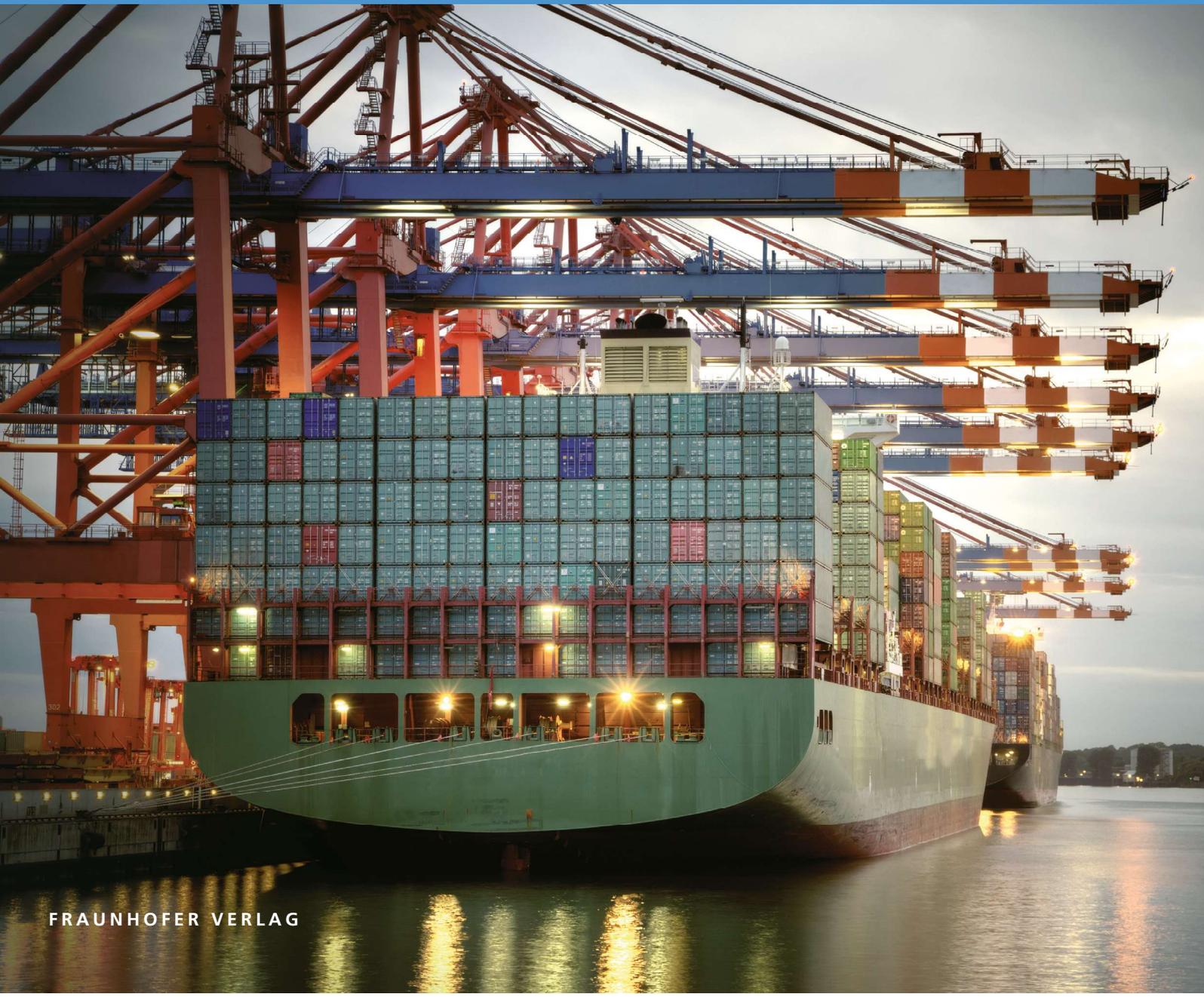


ED. CARLOS JAHN

FLEET MANAGEMENT SYSTEMS 2021

AN INTERNATIONAL MARKET REVIEW OF CURRENT
SOFTWARE APPLICATIONS FOR SHIPPING COMPANIES



FRAUNHOFER CENTER FOR MARITIME LOGISTICS AND SERVICES CML

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FOR SHIPPING COMPANIES**

FRAUNHOFER VERLAG

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Disclaimer

The contents of this study were prepared with the utmost care. The product-specific information in this document provides an overview of a product or a provider at the time of writing. The Fraunhofer CML cannot guarantee, however, that the information provided is correct, complete and up to date as the products or provider strategies are subject to constant change and market situations can change radically.

Hamburg, May 2021

FOREWORD

FRAUNHOFER CENTER FOR MARITIME LOGISTICS AND SERVICES CML

With the onset of the Corona pandemic since early 2020, our lives have been abruptly turned upside down. Within a very short period of time, we have been faced with unprecedented challenges that affect many areas of our lives.

The measures taken by politicians to contain the uncontrolled spread of the SARS-CoV-2 virus not only affect our private lives, but also have a strong impact on the global economy. In these difficult times, it is particularly important for companies to achieve viable advantages in order to improve their position in the long term. The already fierce competition as well as the increasing number of national and international regulations for sustainable shipping make this task even more complex and present shipping companies with major challenges.

In order to adequately meet all these challenges, the use of an efficient ship and fleet management system that is tailored to the company's own needs is more important than ever. As in previous years, the range and variety of solutions available on the market for fleet management systems continues to grow, giving interested parties a large number of potential providers as well as products and services to choose from.

Fraunhofer CML conducted this market survey to provide shipping companies with insight and orientation on the solutions available on the market as well as on general market developments. For this reason, this edition of our survey has a separate section dedicated to the Corona pandemic. At this point, I would like to mention that the majority of the market suppliers surveyed consider the effects of the pandemic to be a temporary cut and assume that lost revenues can be achieved with a delay.

With this in mind, let us see the current situation not just as a crisis, but above all as a catalyst for increasing digitization and for the development of innovative, efficient IT solutions.

I wish you interesting reading.

Your Carlos Jahn



Prof. Dr.-Ing. Carlos Jahn
Head of Fraunhofer Center for
Maritime Logistics and Services CML

Introduction and executive summary

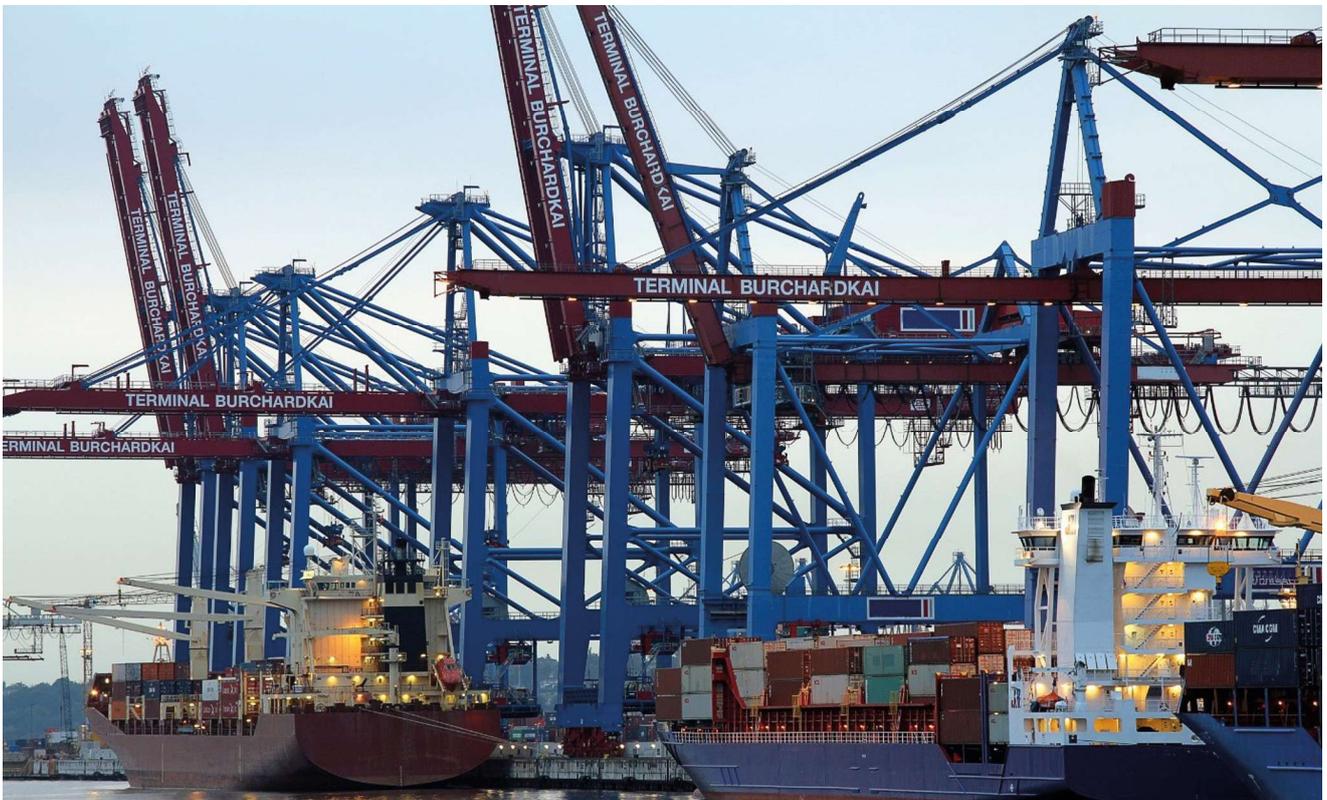
Fleet management systems (FMS) developed by maritime software specialists are powerful management tools for shipping companies. There is a great variety of providers and a very wide range of different functionalities on the FMS market. This study provides an insight into the latest market developments and gives an overview of the current vendors, products and their respective features. The study has already been published four times and most recently in 2018.

Thanks to the great interest in previous years, this fifth edition is a comprehensive update of the previous versions and now considers 29 fleet management software providers. These vendors form a heterogeneous market, with some smaller companies offering highly specialized software solutions, while large vendors offer their products for all FMS planning tasks.

As observed in previous market reviews, participants continue to actively seek and develop new partnerships. Advances in broadband communications coverage additionally enable rapid data exchange between shore and ship, providing the basis for the development of new applications.

Customers in the FMS market currently rate Maintenance Management, Safety/Quality/Risk & Compliance, and Performance Management as the most important applications. This can be attributed to the companies' efforts to achieve profitability, efficiency and environmental goals.

About Fraunhofer CML



The Fraunhofer-Gesellschaft is the leading organization for applied research in Europe. 75 institutes and research facilities work under its roof at different locations throughout Germany. More than 29,000 employees achieve an annual research volume of 2.8 billion euros. Contract research accounts for almost 2.4 billion euros. The Fraunhofer-Gesellschaft generates around 70 percent of this output through contracts from industry and publicly funded research projects. International collaborations with excellent research partners and innovative companies worldwide ensure direct access to the most important current and future scientific and economic areas.

The Fraunhofer Center for Maritime Logistics and Services CML (Fraunhofer CML), located at the Hamburg University of Technology, is part of the Fraunhofer-Gesellschaft. Fraunhofer CML conducts professional contract research for private and public

sector clients with a focus on the maritime industry. Target customers include shipping companies, government agencies and authorities, ports and port authorities, terminal operators and logistics service providers. For its clients Fraunhofer CML develops and implements innovative, customer focused problem solutions that span the entire maritime supply chain. The core activities in ship management are focused on innovative use of information and communication technologies, mathematical optimization for management decisions and development of decision support systems. Fraunhofer CML applies its detailed knowledge in the maritime domain to improve clients' procedures and prepares studies for private and public customers, providing them with reliable information on which to base strategic decisions.

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