

MANIFESTO

DEFINING THE SMART PORT



THE
SMART PORTS
ALLIANCE

Published by Kevin Martin

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**THE
SMART PORTS
ALLIANCE**

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Many industries are finding that the greater cost lies in not using technology. Countless household names have been replaced by new digital businesses because they failed to take account of the disruptive nature of technology.

FORE WORD



**KEVIN
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Founder
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Ports are complex entities. The business of a port revolves around its role as a hub where the activities of many other organisations converge - often on a massive scale. Consequently they are subject to a huge range of influences beyond their control.

In the past, the costs and risks of using expensive, inflexible technology to manage these complex entities was significant. Over the last ten years, innovation and economies of scale have made technology more affordable, flexible and easier to use.

Many industries are finding that the greater cost lies in not using technology. Countless household names have been replaced by new digital businesses because they failed to take account of the disruptive nature of technology.

The expectations and social values of the modern workforce have also changed. New entrants to the workforce recognise that traditional workplace roles are evolving.

They want to use technology in creative ways. They value the mobility and work/life balance that technology offers. They assess prospective opportunities based on workplace culture and organisational values.

Ports are not exempt from these changes. The talent pool will gravitate to the industries that meet their expectations. Without the capability to deliver transformational change necessary for survival, organisations that fail to adapt will lose out to responsive competitors. The cost of catching up will be too great and they will be consigned to history.

Ports are responding though. They are acquiring leadership from other industries experienced in digital transformation. New technology-based roles are being introduced as delivery focus shifts from inward (functionality to meet business needs) to outward (collaborative outcome based functionality). Technology companies and consultancies are also noticing the changing attitude and preparing their response.

The next ten years will be a transformative period for the port industry, I'm excited to be a part of it.



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"WHEN YOU'VE
SEEN ONE PORT...
YOU'VE SEEN ONE
PORT"

DEFINING A SMART PORT

Ask anyone in the maritime industry to define a Smart Port. It's highly likely that you will receive a different answer every time. If you ask enough people, you will eventually start to see some convergence in the answers, but probably still not enough to come to an unequivocal definition.

The term Smart Port appears to emerge around the mid-2010's, and is first referenced in a media article in early 2016. In that article, the opening paragraph highlights the views of some industry experts that Smart is a mindset rather than

about specific technologies. Since then, the Smart Port narrative has moved towards a harder definition, with most publications specifically citing the use of emerging "technologies" such as Artificial Intelligence (AI), Automation, Big Data, Blockchain and Internet of Things (IoT).

The term "technologies" is highlighted here as many of these are not technology in their own right, but rather a collection of technologies grouped to achieve a goal and depending on the goal, different actual technologies are applied,

However, moving the conversation in this direction may be hampering progress in the industry. Many of these technologies and concepts are not clearly understood, and some have yet to prove their value in any industry.

For the concept of automation, it's the reverse. It has been around since the late 1990's, and one could argue that the term "emerging" is no longer appropriate. Although the term could be applied to many processes, most people associate it with physical equipment used in vessel or yard operations of large terminals. There are many examples of successful deployment and demonstrated value in terminals around the world. However, there is a growing conversation around the challenges that it has brought to others, such as labour protests, failure to deliver on perceived productivity benefits and escalating costs.

In fact, Automation becomes a compelling warning for why it is important to truly understand the mechanics of the business before selecting and deploying technology. Plunging into a technology project without thorough evaluation of suitability and a well formed understanding of potential issues (or indeed failing to tackle those potential issues at the outset), can have catastrophic consequences.

In many cases around the world, ports are now realising that, while automation is excellent for standardised and highly predictable environments, the introduction of exceptions, especially those involving human interaction, can result in reductions from anticipated performance, and lead to higher costs to accommodate those exceptions. Had the exceptions been

factored in at the start, greater clarity may have led to different decisions on approach or indeed whether to proceed at all.

Business executives like clarity. They like to have a clear understanding of how the technology will improve their organisation and the financial benefits that it can offer. They also like to understand the negatives in order to reach a balanced, well informed decision.

Existing definitions of a Smart Port offer neither of those things, and at the time of writing it is unlikely that anyone can demonstrate where AI, Big Data, IoT and Blockchain have already made a positive impact on efficiency or the bottom line to an individual port.

Thus we come back to the concept of Smart Ports as a mindset. When the definition focuses on the organisation rather than the technology, it brings control back into the hands of the business leaders, and out of the hands of those who would use the "confusopoly" perpetuated by the wealth of information, or dis-information, to sell their products and services.

Although there is a level of standardisation that could be achieved, it is fair to say that every port in the world is unique. Each one has its own blend of customers, cargo mix, geographical constraints, marine and hinterland connections, not to mention the regulatory and compliance issues or political, economic and social challenges.

It is the business leaders who understand the specific economic and operational challenges that their organisation must navigate on a daily basis. They are familiar with external political, social, legal and

environmental pressures exerted on their business at a local, national and international level and must consider the implications of technology adoption within that framework.

Taking all internal and external influences into account, executives can shape the attitude to technology within their organisation. It is within their power to create the conditions for successful technology delivery. They can set strategic ambitions. They control the finances. They can create knowledgeable teams to truly

relevant to its own unique context.

Acknowledging that the context in which a port operates is subject to continual change, and that technology continually evolves, a suitable definition would support the concept that the Smart Port is a journey, not a destination, and that the Smart Port should continually strive to be a smarter port.

The smallest changes can often make the biggest difference. Traditionally, port executives are most likely to think of themselves as working in the port industry,



evaluate technologies against specific business problems and quantify the potential value (or cost) of the technology to the business. They create the collaborative partnerships with other organisations.

In short, they define success, and they control whether the organisation meets that definition of success.

The challenge therefore is to create an international definition that takes into consideration the variety of challenges faced by ports globally, yet allows any port to be a Smart Port using technology

using technology to deliver services.

However, Smart Port executives think differently. To them, the Smart Port is a technology business, specialising in the operation of ports. This minor semantic change creates a fundamental shift in perception, and can have a profound impact on the attitude of the business to technology.

The Smart Ports manifesto is not a methodology for delivering technology projects, but it does provide a framework for creating the underlying culture that is fundamental to the success of a digital transformation programme.

**"THE SMART PORT IS A TECHNOLOGY BUSINESS,
SPECIALISING IN THE OPERATION OF PORTS"**





WHAT IS A SMART PORT?

A Smart Port equips the workforce with relevant skills and technology to solve the unique internal and external challenges of the organisation, and to facilitate the efficient movement of goods, delivery of services and smooth flow of information,

Using a holistic approach, the Smart Port achieves results without creating new challenges internally or elsewhere in the supply chain eco-system.

The Smart Port minimises the negative impacts of its activities on the natural environment and enhances the surrounding communities - economically and socially.

The material benefits of chosen technologies allow the Smart Port to: -

- Improve efficiency to gain competitive advantage
- Increase business resilience to economic shocks or disruptive forces
- Extract maximum value from physical assets
- Develop new revenue streams based on digital value propositions
- Increase employee engagement and wellbeing
- Achieve and exceed environmental commitments

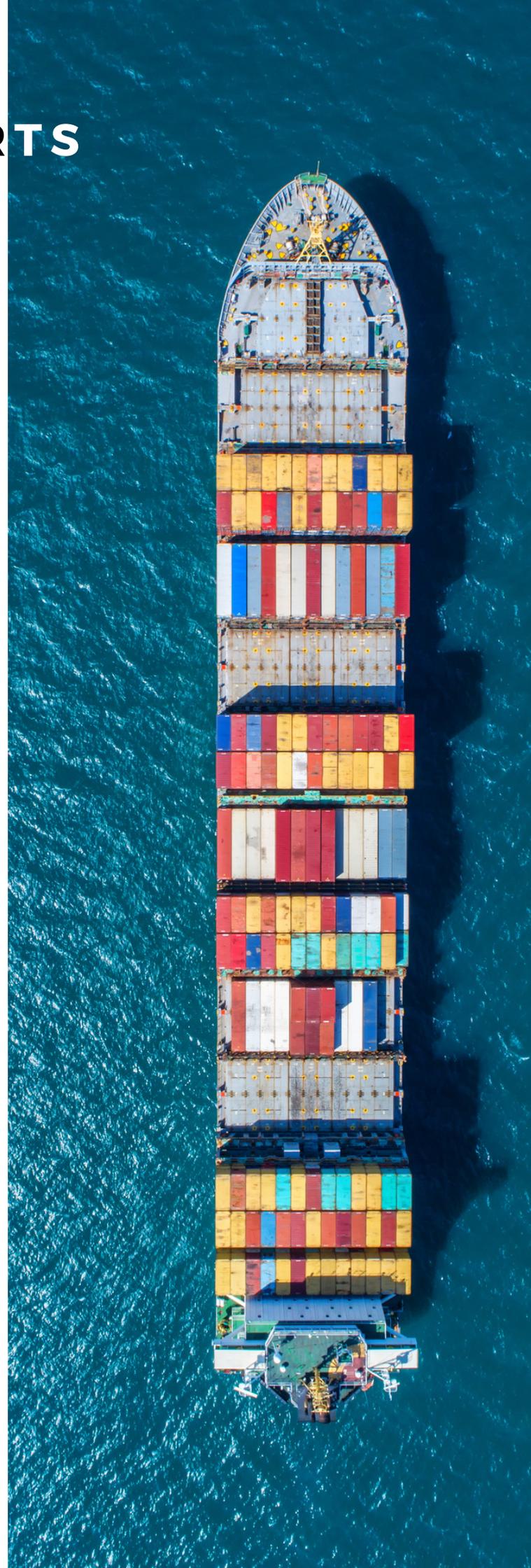


"A SMART PORT IS NOT DEFINED BY THE USE OF ANY ONE PARTICULAR TECHNOLOGY OR CONCEPT"

THE SMART PORTS MANIFESTO

We work together to deliver greater value from our organisation to the supply chain and the communities we serve. In doing so we have come to value: -

- **People:** We empower our people with the technology and skills to perform meaningful work that enhances our individual and collective performance in a safe and secure environment
- **Collaboration:** We collaborate with each other, and with customers, communities, suppliers, partners, industry colleagues, government and academia to advance towards our individual and common goals.
- **Culture of Change:** We embrace change and seek out the opportunities it brings. We accept change at all levels - from our business processes to our strategic direction. We review and adapt regularly to ensure we are always moving in the right direction
- **Positive Impact:** Our individual progress does not come at the expense of others. We consider the impacts of our actions on our people, collaborators, customers, the environment and the communities we serve



SMART PORT PRINCIPLES

The Smart Port is committed to delivering positive, enduring change through the use of technology. These eight principles create an environment for successful technology and business change.

Leaders Create Success

Smart Port Executives and Senior Management Teams openly advocate the use of relevant technology to solve business problems, and support technology driven change in the business. Clear technology-driven strategic objectives provide definitive guidance for the use of technology in the delivery of the Smart Port. Leaders create a compelling narrative and communicate downwards. Employees amplify the message.

Employee Engagement is a Fundamental Requirement for Success

The Smart Port engages with employees at every stage of the journey. Employees clearly understand the future state of the business and their role within it. The Smart Port equips employees with the knowledge and skills required for success.

Always Understand The Problem First

The Smart Port focuses on understanding the root cause of the business problem, in order to select the correct solution. Although the Smart Port is committed to the use of technology, it also recognises that on some occasions, people or process may be the problem.

Fail To Plan, Plan To Fail

The Smart Port recognises that the industry is subject to continual evolution and turbulent political, economic and social influences. It is comfortable with change and committed to re-imagining every aspect of the operating model in response to the changing environment. Similarly, the Smart Port recognises that technology may radically change existing business processes, or require new people and new skills.

It has a clear understanding of the current technology position, a target state, and a flexible, high level plan to deliver the future operating model (including contingencies for all possibilities, however unlikely).

As a flexible organisation, it implements mechanisms to continually evaluate every aspect of the business and the supporting plan. Where port activities or projects are no longer consistent with requirements or areas of new opportunity emerge, the Smart Port evaluates and, if appropriate, redirects efforts to ensure that it is always progressing in the right direction.

Decisions Must Be Evidence Based

All strategic and operational decision making processes are supported by data. There is no place for gut-feel, instinct, or intuition. No data? No decision. Incomplete Data? No decision, unless certain that gaps cannot be filled.

Integration Is Key To Efficient Service

The Smart Port is deeply integrated with all actors involved in port and supply chain activities to facilitate the seamless electronic exchange of information. Timely communication is fundamental to the efficient flow of transport and goods through ports, and effective delivery of services to customers.

Innovation Creates Competitive Advantage

The Smart Port continually evaluates new technologies to understand the value proposition and gain competitive advantage. The Smart Port undertakes rapid testing and pilot projects to assess the suitability and implications of new technology on the business and other stakeholders. The Smart Port expects trials to fail, but conducts in a way that successful pilots are followed by rapid adoption throughout the business to maintain an industry-leading position.

The Three Pillars of Sustainability are Interwoven

The Smart Port recognises that long term sustainability of the business is dependent on the long term health of the planet and the commitment and capabilities of the people undertaking the activities. The Smart Port measures and understands the effects of port activities at a local level, and collaborates with all stakeholders to understand the external effects.

While financial return is essential for the short term continuation of the business, the Smart Port accepts that some benefits of technology may not immediately

manifest in the profit pillar, nor in the short term.

When building a business case for technology, the Smart Port looks beyond arbitrary short-term financial cycles to consider the effects of less tangible long term returns in the People and Planet pillars that create a stable platform for growth and sustainability.

The Smart Port recognises that positive impacts in the People and Planet sustainability pillars will ultimately deliver positive results in the Profit pillar.



SMART PORT SUSTAINABILITY GOALS

In recent times, the word "Sustainability" has come to be most commonly associated with the effects of our activity on the natural environment. All businesses should mitigate their impact on the environment to ensure a long term future. However, there are two other pillars which must be considered.

In the early 1970's, renowned management consultant Peter Drucker defined a business as "a social group that differs from other social groups in only one way: Businesses must have customers".

As a social group, the port relies on the performance of people to attract customers. Regardless of the ownership structure (Public, Private or State), like any other business, it must be profitable to survive.

Thus when considering the application of technology to its activities, the Smart Port takes all three pillars of business sustainability - People, Planet and Profit into account.

The United Nations has defined 17 Sustainable Development Goals, designed to impact positively on people, the planet, and global economic prosperity. Not all of these goals are relevant to any one industry, but every industry can play a role in creating a better global society.

The values and principles that underpin the Manifesto and the definition of the Smart Port align with ten Sustainable Development Goals (which we have categorised into the three pillars of business sustainability).

Ports are key nodes in the global Supply Chain and Maritime industries. Individually, the Smart Port generates a positive impact locally, on the surrounding communities, contributing locally to the achievement of Sustainable Development Goals, and through connections to other ports, at an international level.

When connected Smart Ports work together, the positive effects grow exponentially. If every port adopted the Smart Ports mindset, the collective global impact could be transformational.

In the following pages, we share the latest update from the United Nations on progress towards each goal. We also share our thoughts on how Smart Ports can use technology to achieve its own business sustainability objectives and support the journey towards the achievement of these goals to create a better global society.



SUSTAINABLE DEVELOPMENT GOALS



PEOPLE: GOOD HEALTH AND WELLBEING



PROGRESS OF GOAL 3 IN 2020

In 2019, major progress had been made in improving the health of millions of people, increasing life expectancy, reducing maternal and child mortality and fighting against leading communicable diseases. However, in 2020, progress was significantly impacted by the Covid-19 outbreak, with disruptions threatening to reverse decades of improvements.

Approximately two thirds of the global population do not have access to essential health services. Concerted efforts are required to achieve universal health coverage and sustainable financing for health. The rate of decline in non communicable diseases is not enough to achieve targets. Based on 2016 data, almost 800,000 died by suicide, with 79% occurring in low and middle-income countries. In 2016, air pollution (indoor and outdoor) caused 7 million deaths, while inadequate water, sanitation and hygiene resulted in a further 870,000 deaths.

Despite the pace of technological change, work will continue to revolve around people for at least the next ten years and possibly much more. The Smart Port recognises that for the foreseeable future, technology will be used to enhance human performance rather than replace it.

By acknowledging this, the Smart Port can focus on using technology to create a better employee experience, while also progressing the business towards a new data-driven future.

Smart Ports can use technology to automate the mundane repetitive tasks. Equipping people with modern digital tools increases productivity and enables the employee to take on more challenging work that would previously have been unfeasibly time consuming.

Using technology to analyse and solve complex problems or identify new opportunities can give an employee the opportunity to contribute to organisational success and obtain a sense of value. A satisfactory work experience contributes significantly towards good mental health.

Smart Ports can also use technology to create a safe working environment and reduce the likelihood of physical harm. Technology can also be used to monitor the quality of the environment, and mitigate the effects of port activities on physical or respiratory health.

Creating a positive experience can invoke loyalty and passion for the role. This in turn is reflected in the employees approach to customer service, which ultimately benefits the Smart Port.

PEOPLE: QUALITY EDUCATION



PROGRESS OF GOAL 4 IN 2020

Despite the considerable progress on education access and participation over the past years, in 2020 school closures kept 90% of students - 1.5 billion children and young people out of school, reversing years of progress. More than half of children and adolescents do not meet minimum proficiency standards in reading and mathematics.

Rapid technological changes present opportunities and challenges, but the learning environment, the capacities of teachers and the quality of education have not kept pace. Refocused efforts are needed to improve learning outcomes for the full life cycle.

"People don't fear change. They fear not being prepared for change".

The success or failure of technology projects hinges on the capabilities of the people within the business to understand and use the technology.

Most technology projects fail to deliver the intended benefits because organisations do not involve employees or prepare them with the knowledge and skills to use new systems and processes..

While some people are comfortable with technology, many remain apprehensive - both about using the technology and what the introduction of technology means for their place in the workforce..

The Smart Port recognises that in the

modern world, where technology will enable the competitive advantage, the workforce must be proficient with technology of all types.

The Smart Port educates its employees about new technologies, explains the need for new systems and processes, and how the change can benefit the employee.

By supporting the workforce through a variety of training and education programmes, the Smart Port not only improves the potential for successful project deliveries, but opens up greater possibilities to maximise the value of chosen solutions. Empowering employees with the deep knowledge and skills required to allows them to be more independent, creative and efficient in dealing with the day-to-day challenges.

PEOPLE: SUSTAINABLE CITIES AND COMMUNITIES



PROGRESS OF GOAL 11 IN 2020

Rapid urbanisation has resulted in inadequate and overburdened infrastructure and services, and worsening air pollution. Data collected in 2019 from a sample of 755 cities in 95 countries showed a general increase in the extent of built-up area per person. Based on 2019 data from 610 cities in 95 countries, the share of land allocated to streets and open spaces,

which is critical to cities productivity and the social and health dimensions of their populations, averaged around 16% globally. Streets account for around three times as much urban land as open public spaces.

As historically significant hubs providing access to global trade, Ports are often surrounded by cities and communities that have evolved around them as trade has increased.

These ports often contribute significantly to regional employment and economic prosperity. However, the types of industry and the requirement for movement of goods between the port and hinterland locations often means that port-related activities can have a detrimental impact on the surrounding cities.

As global trade continues to grow and traffic through the port increases, left unchecked the effects of port related activities may become worse.

The effects of activities under the direct control of the port may often be insignificant compared to the effects of shipping and other modes of transport, Nevertheless, the Smart Port recognises its responsibilities to the surrounding communities, and embraces the use of technology to limit its own contributions.

While the Smart Port may have limited influence over the activities of port users, it can use technology to organising movements in the most efficient way, mitigating the effects on the surrounding population.

By collaborating with local agencies and integrating systems, the Smart Port can help to create a sustainable environment for the communities it serves.

PLANET: AFFORDABLE AND CLEAN ENERGY



PROGRESS OF GOAL 7 IN 2020

The world is making good progress on increasing access to electricity and improving energy efficiency. The global electrification rate rose from 83% in 2010 to 90% by 2018. Access to clean fuels is accelerating. The renewable share of total final energy consumption increased from 16.3% in 2010 to 17.3% in 2017. Much faster growth is required to meet long-term

climate goals. Global primary energy intensity improves annually, but is still short of the rate required to reach target 7.3. International financial flows to developing countries reached \$21.4bn in 2017. Hydropower projects received 46%, while solar received 19%, wind 7% and geothermal 6%.

Smart Ports recognise the importance of moving to cleaner fuels throughout the supply chain.

At sea, the transition to alternative fuels will be driven by the shipping industry, with ports acting in a supporting role to provide access to fuel infrastructure during vessel calls. The Smart Port is ready and willing to collaborate with customers, industry partners, government organisations, energy providers and technology vendors to understand the direction of the industry and deliver the next generation of fuel solutions.

On land, the Smart Port is already exploring opportunities to transform its own infrastructure, using sustainable methods of power generation and storage.

The drive towards electrification of domestic and commercial road-going fleets is already under way. The Smart Port will not be the driver of change in the transportation industry, but in collaboration with industry, government organisations, energy and technology providers, it can play a significant supporting role.

A shift of such magnitude requires significant investment, both in the equipment and supporting supply infrastructure. Ports cannot absorb the full burden of cost. Through collaboration, the Smart Port identifies innovative ways to transform its own generation/consumption capabilities and support port users. In turn, these solutions may also support the surrounding communities.

PLANET: CLIMATE ACTION



PROGRESS OF GOAL 13 IN 2020

2019 was the second warmest on record and the end of the warmest decade. The global community is far off track to meet the targets of the Paris Agreement. Although greenhouse gas emissions were projected to drop by 6% in 2020 and air quality improved as a result of travel bans and the economic slowdown to combat the pandemic, the improvement is

temporary. Governments and businesses should use the lessons learned to accelerate the transitions needed to achieve the Paris agreement, redefine the relationship with the environment and make systemic shifts and transformational changes to lower greenhouse gas emissions and climate resilient economies and societies.

The maritime industry is at risk of massive disruption from the threat of changing weather patterns, extreme weather events and rising sea levels. A continued rise in global temperatures may fundamentally alter trade routes as new passages open up, placing these regions at risk from the effects of international shipping.

It is not only the flow of goods that risks being disrupted by these extreme events. Ports themselves are at risk from rising sea levels.

In working to reduce its energy consumption or generate power from clean sources, the Smart Port mitigates its own contribution to the acceleration of climate change.

The Smart Port may have some influence over the behaviour of certain port users, and can deploy technology where appropriate to influence a reduction of emissions through more efficient movement of transport. However, in many areas, the Smart Port will only play a reactive supporting role.

The Smart Port collaborates with government, industry partners, port users to support the efforts of all actors in the supply chain as they implement new technologies that result in the reduction of emissions and achievement of individual and international targets.

PLANET: LIFE BELOW WATER



PROGRESS OF GOAL 14 IN 2020

Oceans and fisheries continue to support the global populations economic, social and environmental needs, while suffering unsustainable depletion, environmental deterioration and carbon dioxide saturation and acidification. Current efforts to protect key marine environments and invest in ocean science or not yet meeting the urgent need to protect this vast, but fragile resource.

The ocean absorbs around 23% of the annual emissions of anthropogenic carbon dioxide to the atmosphere, helping to alleviate the impacts of climate change on the planet. However this results in a decreasing pH and acidification of the ocean. A new data portal shows an increase in variability in pH and the acidity of the oceans by 10 to 30% in the period 2015-2019.

Ports take the stewardship of the marine areas within their jurisdiction seriously. Competent management of the marine estate is essential for the safe passage of ocean-going trade. In many areas, the marine estate supports other economic and leisure activities, as well as being a source of food for the surrounding communities.

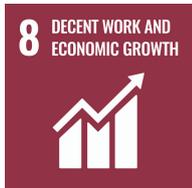
Ports must play an active role in ensuring that use of the sea to transport goods does not have an adverse impact.

The Smart Port understands the effects of technologies on the marine environment and makes balanced assessments on the suitability of those technologies for their environments. Technologies must not solve one environmental problem at the expense of creating another.

The Smart Port uses technology to monitor the environment below water - to understand water quality, sediment quality and geological impacts - and ensures that its marine estate continue to support the trade flows that are important for our communities, while also maintaining a safe environment for the marine life below.

The Smart Port works with ocean-going trade partners to understand their needs and challenges. It supports, where possible, with the transition to clean fuel technologies and modern ship operations/management through the provision of relevant facilities and infrastructure.

PROFIT: DECENT WORK AND ECONOMIC GROWTH



PROGRESS OF GOAL 8 IN 2020

Inclusive and sustainable economic growth can drive progress and generate the means to implement the Sustainable Development Goals. Globally, labour productivity has increased and unemployment is back to pre-financial crisis levels. However, the global economy is growing at a slower rate. More progress is needed to increase employment

opportunities, particularly for young people, reduce informal employment and the gender pay gap and promote safe and secure working environments to create decent work for all.

In 2021, the global impact of the Coronavirus pandemic on the economy has yet to be fully understood. However, it is clear that global trade has suffered a serious impact and it is reasonable to expect that it will take some time to recover.

While the effects of the pandemic have been devastating for many, there has never been a better opportunity to transform the working environment, using technology to create the port of the future.

Along with many other industries, in order to maintain business continuity, many ports have been forced to shift back office functions to remote digital ways of working at an unprecedented pace. Technology has proven its place in the business resilience toolkit. There are however many

members of the labour force for whom physical presence is a necessity, exposing them to the risk of infection and serious illness.

The downturn will undoubtedly result in increased unemployment as ports reduce costs and redistribute workloads across the remaining workforce. The Smart Port recognises the role that technology has played in the global response, and will use it to reshape the organisation and create decent work - indispensable roles in efficient processes that can weather similar future events, and that can be performed remotely if required. The Smart Port will also invest in relevant technology where possible to protect the physically present labour force from harm.

PROFIT: INDUSTRY, INNOVATION AND INFRASTRUCTURE



PROGRESS OF GOAL 9 IN 2020

In 2019, manufacturing experienced its slowest year-on-year growth since 2012. The pandemic caused major disruption in global value chains and the supply of products. The share of medium to high technology goods in world manufacturing reached nearly 45% in 2017.

In 2017, Global CO2 emissions from fuel combustion increased. International investment in R&D as a proportion of GDP increased by 0.2% between 2000 and 2017. It is estimated that 96.5% of the world's population is covered by at least a 2G network, and 81.8% by an LTE network.

The ambition to transition the port industry to Industry 4.0 may finally be realised. The Smart Port conversation is growing in pace, and more technology institutions are taking an interest in opportunities within the supply chain, including ports.

As a transit hub, efficient communications are essential to the smooth flow of goods through a terminal. The emergence of high speed communications infrastructure creates huge opportunities for the Smart Port to maximise the efficiency of its operation.

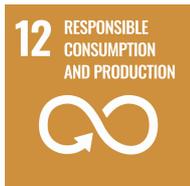
Innovative use of technologies capable of high data rate transfer allow the Smart Port to monitor and manage operations at low levels of detail and on a scale never seen before.

Advances in the capture and analysis of data can allow the Smart Port to process and extract insights from huge volumes of data in minutes - activities that would once have taken weeks to complete.

The use of such technologies allows the Smart Port to anticipate demand for services and proactively manage infrastructure/resources, or identify and resolve potential issues before they impact on service.

The Smart Port will combine the use of relevant innovative technologies to resolve its problems. However, as every port is unique, the truly innovative Smart Port will understand the problem first so that it can select the correct solution

PROFIT: RESPONSIBLE CONSUMPTION AND PRODUCTION



PROGRESS OF GOAL 12 IN 2020

The world's reliance on natural resources continued to accelerate in the past two decades. The pandemic offers countries an opportunity to build a recovery plan that will reverse current trends and change consumption and production patterns towards a sustainable future.

Resource efficiency and improved practice is required to reduce consumption in the future. The continued prevalence of global fossil fuel subsidies adversely affects the task of achieving an early peak in global CO₂ emissions.

As global trade continues to grow, the requirement for additional port resources also increases, in order to accommodate the additional throughput.

Many ports already use significant land resources to service their customers. The natural assumption is that greater throughput requires greater land area.

As many ports are surrounded by densely populated areas, the acquisition of additional land may be difficult and expensive. The expansion of the port outwards into the sea may be an alternative option, particularly if there is also a need to accommodate larger vessels. Again, this could be expensive and may impact on the underwater environment, defeating efforts to achieve SDG14.

Ports may also need to balance the positive aspects of trade growth on the surrounding population (more jobs, better economic opportunities) against the potential impacts on the environment from increased traffic (reduction in air quality, effects on productivity from increased congestion).

When considering growth in trade, The Smart Port considers how technology can be used to maximise operational efficiency. Advances in data analysis and planning allow the Smart Port to evaluate scenarios, determine the optimum use of existing resources and minimise additional land usage or infrastructure investment. The goal of the Smart Port should be to achieve business and sustainability goals in the same or smaller physical footprint.

PROFIT: PARTNERSHIPS FOR THE GOALS



PROGRESS OF GOAL 17 IN 2020

Strengthening global partnerships and enhancing the means of implementing the goals have remained a challenge owing to scarce financial resources, trade tensions and technological obstacles. The pandemic resulted in the largest outflow of capital from emerging markets ever recorded. World trade is expected to plunge by between 13% and 32% in 2020.

Strengthening multilateralism and global partnership is more important than ever before. The global nature of the pandemic requires the participation of all governments, the private sector, civil society organisations and people throughout the world.

Whether considering the UN Sustainable Development Goals or the three pillars of business sustainability, in a global industry, collaboration is essential for progress.

While many individual companies have successfully integrated systems that allow them to fulfil their role efficiently, the global supply chain is currently challenged by a low level of cross industry standardisation and integration. This creates friction which can lead to unnecessary delays in the movement of goods, and frustration for the end user, who has no visibility over their goods in the transit phase.

In order to create frictionless international movement of goods, greater collaboration is required from all actors in the chain to

develop new international standards for data exchange that will improve the flow of information between systems.

The Smart Port understands that a level of trust and a willingness to share cargo related data are essential to the efficient operation of the overall supply chain, and that the availability of data will not only improve the status quo, but open up the opportunity for the creation of new digital tools and services to improve the industry and the experience of the end customer.

The Smart Port co-operates with all parties to achieve its own sustainability goals and supports others in the achievement of their goals. By working together to achieve business goals aligned with UN SDG's, the industry contributes to a better society.

