

# Inevitable change

“It should have happened long ago, it needs to happen now,” says Jens Lassen, managing director of Rickmers Shipmanagement and global head of Rickmers’ business unit Maritime Services, referring to a restructuring of how container ships are designed and operated. *Generations* presents a front-runner’s perspective.



Lassen's background is from the cruise industry, a segment where customers' needs and preferences define the product. Since he joined Rickmers in 2010, he has been part of the team streamlining a shipowner and operator with more than 175 years of tradition into a corporation at the center of the change the container shipping industry is about to undergo.

### It all starts with the existing fleet

When it comes to achieving significant efficiency gains, Lassen believes that the existing fleet has a certain potential. "The fuel bill today can make up as much as 88 percent of a container ship's operating cost. Even carriers with fuel bills of billions have not fully tapped or systematically worked on energy reduction measures," Lassen says.

According to him, it is possible for existing vessels to achieve energy reduction of up to 10 percent through a combination of technical and operational changes. This could potentially help some shipowners save hundreds of millions. "We offer energy efficiency improvement as a product and are beginning to implement a sharing of the savings we and a charterer or a carrier can achieve. The majority of the savings goes straight to our customers' bottom line," he says.

When it comes to inspiration on operational efficiency, Lassen points to the tanker shipping industry. "Oil majors like Exxon Mobil, Texaco, Chevron, Shell and BP require the shipowners to meet the Tanker management and self assessment (TMSA) requirements. If you do not comply, you do not get cargo."

Container ship management has lagged behind tankers in terms of performance standards, and Lassen thinks it is important to bring the container shipping up to and even beyond the point where the tankers are at the moment.

### The new design team

When it comes to identifying the key stakeholders in bringing about the new generation of container ships to the market, Lassen is certain about whom he would target first. "We need to ask our charterers to share their expectations and knowledge with us," he says. He believes it is vital to understand the charterers' and carriers' long-term vision. By seeing the future through their eyes, Rickmers plans to develop specifications that match demand not only for today, but also for the future.



**Jens Lassen** is global head of Rickmers Group's business unit Maritime Service and the managing director of the newly established company Rickmers Shipmanagement, where he is responsible for technical fleet management, purchasing and logistics, fleet personnel and risk management.

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Other important players that should be involved from the beginning are ship designers. "With shipyards now more open to new designs, our customers will expect that we bring new, more radical design ideas to the table," Lassen explains.

The technology providers also need to be part of the process at the design stage, ensuring that equipment modules are provided in well-integrated packages. "We expect system providers like ABB not only to take responsibility for the maintenance of their equipment and training, but also to take part in the financing," Lassen says.

### What about the yards?

According to Lassen, Rickmers' goal is to work with partners that focus on the life cycle performance of the ship, jointly develop innovative designs and then find the right shipyard.

He regards the South Korean yards as extremely successful in streamlining their production. "I worked in Korea in the first half of the 1980s, and until very recently, the yards there have been building ships with almost the same designs. Their attitude has been very much a function of a long period of a sellers' market. Some of the equipment may have improved, but there are few improvements that are fundamental. We are now beginning to see a change due to the lack of newbuild orders and the recognition that changes are inevitable due to the high cost of fuel." Lassen is not, however, sure that the shipyards in South Korea, China and Japan are yet ready to design the ships needed for the future, as they might not have the technological ability to do so.

### Increasing demand through improved efficiency

Some may think of container logistics as highly optimized, but Lassen disagrees. "I do not think it is optimized yet to the extent possible. Everything from trade routes to port facilities can be improved." He believes that reduced handling time at terminals, effective door-to-door logistics through integrated multimodal networks and significantly improved reliability still have a way to go. "Companies with a long-term perspective need to get together to design and build ships with at least 30 percent energy efficiency improvement and outperform land-based transport in terms of environmental sustainability," Lassen says.

Text: Johs Ensby, Margarita Sjursen

Photos: Rickmers Group

## The link between finance and carrier capacity

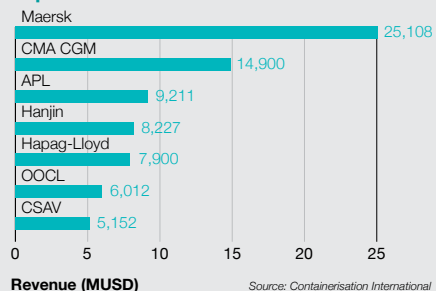
The big cargo handlers like Maersk, CMA CGM, Mitsui O.S.K. Lines and Hanjin Shipping have developed into logistics specialists that operate supply chains through a sophisticated network worldwide, with Rickmers as a major provider of tonnage.

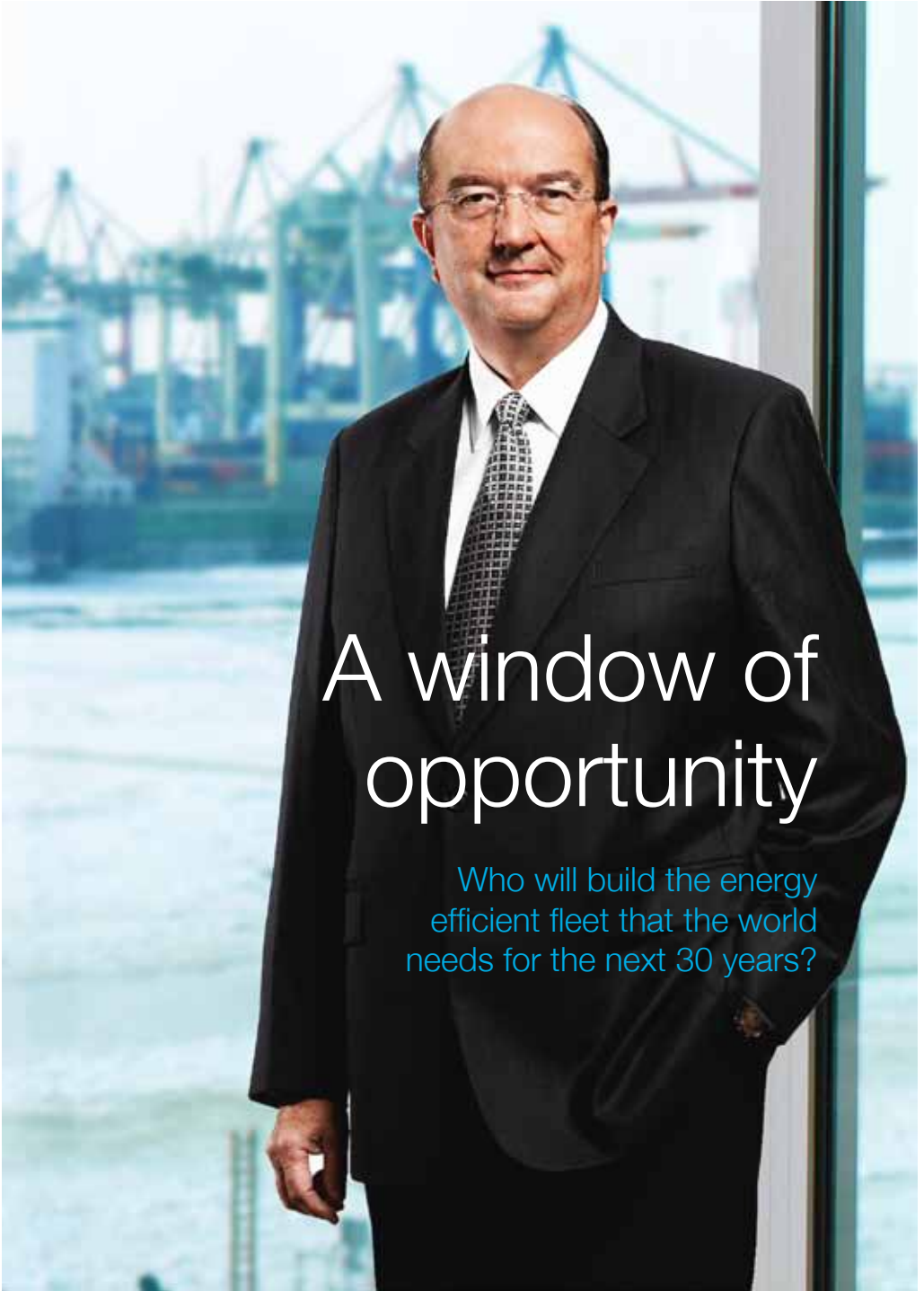
As one of the leading shipowners and managers, the Rickmers Group operates a fleet comprising more than 120 ships with a current market value of over \$3.2 billion. Thirty-seven ships are owned by Rickmers. At the center of this fleet are 88 container ships from smaller vessels to very large container vessels (VLCs) with a capacity of 13,100 twenty-foot equivalent units (TEU).

When the world's largest container vessel, with the Maersk logo painted on its light-blue side, makes a port of call, the ship is likely be one of the eight 13,100 TEU container ships operated by Rickmers. Owner Bertram Rickmers has set Rickmers a goal to be a one-stop provider between the capital and the charterer.



### Top 7 carriers 2011





# A window of opportunity

Who will build the energy efficient fleet that the world needs for the next 30 years?

**Ronald D. Widdows, CEO of Rickmers Holding and Rickmers-Linie**

Before joining Rickmers Group in April 2012, Ron Widdows was the group president and CEO of APL and Neptune Orient Lines. Widdows is currently the chairman of the World Shipping Council that represents approximately 90 percent of the global liner vessel capacity.

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Rickmers Group headquarters in Hamburg

There has been a series of events that affected the container shipping market in a way that no one saw coming. According to Ronald D. Widdows, CEO of Rickmers Holding and Rickmers-Linie, it all started with the world financial crisis.

“Container carriers started losing their shirt, they stopped ordering ships, the shipyards began to see utilization gaps developing, the carriers continued to see losses in 2011 and 2012,” Widdows says. As he explains, in addition to all that, carriers switched to slow steaming in 2009 to save fuel. This was seen by some as a temporary contrivance, but later became the way forward due to high fuel cost and the freight rate pressure.

“If you slow down your assets as a permanent way of operating, you can change the design of the ship. Since the shipyards do not have a large order book beyond 2013, they are now willing to build ships that are much more fuel efficient – both fat and slow,” Widdows says.

#### **Growth ahead**

Widdows believes that the world markets will grow. Global demand that drives the need for container ships is increasing, and there will be a need for more tonnage. Consequently, any oversupply of ships will be reduced over the next few years, even with the

moderate rate of trade growth that global markets are likely to see for the next few years.

“The supply will tighten in the next two to three years. At the same time, there will be a requirement for new and more efficient tonnage,” Widdows says.

#### **The number of ships is to a degree irrelevant to some carriers**

When it comes to carriers that wish to improve their cost structure, Widdows believes that the fact that there are too many container ships worldwide is not that relevant to their decision making.

“They are not concerned that there is an oversupply of ships in the world today and for the next couple of years; they have to bring down their costs, and fuel consumption is a major driver,” Widdows says.

To illustrate his point, Widdows gives an example of a hypothetical carrier that has ships on charter that are consuming a lot more fuel, compared with other vessels of same or larger size. Over the next couple of years, the carrier will have no other choice but to make the use of the existing vessels, as it will take some time before an alternative ship becomes available. However, Widdows believes, when carriers start to have alternative choices and they have a ship that comes up for charter renewal, they are likely to seek the most efficient ship they can find.

### The question of when

Widdows believes charterers will take the opportunity to replace existing ships with newbuildings when they become available to them within the next two to three years. “The demand is here,” Widdows says. “You have carriers today that are losing millions of dollars each month. Their biggest cost problem is their assets and what they are burning in fuel.”

Private equity and other non-traditional players begin to show interest in going into building new ships. According to Widdows, that was bound to happen. “More than 35 percent of the world container fleet has been built by German owners, and largely with the KG financing that no longer operates. There is an enormous void in terms of where the financing is going to come from for the assets that are required.”

### The questions of who

In a recent interview to the shipping newspaper TradeWinds, Chief Investment Officer of JP Morgan’s Global Maritime Investment Fund Adrian Dacy said that when the Fund invests, it wants to put its money alongside existing shipowners that have had operating experience. “By co-investing, we feel that there are the right checks and balances in place to have both parties observe and protect each other’s interests,” Dacy told the newspaper.

When asked what Rickmers would have to offer these non-traditional financing entities, Widdows pointed to the experience and relationships that go beyond those of a typical shipowner. He believes it all

comes down to a combination of capabilities rather than buying a cheap vessel. “It is about buying a ship that can be operated on a cost effective basis over the life of the asset,” he says.

“Rickmers brings to the table deep relationships with the charterers – the carriers, who are going to make use of these assets. It is about counter party risk, so we bring relationships with some of the strongest players in the industry to the table.”

### Less financing, more partnerships

Widdows points out that throughout the past decade, shipyards drove their production costs down, building not necessarily the most efficient designs as cheaply as possible. As a result of the seller’s market, these ships did not always meet the needs of the buyers.

“I think it is safe to say that for some years financing is going to be difficult to achieve, with fewer people able to access financing,” Widdows says. “This contributes to a window of opportunity where the yards will certainly have an incentive to partner with people who bring new designs as well as relationships with the strong players in the container space to the table. That environment is going to exist for some time.”

Text: Johs Ensby, Margarita Sjursern

Photos: Rickmers Group



# Marine design house

The industry tends to adopt new products by fitting them on existing hull shapes, according to naval architect Henrique Pestana. Together with his colleagues, he proposes a fresh approach to container ship design.



Henrique Pestana



Tom Sand



Eero Lehtovaara

**P**estana, head of ship design at Marine Design House, a new concept development and marketing unit in ABB, wants to change the thinking to questioning how the hull shape can be designed if a particular propulsion product is used.

Pestana points out that designing a ship that increases the volume available for cargo on board can mean a significant revenue increase for the “volume vessels,” where the end customer pays by volume, not weight.

## Not new to the container shipping industry

Eero Lehtovaara, head of the Marine Design House and senior vice president of ABB’s Marine and Cranes business unit, does not limit the team’s concept studies to ships. “It is very easy for us to relate to the broader scope of container logistics since we have products for almost all parts of the container logistics chain,” he says. “We look at the entire value chain for more efficient solutions.”

Tom Sand, responsible for ABB’s sales related to container ships, explains how ABB’s wide range of products and competences help meet the customer’s needs in a specific project. “Alternators, transformers, rectifiers, switchboards and control systems are all

part of the traditional ABB equipment packages when a new ship is built,” he says.

One particular solution Sand refers to addresses an avoidable loss of energy from the main engine. “If you have a 30 MW main engine, you can recover 10 percent from waste heat,” Sand says. Saving 3 MW through the waste heat recovery system, together with power from a shaft generator, present a considerable improvement to conventional designs.

Another example from Sand’s portfolio of solutions is a method for reducing the amount of installed power for reefer containers. The refrigerator unit of a container with goods that need to be kept below a certain temperature pulls the most electricity the moment a thermostat opts for cooling time. If a large number of units opt for cooling at the same moment, a peak in demand for power would occur.

This peak can be avoided by installing a control system that lets reefer units queue up to be switched on at intervals of a few seconds. As a result, the required installed power can be reduced drastically, losing weight and saving space in addition to lowering the price of the power plant.

Where Sand's duties as a specialist for the container vessel type end, ABB's port specialists' responsibilities begin. Electrification and automation of cranes, as well as shore-side electrical power to a ship at berth, are among the solutions that ABB offers today.

### Using dumb boxes intelligently

The container itself is still just a "dumb box" with a label on. Not even its weight is known, let alone the state of its contents. This may come as a surprise to most people, however, it is a well-known fact in the industry. Even when the weight is stated on the container's manifest, as it is done with valuable cargo, the reality may be quite different. This is where ABB's port-to-port involvement can play a big part. The cranes can capture the data about a container's weight and center of gravity and provide it to the IT systems used to load the ship. Systems that track the goods can compare the container's weight at the next handling point and detect those that have been tampered with.

Managing data intelligently could lead directly to reduced fuel consumption, believes Pestana. "You load the ship to a certain level and then slow down to see how each batch of containers will affect your draft. In the end, you slow down quite a lot. If you know the exact values, you wouldn't have to do this," he says.

Pestana adds that in case of having numerous light containers at the bottom and much heavier containers at the top, the weight would need to be counteracted by ballast water. "Ballast water gets you into more problems with the need for water purification and change of ballast during the voyage," Pestana says.

### Talking to the decision makers

Equipment manufacturers develop close relationships with yards to make sure new ships are built on time and according to budget. Shipowners are also well aware of technologies available before they order new tonnage.

However, according to Lehtovaara, sometimes the decisions are made at the charterer's table, adding insurance companies and financiers to the list of key decision makers involved in optimizing container logistics. Lehtovaara's team is preparing concepts and documentation that will provide all key decision makers with better access to ABB's expertise in power, propulsion as well as in automation. Stay tuned.

Text: Johs Ensby, Margarita Sjrusen

Infographics: Daniel Barradas

Photos: Johs Ensby

