DIGITALISATION IN COMMERCIAL SHIPPING

A Signature Maritime Solution

Solution Brief

SES | Networks

ENABLING THE CONNECTED VESSEL

Commercial shipping has experienced a number of challenges over the last few years, due to falling freight rates, overcapacity and intense competition.

The prospect of a decline in commodity pricing, new trade barriers and lower demand for oil suggests continued volatility, as does the International Maritime Organization's 2020 Sulphur Cap, which is expected to increase the shipping industry's annual fuel costs by as much as $60 billion USD.[1]

Oversupply of vessel capacity remains an issue, with overcapacity predictions in the range of six to nine percent over the next few years.[2] At the same time, new regulations around ballast water, emissions, and crew safety will also take effect, impacting ship owners' bottom line.

These pressures all contribute to the push for digitalisation in commercial shipping. Long an industry dominated by manual systems and processes, ship owners have begun to embrace the potential of digital technologies to reduce costs by improving efficiency. The market has responded over the last few years by pouring hundreds of millions of dollars into maritime-focused start-ups that provide a range of digital capabilities, including:

- The electronic exchange of information on cargo, crew and passengers to reduce errors, improve tracking and traceability, and reduce freight waiting and stopover times
- Remote asset management that leverages data from critical on-board equipment systems to enable more efficient maintenance via predictive diagnostics
- Vessel operations optimisation and route management for improved fuel efficiency
- Smart sensor and actuator networks to ensure safer ship operations

As ships become more connected, the seafarers who work on them become more digitally savvy, particularly digital natives, who are likely to be trained on new technologies and expect ubiquitous connectivity. Reports show that 92 percent of seafarers consider Internet access as a strong influence on their decision of where to work. This makes high-quality connectivity a key emerging requirement for ship owners looking to attract and retain qualified crew who want to be able to connect with family and friends while at sea.

1 *IMO Bunker Sulphur Changes—Smooth Sailing or Rough Seas*, Wood MacKenzie, August 2017.
2 *Sailing in Strong Winds: The New Normal in Global Trade and Container Shipping,* BCG, November 2016.

DIGITALISATION BRINGS INCREASING BANDWIDTH DEMANDS

The demand for ship and crew connectivity is expected to double bandwidth consumption on merchant vessels between 2017 and 2027.[3] Legacy narrowband MSS systems continue to dominate the commercial maritime market, but new bandwidth demands are rapidly overwhelming the capabilities of these systems.

As maritime communications evolve from weather alerts and broadcast warnings to analysing sensor data, videoconferencing and eventually autonomous operations, the high-speed connectivity provided by VSAT systems will become essential for commercial vessels.

Yet, as maritime technology becomes increasingly sophisticated, even that connectivity will eventually be insufficient. Commercial ship owners will need additional capabilities to fully recognise the cost savings associated with digitalisation.

Quality and Reliability

The ability to manage various connected systems on a vessel from an on-shore control centre can save significant maintenance expenditures and ensure safer ships. Yet remote monitoring relies on a high-quality connection from ship to shore. Bandwidth-intensive applications—such as engine performance monitoring, weather routing, and telemedicine in the event of a crew health issue—require a reliable, low latency connection for real-time communication, and assurances that connectivity will be available regardless of the ship's location. It's also essential that the system can identify which applications need to be prioritised at any given time, guaranteeing that mission-critical data receives priority over less time-sensitive communications or personal usage by crew members.

Ability to Scale

As ships become smarter, they will generate exponentially greater volumes of data. This will create greater demands for bandwidth that will likely be difficult to forecast. Predictions around connected devices and the bandwidth they will consume are widely variable across all industries, with little consensus around what will be connected and the extent of the impact on the network. This leaves ship owners with limited visibility into their bandwidth requirements over the next several years as vessels become increasingly connected, exposing them to the risk of substantially higher connectivity costs over time.

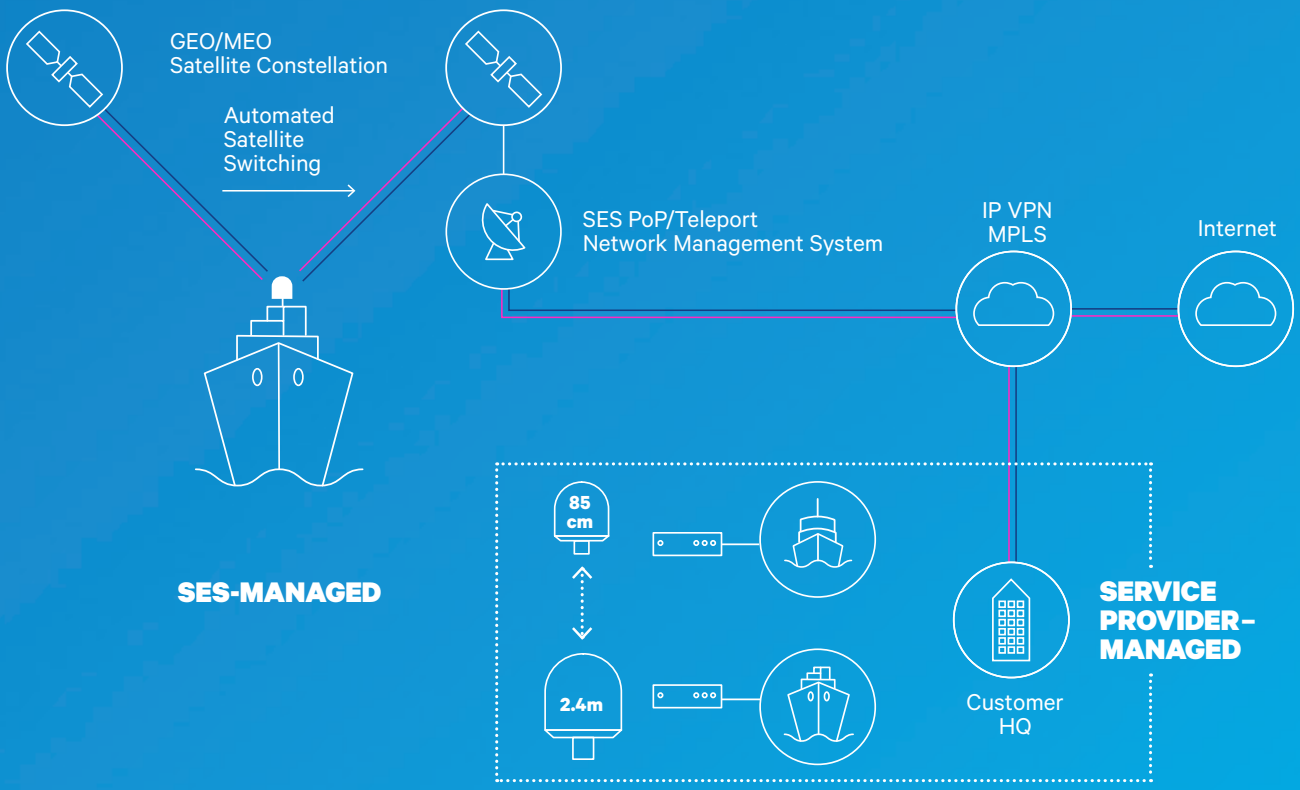
A Maritime Technology Ecosystem

Digitalisation introduces enormous complexity into ship owners' operational environments. New technologies such as artificial intelligence and blockchain have the potential to reduce costs and improve efficiencies. Others, such as cybersecurity, will be essential for their business going forward. These technologies represent a completely new paradigm in commercial shipping, particularly for an industry still dominated by legacy systems and processes. To fully capitalise on the benefits of digitalisation without being bogged down by cost and complexity, ship owners need to access an ecosystem that includes connectivity, as well as digital applications, integration services, training, and more.

3 *Prospects for Maritime Satellite Communications,* Euroconsult, March 2018.

MARITIME CONNECTIVITY FROM SES NETWORKS

Our Signature Maritime Solutions are underpinned by high-quality satellite broadband connectivity. Designed to meet the challenges ship owners are facing today and in the future, our solutions help shipping companies achieve their digital transformation initiatives in the simplest and most cost-effective way.



Commercial Shipping Communications
Bringing connectivity to vessels at sea

A POWERFUL MOBILITY PLATFORM

Built on the power of our Skala Global Platform, our commercial shipping solutions are optimised for maritime requirements with a suite of advanced features. Skala, combined with our advanced satellite capabilities and portfolio of Ascent Lifecycle Services, is delivered as a managed service by maritime service providers. It supports the delivery of seamless, reliable broadband connectivity for the maritime industry, regardless of ship size or location.

- Global bandwidth management capabilities, including the ability to manage bandwidth as a single pool across a coverage area that may span multiple spot beams. This ensures a consistent quality of experience across large geographic areas.
- The ability and flexibility to group bandwidth from multiple spot beams into service plans, which may include different service levels based on bandwidth profiles for individual vessels or specific applications. Maritime customers can allocate bandwidth wherever and whenever it's needed to maximise the value of the capacity investment.
- Automatic beam switching to connect a vessel across satellite footprints without manual intervention, ensuring seamless connectivity with no interruptions.
- A range of remotes designed to support a wide variety of data speeds. Remotes are available in multiple forms, including desktops, rack-mounts and router boards to meet every vessel's individual requirements.
- A sophisticated network management system that drives profitability and ensures a superior customer experience. Our web-based interfaces provide visibility into network performance and activity.

A FUTURE-PROOF SOLUTION

As bandwidth demand for smart ships and crew connectivity grows, ship owners need a solution that can scale with the increasing demand. Our ongoing investment in space and ground assets provides you with a long-term partner to help realise your digital transformation initiatives. Our latest investments include the introduction of high-throughput satellites (HTS), and the launch of O3b mPOWER—the most powerful and flexible satellite system ever.

TAILOR AND SCALE YOUR SERVICE

Our Signature Maritime Solutions enable you to cost-effectively scale your broadband service as bandwidth requirements ramp up by offering a variety of service packages, with the option to upgrade as required. This ensures you can make the best use of your existing capacity, and can add capacity easily when needed.

A REPUTATION FOR RELIABILITY

With more than 30 years experience as a best-in-class satellite operator, and a proven track record delivering mission-critical communications services, we are well-positioned to provide reliable and highly available connectivity for the future of connected shipping.

ADOPTING AN ECOSYSTEM APPROACH

We believe that working together brings everyone further. To better serve our customers, we are actively building an ecosystem of partners focused in areas including advanced analytics, IoT, customer portals and cybersecurity. The aim of this partner ecosystem is to help ship owners capitalise on services tailored to the needs of the maritime industry, without the complexity of needing to build the necessary partner relationships, or integrating the various services.

MARITIME CONNECTIVITY IN ACTION

Our maritime solutions are market-proven on commercial shipping vessels operating around the world.

SATCOM GLOBAL

Connecting crew to what matters most

The life of a seafarer can be very isolated, with limited ability to keep in touch with family and friends. SES and Satcom Global are working together to change that. Built on SES's maritime solution, Satcom Global's Aura VSAT network provides the always-on connectivity that ships and crew need to stay connected. Aura offers packages customised to provide the services that shipping vessels need, at the data rates they require, and in the regions where they sail. Its services include local number dialing that saves on hefty long distance charges, large data transfers of critical sensor data, TV broadcasts that keep crew entertained and up to date, and bring-your-own-device WiFi connectivity that provides access to WhatsApp, Viber and other social media platforms. The partnership between SES and Satcom Global enables ship owners to improve crew recruiting and retention efforts by providing a broadband experience on par with what seafarers experience at home.

SUPPORTING DIGITAL TRANSFORMATION IN COMMERCIAL SHIPPING

Digitalisation promises a way for commercial ship owners to better manage the ups and downs of a notoriously volatile industry. Yet the dominance of legacy systems means the path ahead will not be easy. Ship owners need to get a handle on the wide and complex range of new technologies on offer, while ensuring their communications infrastructure can adequately support digital transformation.

Satellite broadband delivered as a managed end-to-end service and complemented by an evolving partner ecosystem supports ship owners through digitalisation.

Our managed service model removes complexity, offers a more predictable cost structure, and provides access to next-generation technologies, including integration with emerging technologies—such as blockchain and advanced analytics—currently being adopted by other industries. Managed services make it simple and cost effective for commercial ship owners to embark on their digital transformation, and to remain focused on their core business of transporting the world's goods across the seas while keeping their crews safe, satisfied, and connected.

Talk to us today about how our maritime solutions can help you digitally transform your commercial shipping operations.

Ready to reach your digital transformation objectives?

getconnected@ses.com

SES HEADQUARTERS

Château de Betzdorf
L-6815 Betzdorf
Luxembourg

REGIONAL OFFICES

Accra | Ghana
Addis Ababa | Ethiopia
Bogota | Colombia
Bucharest | Romania
Dubai | United Arab Emirates
Florida | USA
The Hague | The Netherlands
Istanbul | Turkey
Kiev | Ukraine
Lagos | Nigeria
London | UK
Miami | USA
Mexico City | Mexico
Moscow | Russia
Munich | Germany
Paris | France
Princeton | USA
Riga | Latvia
Rio | Brazil
São Paulo | Brazil
Singapore | Singapore
Stockholm | Sweden
Warsaw | Poland
Washington DC | USA

Published in November 2018.

For more information about SES, visit www.ses.com

SES | Networks