still dependent on their usage of systems. Training of the crew is costly and often a logistic challenge as the crew reaches shore in many different locations. It is, therefore, important that ease of use has a very high priority in software applications. Training onboard the ships is difficult and access to support more challenging.

The cost of training the crew is often seen as a barrier for implementing new systems and/or changing existing systems. To lower this barrier, systems need to be easy to use and self-explaining to the highest possible extent. Use of guidelines from Microsoft or other software systems will ease the use and make the users more familiar.

3

Control of maintenance jobs and routines

This is an area where many different policies are observed. Many shipping companies treat each ship as an individual unit and provide only overall guidance in how to maintain and inspect. This practice is easy to implement, and many ship officers prefer to be independent with little influence and control from the head office. However, there is a lot of limitations to this strategy. The safety and maintenance level might vary from ship to ship in the fleet and might cause a poor reputation if one ship diverts in the wrong direction. It also makes it harder to exchange experience across the fleet, and even harder to adjust behavior based on experience. It is, however, a hard job to synchronise across the fleet, especially in a fleet of varying age and with different equipment on-board. For those who manage to harmonise across the fleet, there are great benefits to achieve. It is much easier to have a consistent policy across the fleet that allows ship managers to analyse all data and figure out the necessary adjustments. Finally, it makes adjustments to policies much easier to implement. This is probably one of the harder challenges to overcome, but we have observed more and more shipping companies that make investments to achieve a central control. Of course, the systems used must support distribution of data from the office to the ships and be able to receive feedback.

4

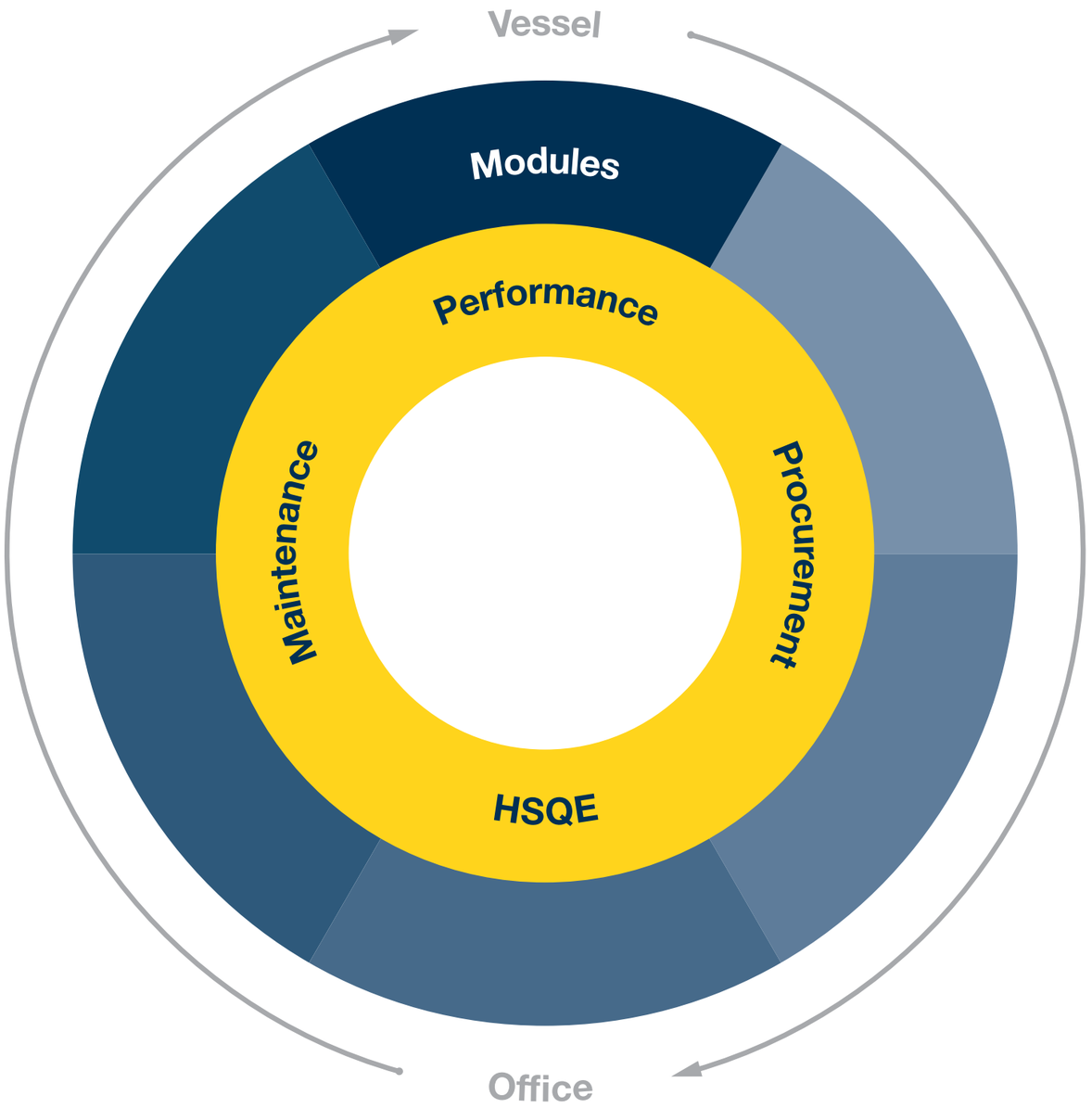
Use of analytics to drive behavior

All shipping companies have policies and goals for their operations. What is more difficult is to drive those policies to reality and to measure where they are met onboard the ships. Inspectors and superintendents that visit the ships are often seen as “policemen” who want to control and give directions. What we have seen in some of the more advanced shipping companies is the use of analytics to drive behavior. If the right KPI’s can be defined and measured to provide the right communication, then it is possible to drive a certain behavior more as a competition between colleagues rather than as rules and regulations. We have seen an example of a shipping company changing the behavior. They went from having most maintenance jobs performed unplanned to a situation where 95% of all maintenance jobs are now performed as planned. This was achieved by setting up KPI’s and measurements that could compare performance between the ships. Again, the systems need to be able to provide analytics in a simple way that does not require a full BI project before new KPI’s and measures can be defined.

5

Overview and priority of tasks

Many fleet management systems have become quite large and complex. This is a natural trend as they are required to assist with quite complex processes and must contain a lot of data. This means that a user can easily lose oversight of what is important and what tasks are planned for today. In many cases, they will have to search in various places to figure out what requires action. This may cause overlooking or forgetting required actions or approvals that need attention. This leads not only to frustration, but it can also cause delays and missed deadlines. What is seen as good practice is that despite the complexity of growing number of functions and actions, the user, the department and the company must keep an overview of tasks to prioritise and ensure that nothing is forgotten.

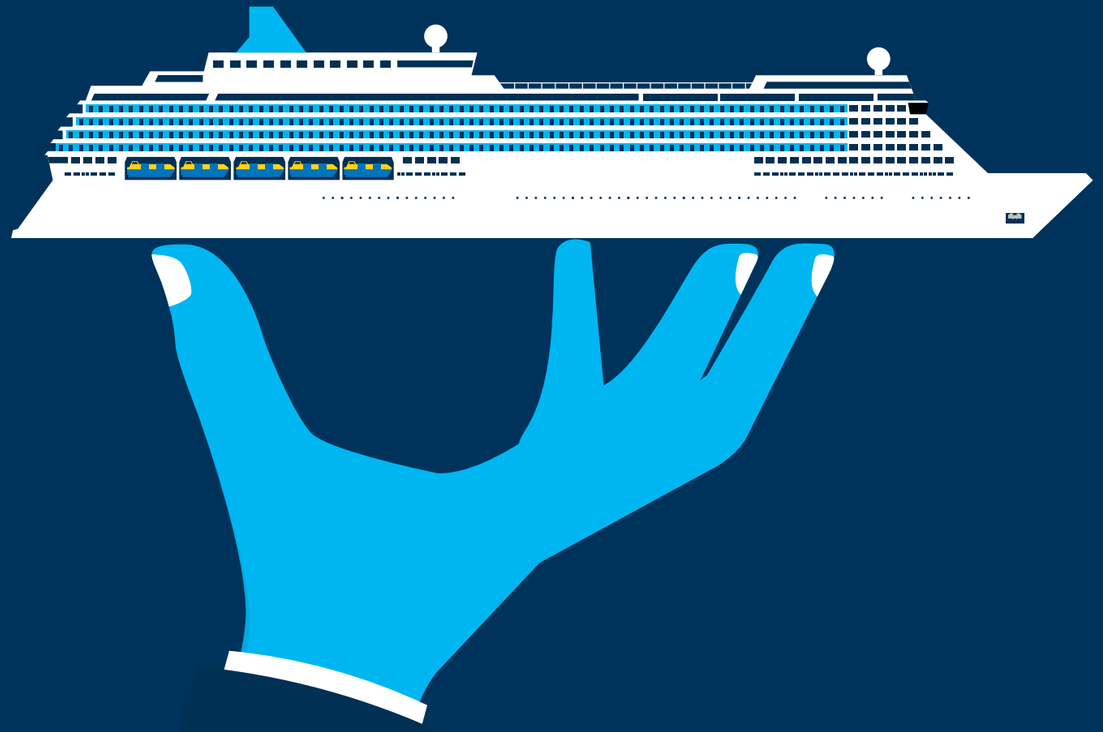


6 Integration of processes

As stated in the previous challenge, the scope of fleet management systems is growing, and each function has its own purpose. In many cases, Health & Safety, Planned Maintenance and Procurement processes live separate lives. This is natural as these applications are seldom developed as one big application but often implemented sequentially and without integration. Despite different people having different responsibilities and tasks and using different systems or parts of systems, the best practice is to have an integrated process.

For example, when a member of the crew has an accident on the stairs due to a missing railing, the incident must be registered in the HSQE system, but it should not end here. It should “automatically” trigger a maintenance job to fix the railing and if spare parts are required, it must also “automatically” be put on the job, and if not available, create a requisition. This example demonstrates that if systems and processes are well integrated, a lot of unnecessary work can be avoided, and actions are not “forgotten”.

7 Implementation and support



There is a lot to be said about this challenge, however, it will only be briefly described in this paper. Software systems of a certain complexity (and fleet management systems are complex) do not implement themselves. They require a structured approach and support from the management team. They also require appointment of the right resources and an educated and well-respected project manager both within the company and from the implementor. Furthermore, they require a partner who understands the business, critically assesses current processes and gives advice. Too often there is only one parameter that dictates the choice of partner, and that is price. Of course, price matters but you often get what you pay for. Companies must look for an experienced partner with a proven track record. A complex solution such as a fleet management solution cannot simply be implemented without help and guidance from an experienced partner. Every company is different, so the partner must also provide the necessary flexibility to accommodate that. The job is not finished when the solution is implemented. When a problem arises, it is necessary to have a partner, who can provide help quickly and accurately. Most companies face problems at this stage. They often feel let down by their supplier who do not provide the necessary attention and support. This is also true for “reactive support”, where the supplier provides help on request. Companies should expect proactive help from their partners to improve their businesses and to ensure the maximum return on their investment.

SERTICA

Logimatic is a Danish software and engineering company established in 1987. The company has more than 30 years of experience in the maritime industry and provides software solutions for shipping companies all over the world.

SERTICA is a fleet management solution developed by Logimatic in co-operation with leading shipping companies around the world. It is used onboard more than 1.100 ships and has more than 10.000 users.

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