



English summary  
of Fafo-report 2019:09

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## Maritime competence in a digital future

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The topic of this report is maritime competence in a digital future. Its basis is the definition formulated by Digital 21, where digitisation is understood as the introduction of digital enabling technologies to improve, innovate and create new opportunities. Based on a comprehensive data material consisting of four workshops with a total of 57 participants, qualitative interviews with 18 informants in key positions and a quantitative survey, we portray a maritime industry at an advanced stage of digitisation. Not least, the industry is characterised by widespread awareness of the opportunities that accompany increased digitisation.

## Research questions

The general question in the report concerns how new technologies represent a potential for the maritime industry and the competencies that will be required going forward. The report sets out to answer the following research questions:

- What does digitisation in the maritime sector involve?
- What opportunities does digitisation provide – and for whom?
- What competencies will the cluster call for as the maritime industry changes as a result of digitisation?
- To what extent are the maritime educational institutions equipped to meet the changes in training requirements that will follow from a digitisation of the maritime cluster?
- How will the change in seafaring competence triggered by the digitisation of the maritime sector affect the innovativeness of the cluster?
- What is the current contribution to value creation from people with maritime competence, and what will it be in a future characterised by digitisation?

## Experience from seafaring remains important

Based on the data collected, the main conclusion is that increasing digitisation of the maritime industry has not changed the need for access to sailors with operational experience. However, current developments require staff that possess both operational experience and digital skills. This applies

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Maritim kompetanse i en digital framtid  
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on board the vessels as well as on shore. According to our informants, it will be fully possible to provide the existing sailors with the required digital skills. This finding leads to the conclusion that there is a need for continuing further education and training activities in the maritime industry.

Operational experience is important at sea, but practical experience is at least as important for staff in land-based maritime enterprises. Eight out of ten (81 per cent) claim that staff with practical and operational experience are better at finding practical solutions than are people with no such background. The importance of experience is also highlighted in the qualitative studies. Here, this competence is linked to safety, operational stability and innovation. For all these three issues, practical experience from seafaring is described as a key success factor. First and foremost, the informants appear to believe that digital skills should be additional to experience from seafaring.

### **Decisive digital competence**

Digitisation represents a considerable potential for the maritime industry. There is broad consensus that digital competence will be decisive for future development and growth. Altogether 86 per cent of the informants in the shipping lines respond that to them, digital competence is quite important or very important, while 96 per cent of the respondents in other maritime enterprises respond in the same way. On the other hand, a large proportion report that their enterprise currently lacks digital competence. Approximately seven out of ten, for example in other maritime enterprises and the shipping lines, report that their own enterprise is lacking digital competence to a great or to some extent.

The analyses also reveal that digitisation is deeply affecting all levels of the industry. While public debate on digitisation of the maritime industries tends to revolve around autonomous and driverless vessels, this does not appear to be the most pressing issue for our informants. They are concerned with how combinations of new technologies and increasing automation provide opportunities for processing large amounts of information and producing a number of gains in terms of optimisation. These advantages are linked to operations, innovation and new business models.

## **Varying latitude for digitisation in the industry**

The study reveals that there are differences when it comes to strategies for increased digitisation. While the informants seem to agree that digitisation is and will remain important for the Norwegian maritime industry, the enterprises find that their latitude differs when it comes to digital restructuring. For example, many of the large shipping lines are in the forefront, because they have the financial clout to carry large investments. The situation appears to be different for some of the smaller shipping lines. Despite the falling costs of new technology, they find the risk involved in making new investments to be too large, and they are uncertain of what technological direction to choose. This picture is not unambiguous, however. We have also seen some small shipping lines that have taken large digital strides and are thus at the forefront of developments. A shared trait of all the large and small enterprises in our study is that having a leadership with clear priorities is essential in opting for a digital strategy.