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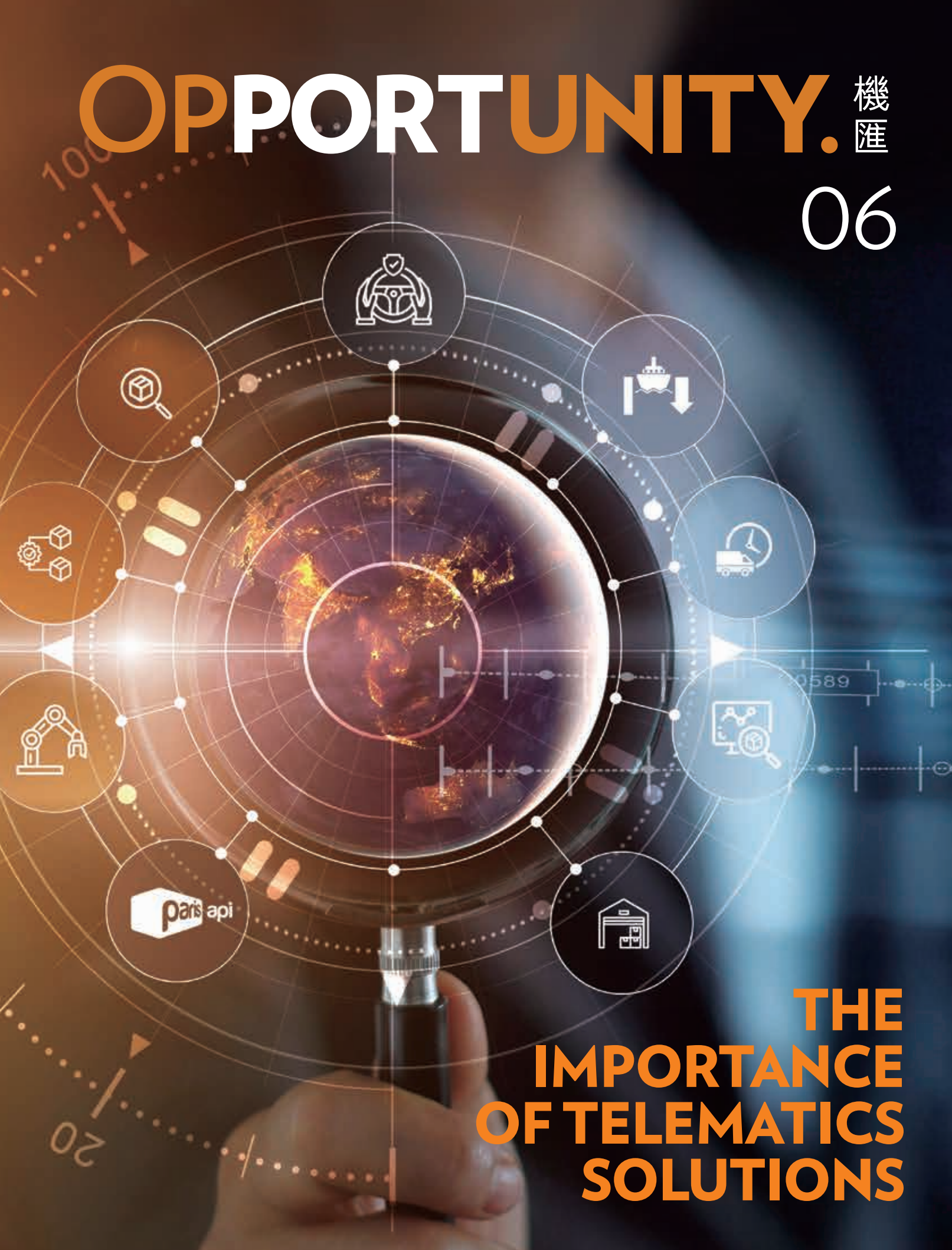

THE IMPORTANCE OF TELEMATICS SOLUTIONS

CONTENTS

Content Update: Mayer Brown was mentioned in issue 5 by their previous name, Mayer Brown JSM. The name change occurred during the production of the magazine.

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"Hutchison Ports is turning fifty this year - as we celebrate this milestone, it is important that we look to the future as well as the past."

Over the last five decades we have built a solid foundation for our Group, thanks to a combination of the hard work and expertise of our people who ventured into the uncharted territories of the port and logistics sector with an entrepreneurial spirit. This has served us well and paved way for the expansion of our business globally.

We have developed a balanced portfolio of ports across the world. Throughput volumes are evenly distributed amongst all the regions, creating a portfolio that is resilient, especially in times of volatility with the changing trade routes that have resulted from political headwinds. We provide flexible options, helping our customers adapt to shifting trade patterns through our global network of strategically located ports.

Driving the development of Hutchison Ports is our four-pronged smart network strategy which consists of the standardisation of systems and data, automation of operations, digitisation of our business information and replication of our successes.

We are committed to investing in AI and other technological solutions to enhance our terminal operations. We are also increasing the deployment of remote-controlled cranes across our port - by 2020, we will have doubled the number of remote-controlled cranes into nine countries. As well as retrofitting existing equipment, we are also looking to the exciting possibilities at our greenfield sites. In Stockholm, we will be installing fully-automated straddle carriers from day one of operations. You will read about the latest developments at Hutchison Ports Stockholm in this issue.

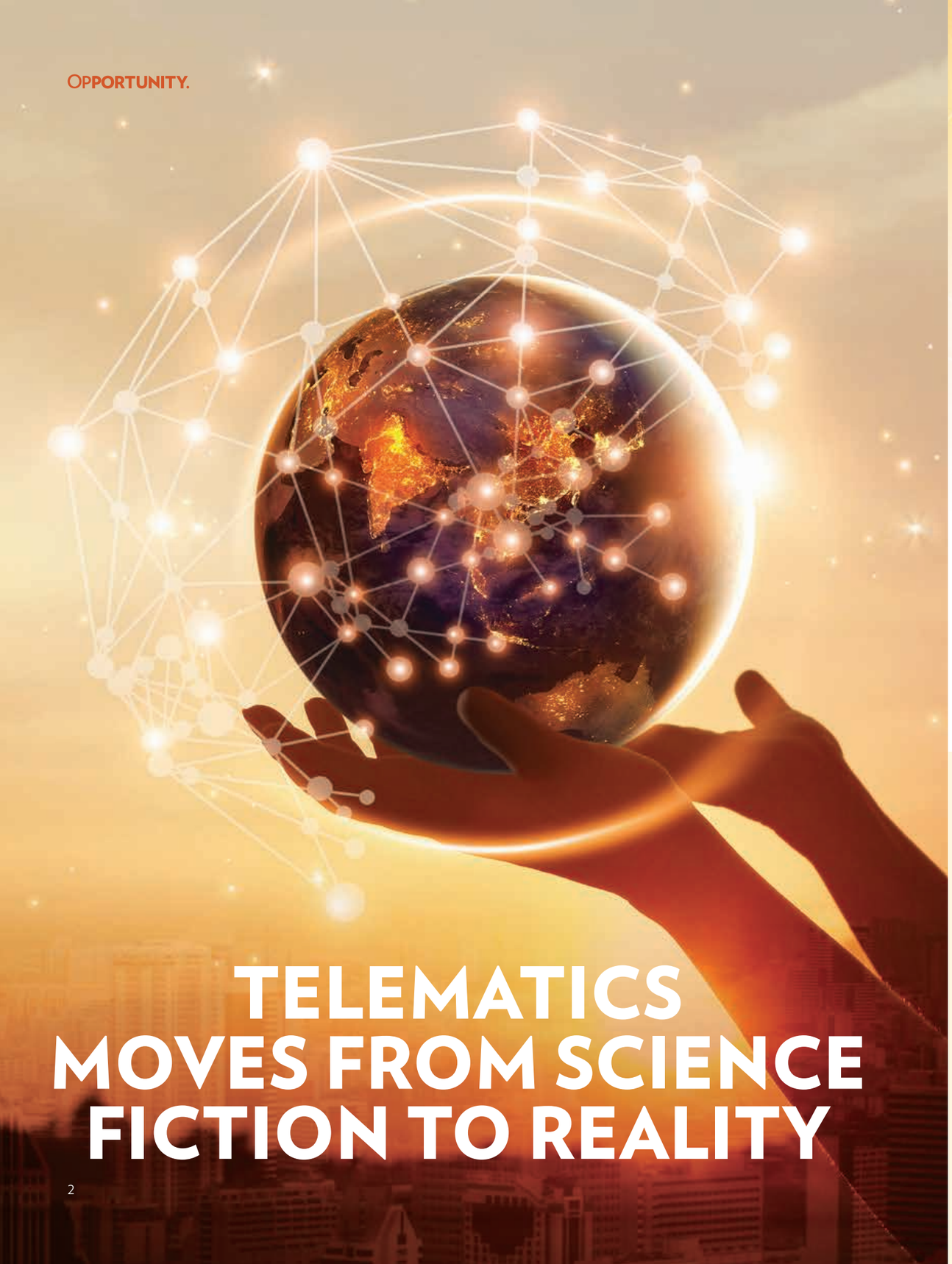
We are also looking to expand our capabilities beyond the port by developing our landside logistics services and supporting cargo owners by offering smart technology that streamlines booking and payment processes. You can read more about these plans in both the cover story of this issue, 'Telematics moves from science fiction to reality' and the feature story 'Paris API - the next generation in transport planning and optimisation'.

As we move forward, we will be exploring how to better harness and manage data flows, while continuing to look at the potential of blockchain solutions so that we are in the best position to capture opportunities. We explore this topic further in the article 'Blockchain at the crossroads'.

Hutchison Ports' greatest asset has always been its people and we are proud that we have been able to identify and nurture talented staff members through applying our Leadership Competency Model. We are now going to expand this programme further to empower the next generation of Hutchison Ports' leaders. The new model is derived from our corporate values represented by the acronym UNITY. Under this model there are clear guidelines to help cultivate leadership qualities and corporate entrepreneurship of the highest standard across our network. It will also serve as a compass to guide us in supporting potential staff into new leadership roles to meet future challenges.

Our investment in people and technology will continue to be key for driving our business growth as we look forward to even more new opportunities for Hutchison Ports.

Eric Ip
Group Managing Director
Hutchison Ports



TELEMATICS MOVES FROM SCIENCE FICTION TO REALITY

As the Internet of Things (IoT) moves from science fiction to reality, the way we live our lives will change forever. In our homes, offices, neighbourhoods and on the road, IoT will provide critical links to enhance connectivity.

Trucking is also becoming an inter-connected business, as the use of telematics technology allows data captured while driving to be processed and transmitted over long-distances.

In the consumer insurance sector companies are using telematics to measure the driving competency of young drivers including braking, cornering, mileage, locations, time of day and speed. The driving data is recorded on a 'black box' then evaluated and a competency score is recorded and this is used to customise a policy for each driver.

Now the technology is proving to be an important and practical tool for fleet managers to know everything that is happening to their trucks while in transit from vehicle routes, fuel levels, location, engine idling and the delivery status of shipments.

"Telematics allows fleet managers to monitor and manage the fleet's safety in emergency situations. This technology can also act as a proactive measure to ensure the goods and drivers are well-protected," according to Telematics.com

In recent years, telematics has proven in many ways to improve working conditions and business efficiencies for the trucking sector which fleet owners' can report for International Fuel Tax Agreement compliance in the United States (US) and beyond.

Why telematics is making a difference?

Simplifies logistics processes

Makes supply chains more cost-effective

Delivers in-transit monitoring of shipments

Fleet managers now use telematics as an early warning when there is a problem, such as a truck being delayed in-transit. The manager can then take immediate measures to resolve the problem such as changing the transport route, adjusting temperatures within the container to ensure products are kept at optimum temperatures.

Currently the main benefits are fuel savings through route optimisation and knowing the exact delivery times of shipments.

MORE THAN 75 PERCENT OF FLEET MANAGERS USING TELEMATICS

Because of the tangible benefits of telematics in trucking its use is on the rise. In a 2018 survey by teletrac Navman, 77 percent of fleet managers reported using telematics for vehicle tracking. Today, these business leaders use the technology to monitor the movement and status of vehicles, gaining an overview of fleets in real time, like never before. This comprehensive view allows for better management of warehousing and logistics.

This evolution is, in part, thanks to the ELD Mandate (electronic logging device mandate) in the US. The technology's uptake has been driven by the recent compliance deadline by 2017 and another, which looms at 2019.

These types of government-driven industry-wide policies are helping to drive efficiencies in the simplest of ways - for both organisations and drivers. Samsung reports that the industry spends approximately 51 million hours annually reviewing and inputing data that will now be performed electronically. It's a huge shift. Add to that the 110 hours each year individual drivers previously spent keeping a logbook, and industry efficiencies are very clear.

Looking to the future, truck telematics systems could evolve to be even smarter. One way fleet managers are hoping to apply the technology is though contextual utilisation. This application means that vehicles would be serviced only when necessary (indicated from data), rather than in a scheduled service. This is another way fleets can reduce costs.

FREIGHT VISION: ACCIDENT FREE, STRESS FREE AND EMISSIONS FREE

German engineering and technology giant, Bosch, presented its vision for the future of freight at the 67th International Motor Show (IAA - Internationale Automobil-Ausstellung) Commercial Vehicles in Hannover last year.

According to Bosch, tomorrow's freight traffic will be accident-free, stress-free, and emissions-free. The technology supplier launched a range of products and services including cloud-based connectivity platform that connects fleets of vehicles for predictive diagnostics and even over-the-air software updates.

For Bosch, connectivity means new efficiency for transport systems – with an aim of reducing congestion on the roads, an added benefit for logistics companies. Bosch claims that it can contribute two-fold technical expertise; its broad knowledge of the commercial-vehicle domain and its IoT expertise.

"Bosch enables digitally connected logistics solutions, from freeway to front door," says Dr. Markus Heyn, member of the Robert Bosch GmbH board of management responsible for the commercial-vehicle business.

As most new trucks in the US and Europe are now connected to the internet, Bosch supplies truck manufacturers with telematics platforms that make things such as software updates or predictive diagnostics possible, which also opens up new business in connected services.

Now fleet manager and logistics companies are using the relevant sensor systems to monitor the condition of especially critical deliveries of goods, including vital goods such as blood plasma – around the clock.

Every year, 40,000 high-value truck loads are monitored in transit. Bosch is also using the IoT to automate delivery tracking: sensors on goods and containers transfer information about position, temperature, and vibration to the cloud computing. Initial experience and data results in the field shows that these real-time logistics solutions helps dispatchers to cut their search and inventory effort by more than half.

Moreover, they increase the availability of reusable containers by as much as 30 percent. Bosch wants connectivity to make road freight altogether more productive and reduce the burden on the road network. "Whether through electrification, automation, or connectivity, Our solutions are helping to ensure that road freight does not come up against the limits to growth," Heyn says.

Bosch's Transport Data Logger, a small box with integrated sensors, monitors the transport of sensitive goods and measures temperature, humidity, tilt, and shock events during transport. This service has the potential to provide immense value for cargo owners. It is connected to a smartphone app that alerts freight managers about breaches to consignments and damaged goods, identifying where in the supply chain responsibility will lie.

HOW TELEMATICS IS AFFECTING OUR DAILY LIVES

Reversing vehicles are one of the main causes of parking lot accidents. Telematics technology can detect when the vehicle is reversing and notify the driver to be extra cautious.

Driver coaching, either through buzzers or even spoken word notifications (such as GO TALK live in-vehicle verbal feedback solution), can make drivers more conscious when they are at the wheel. Immediate alerts can be given to slow down, or to buckle a seat belt.

Drivers can track their personal level of risk and safety with score carding for factors such as speeding, seat belt use, harsh braking, acceleration, and more.

BLOCKCHAIN AT THE CROSSROADS

Blockchain standardisation has the potential to provide significant savings in both time and costs for all connected implementers (refer to **OPPORTUNITY** issue 3). Cargo undergoes 30 'baton' changes from the time it starts its journey until its fully delivered, according to Mark Toohey, Founder and Managing Director of TBSx3, an industrial blockchain technology platform in Australia. Not all the parties involved are created equal, some have great security and some have poor, Toohey explained. They can only do a good job when they have products in their custody, he continued.

Blockchain is a relatively new technology; it's only been in existence for a decade, but it's continued use and evolution will change the cargo industry entirely. A few companies, including Maersk, Walmart and IBM have made the leap to establish blockchain technology in their supply chains. However, there has yet to be a global blockchain initiative implemented or standards established.

In 2016, a technical committee on blockchain and electronic distributed ledger technologies was established. The International Organization for Standardization Technical Committee 307(ISO TC 307) focuses on blockchain and electronic distributed ledger technologies and application, interoperability and data exchange, according to NTT Technical Review. Several countries in different regions are participating in the technical committee.

There is significant work currently taking place in establishing blockchain standardisation, especially within the ISO TC 307 according to Dr. Jed Horner, Policy Manager at Standards Australia. "Australia made the case of this committee initially in 2016-2017 and it now has 41 participating and 11 observing members. They are working on areas ranging from smart contracts to security – both of which are important considerations in how we design and roll-out blockchain systems," Horner explained. "In a global world, International Standardisation, through bodies like the ISO and International Electrotechnical Commission is critical."

There are several hurdles to jump in order to implement a global blockchain initiative. "Functionally, there isn't really a primary application solely relying on blockchain and proving its broad value to an ecosystem, you need a chain of partners to take advantage of a blockchain," according to Kris Kosmala, Director of Smart Port Digital Services at Royal HaskoningDHV.

One of the major hurdles will be the cost of upgrading technology. "Blockchain demands computing power available only with the most modern hardware. The majority of companies still use older, less capable, infrastructure and are concerned about the cost of massive upgrades required to deploy blockchain at scale," Kosmala continued.

At the most basic of levels, blockchain is essentially a different way to store data and it's one pool of data that everyone can trust, Toohey explained. The handoff from one party to another requires that guarantee that neither the cargo nor the paperwork have been manipulated. In order to ensure that, increases in blockchain digitisation need to occur. "Companies need to build enterprise applications that stretch across their entire supply chain and that means that all partners also need to upgrade their infrastructure and develop their own enterprise applications integrating blockchain

"Functionally, there isn't really a primary application solely relying on blockchain and proving its broad value to an ecosystem, you need a chain of partners to take advantage of a blockchain"

technology into their own internal transactions," Kosmala explained. Considering every element of the shipping industry needs to be a part of the blockchain platform including agents, shippers, carriers, cargo handlers, import and export cargo transfer approval authorities, banks, insurers and reinsurers, etc, interoperability is crucial for blockchain technology to be successful. From the work ISO TC 307 is currently doing, countries then need to develop their own standards from which to comply with their own laws and regulations, Kosmala said.

"There is no deadline for countries to complete their work, so anybody trying to implement blockchain follows their own 'standards' and creates their own forks in blockchain code," Kosmala added.

Standards will take some time, Toohey said, but best practices will get adopted and become an industry standard.

Talk and use of blockchain technology is becoming more widespread, but of course there is a long road for the technology to reach a level of standardisation. At this point, significant discussion and baseline work has gone into developing terminology so that a common language is spoken in the development of technology, Horner said.

"The other area of marked progress is in smart contracts, where mapping of global trends in this area, and what smart contracts are, and should be, has taken place. This will likely lead to a technical specification that should be applicable across a range of platforms.

Finally, in the security sphere, and building on existing work in information security standards, which have global uptake, specific security considerations in blockchain and distributed ledger technology are being identified, with a view to providing guidance for the global community," Horner continued. Technology is a frequent topic of discussion at conferences and are no longer a theory but an item on agendas, Toohey said.

"Generally, the industry of shipping is sceptical of novelties, but if the technology shows that it can reduce the cost of doing business, eliminate errors associated with paperwork accompanying cargo movements and become progressively cheaper to operate, then adopters will follow," Kosmala said.

HUTCHISON PORTS JOINS BLOCKCHAIN CONSORTIUM

Hutchison Ports has joined eight leading ocean carriers and terminal operators and signed a formal statement of intent for a Memorandum of Understanding to form a consortium to develop the Global Shipping Business Network on November 2018, an open digital platform based on distributed ledger technology.

The participants include ocean carriers CMA CGM, COSCO SHIPPING Lines, Evergreen Marine, OOCL and Yang Ming; terminal operators DP World, Hutchison Ports, PSA International and Shanghai International Port; and software solutions provider CargoSmart.

The new platform will establish a digital baseline that aims to connect all stakeholders, including carriers, terminal operators, customs agencies, shippers, and logistics service providers to enable collaborative innovation and digital transformation in the supply chain.

Still in its early stages, industry groups are looking to establish a global standard, but there are different bodies working independently to define a universally accepted model. There may be a situation whereby there are multiple standards set, and systems that need to 'talk' to each other; for example banking blockchain will need to communicate with the logistics blockchain. How will the respective industries bridge that gap?

Hutchison Ports is working with all of the major technology and community groups in order to discuss and participate in defining the global blockchain standard. It will be a long road, but the projects are underway and the rewards will be substantial.

WAREHOUSES OF THE FUTURE HAVE ARRIVED

Artificial Intelligence (AI) and robots have the potential to save a company and the shipping industry a significant percentage in overall costs and time when used in warehouse management. Supply Chain 4.0, which is the Internet of Things (IoT), advanced robotics, analytics, and big data, can potentially lower operational costs by 30 percent, reducing lost sales by 75 percent and decreasing inventories by up to 75 percent as well, according to a recent McKinsey report.

POTENTIALLY LOWER OPERATIONAL COSTS BY
↓30%

REDUCING LOST SALES BY
↓75%

DECREASING INVENTORIES BY UP TO
↓75%

Robots are ideal for performing repetitive, high-volume production activities and as technology advances, automating tasks will become less costly and less complex and the companies currently using robots will acquire more, according to the McKinsey report.

Modern manufacturing is seeing an increasing number of robots and AI used in warehouses. Previously prohibitive costs of these technologies are decreasing, making them more cost-effective, or at least certain tasks of human employees. Several factors are making robots and AI more of a reality for many industries and warehouses. According to a McKinsey report, over the past thirty years the price of robots has fallen by half in real terms and even further still when labour costs are considered.

Additionally, the skilled professional workforce has increasingly grown who can design, install, operate and maintain AI and robots to their production cycle, according to the McKinsey report. These skills are now much more widely available in schools and software is catching up with the demand for more automated systems. Also, new generations of robots have the ability to absorb information from multiple sources and adapt in real time.

Robots are ideal for performing repetitive, high-volume production activities and as technology advances, automating tasks will become less costly and less complex and the companies currently using robots will acquire more, according to the McKinsey report. Additionally, the report mentioned, robots will increase technical and economic viability. The technical feasibility of automating the physical activities or operation of machinery in a predictable environment currently performed by human employees in the United States workplaces is at 78 percent, according to a McKinsey study.

There are several warehouse management technology advancements currently in use and several on the horizon. Deb Ellis, Senior Partner at Gattorna Alignment in Australia references myriad developments in the automation of supply chain management. "There are different ends of the spectrum in terms of the use of AI including highly automated warehouses such as Ocado's 'hive' warehouse [an online-only grocery store with highly automated warehouses in the United Kingdom (UK)]." At a more basic level there are also robotic aids, such as picking buddies that follow a human picker around and issue instructions and carry equipment, Ellis added.

Upgrading warehouse management processes is a shift worldwide, with several companies upping their technology game. In order to meet the demands of significant e-commerce growth among its customers, DHL will also be upgrading technology in 350 of its 430 facilities and transportation control towers in North America, according to a company press release. The investment will accelerate the implementation of technologies including robotics, augmented reality, robotics process automation, IoT and its proprietary end-to-end visibility solution MySupplyChain, according to their press release.

In Japan, Hitachi has developed the Racrew, an automated guided vehicle that travels autonomously in warehouses in accordance with instructions to position itself under a shelf where parts and products are stored, lift it out, and then transport it to a designated location.

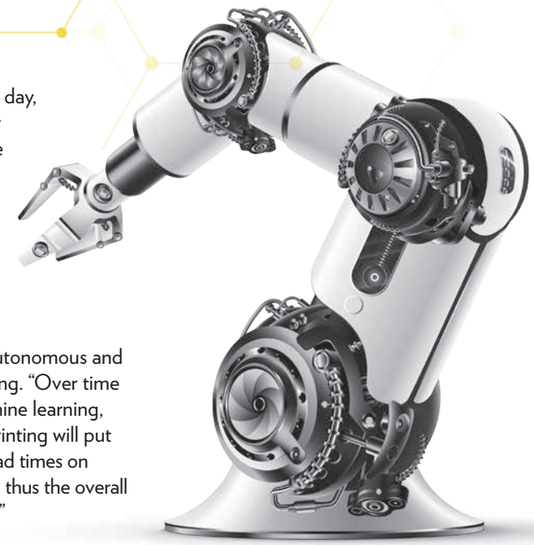
The system has been installed in a distribution centre in eastern Japan, where Racrew functionality includes the ability to improve transport efficiency by performing analysis and simulations based on data analytics know-how so as to select less-congested transport routes.

Ocado's 'hive', to which Ellis referenced, is a hive-grid-machine run by robots. The hive has over 45,000 products and the capacity to process 3.5 million items or around 65,000 orders per week, according to UK publication *The Engineer*. Humans still work in the facility too, bagging and packing the items delivered by robotics for mailing and distribution. Ocado is also selling the hive technology to other supermarkets, as reported by *Forbes*.

The Kasama Distribution Center has succeeded in reducing the walking distance of workers to nearly zero by having Racrew robots bring the shelves that contain products right to workers, who then can carry out the picking of products without ever having to move themselves.

At present, 154 Racrew robots travel about 1,300 kilometres a day, significantly improving the efficiency of picking operations by doubling productivity. The use of robots is contributing to the establishment of efficient delivery systems that feature such advantages as reduced time from the receipt of orders to shipping.

Predictive analytics is another boon to the automated warehouse and enables demand forecast accuracy to reduce forecasting errors by 30-50 percent, McKinsey reported. The report also mentioned there will be a significant increase of autonomous and smart vehicles in the supply chain management and 3D printing. "Over time we expect better forecasting via improved analytics and machine learning, small order sizes, and local-for-local manufacturing and 3D printing will put downward pressure on inventory," Ellis explained. "But short lead times on e-commerce will increase the number of stocking locations and thus the overall level in those industries. It's not clear what the net effect will be."



TOP FIVE PREDICTIONS FOR FUTURE OF WAREHOUSING

1 Robotics and cognitive computing

Process automation will allow for the use of physical robots to take on manual tasks, but also through robotic software applications and cognitive computing services, such as AI and machine learning.

Two technologies will combine: robotic process automation (RPA) — involving small, repeatable software programmes or bots — and cognitive computing.

This will make a huge difference when it comes to data, by enabling labour to focus on truly mission-critical activities. When RPA is combined with cognitive analysis, it gives programmes the ability to act like humans by making business decisions on the fly.

2 Predictive maintenance

Warehouses around the world are adopting proactive maintenance processes so that costly and time-consuming equipment failures are less likely to happen. And, of course, the same processes can be used to protect perishable stock.

3 Warehousing on demand

Everyone is familiar with how sharing-economy platforms and apps, such as Uber, Airbnb, and Laundrapp, have disrupted centuries-old sectors, such as personal transport, accommodation and cleaning. But what few people realise is that the model is now being applied to industrial warehousing.

Startups such as Flexe in the United States and Stowga in the United Kingdom have created apps and cloud platforms that transform both the buy and sell sides of the market. They're allowing warehouse owners to lease out spare capacity, and clients to rent it on demand over timescales that range from days to months.

Meanwhile on the sell side of the equation, organisations no longer need to carry vast amounts of unused capacity that costs them money, especially when the economy is unpredictable. With these new on-demand platforms, unused space becomes a commercial asset.

4 3D printing and robots

In the future, the distinctions between factory floor and warehouse may begin to disappear. Once some factories move away from monolithic, mass-production and distribution cycles and into fabrication on demand, the implications could be transformative.

For example, some warehouses may become smaller, smarter, and more closely integrated with manufacturing, even as others follow the Alibaba model by becoming larger and more automated.

Technologies such as programmable cobots – robots that work alongside human beings – will be increasingly important in these cases, following the smartphone model by becoming programmable platforms for a range of process- or industry-specific apps.

3D printing will be another ingredient in the mix. Most organisations are familiar with the concept of using this emergent technology for small, specialised projects. However, some Industry 4.0 analysts believe that 3D printing will become an increasingly important tool on a larger scale.

5 IoT Standards and regulations

Today's smart warehouses are increasingly rolling out transformation strategies that deploy sensors connected to the IoT – so that robots, workers, managers, and even smart vehicles, know the location of every item and can track them on their journeys.

Source: Internet of Business

SEA-AIR CARGO HITTING THE SWEET SPOT FOR SHIPPERS

More shippers are turning to sea-air cargo services to circumnavigate poor ocean reliability and high airfreight rates during peak season.

According to Oliver Bursch, vice president of sea-air specialist SAT Albatros Group, the main gateway for East-West services is Dubai.

"All our business is related to the traditional Asia to Europe and Americas trade lanes," he explained. "Our major movements are traditionally via Dubai as it still gives the biggest advantage to customers in terms of cost savings and CO_2 reduction compared with all-air, and speed advantage compared with all-water."

Typically shipments from Asia are transported by sea freight to Dubai, where they are trans-loaded within 8-12 hours from containers to airfreight pallets. The sea-air combination provides 30 percent cost savings compared with all-air routes, and 50 percent time savings compared with all-water, according to SAT Albatros.

"Generally, combined transports make sense in trade lanes that are unbalanced with unequal import and export volumes, and there is a suitable transshipment point in-between," added Bursch.

"SEA-AIR IS NOT ONLY PROVIDING ECONOMIC ADVANTAGES, BUT IT IS SOMETIMES THE ONLY VIABLE SOLUTION TO TRANSPORT GOODS"

He said shippers who use the service tend to be from the textiles, garments, electronics and consumer goods industries. The cargo shipped is normally lower value, but with strict specifications on arrival times - neither too early, nor too late. Other companies are simply being sensitive to their carbon footprints, Bursch noted.

Comparing sea-air to alternative shipping options, he said the biggest competitor has been the proliferation of low-priced airfreight - known as deferred airfreight - which caused sea-air volumes to drop by as much as 50 percent compared with 10 years prior. At the time, increased uplift of direct airfreight led to much lower rates.

"Still, sea-air is needed as a backup for congested periods and for customers that follow a clear just-in-time supply chain strategy. For example, in 2017 there was a huge lack of air capacity (due to a surge in demand for air cargo), which helped to bring back interest in alternative shipping modes. As a result, sea-air is not only providing economic advantages, but it is sometimes the only viable solution to transport goods," said Bursch.

Indeed, the unusually high demand for airfreight in 2017 left many shippers and forwarders scrambling for capacity out of Asia. Bursch explained that this is where the sea-air cost advantage can really come into play, as savings can quickly reach 50 percent during peak season when demand - and freight rates - skyrocket.

He added: "The 2017 difficulties brought sea-air back to the attention of many shippers as they realised that they need this option in difficult times. We now see growing volumes with double-digit growth rates."

There are other drivers pushing demand for sea-air cargo, too. For example, according to SeaIntelligence Consulting, ocean carrier schedule reliability is at near-record low levels, an eight-month period in 2018, was six-year low point in terms of industry-wide schedule reliability . Furthermore, with the IMO 2020 sulphur fuel cap deadline looming, many industry analysts expect slow-steaming to continue as carriers look to mitigate some of the added fuel costs.

Chris Locher, managing director at Canada-based freight forwarder Locher Evers International, agreed that the decline in all-water service reliability has played a role in the resurgent interest in sea-air.

There are many factors impacting demand, Locher said, such as price and uplift capacity of direct airfreight from Asia to Europe; ocean freight congestion and delays; price and reliability of ocean freight; and price and currency valuation of airfreight.

"We find it's all about supply and demand and if a service is out of its equilibrium - whether it is the direct airfreight market, the all-water market, or a bit of both" he told OPPORTUNITY.

He said sea-air cargo tends to be mid-value to high-value items including auto parts, textiles, and electronic components, where there are significant inventory costs to be considered during a 35-40-day all-water transit time.

"Some fashion items use sea-air to economically get to market just-in-time for a trend or season," Locher added.

"We also see regular ocean cargo that misses cut-offs and faces late penalties. In these cases, expensive penalties can be avoided as enough time can be made up using sea-air to beat a deadline that has now been missed. A distraught shipper can 'get that lost week back' and erase that shipping delay or carrier roll-over, using sea-air in most instances."

Sea-air also has geographical advantages over all-water, noted Locher, since many of the final destinations in Europe are inland and closer to airports than seaports.

"This is especially important when providing components for factories in Eastern Europe. Frankfurt, Prague, Vienna, Munich, and Paris are often much closer to the factories and final distribution centres than the seaports.

Moreover, airlines tend to equalise many airports so we can often secure equal pricing for many hubs with one airline. This allows us to get the cargo closer to the final destination with very little additional cost."

While Europe-bound cargo originating in Southeast Asia tends to be routed through Dubai, North Asia cargo from Japan, Korea, North China and Taiwan is often sent to Vancouver - a well-established sea-air hub in its own right, Locher noted.

"Vancouver's advantages are fast sea-transits for most origins in Far East and unencumbering customs procedures for in-bound cargo. Moreover, there is generous uplift capacity for airlines - Vancouver to Europe is only 9-10 hours which allows for sizeable uplift capacity for today's wide body aircraft.

There is also some demand for sea-air from Asia to South American destinations via Vancouver, Locher said, but the bulk of the volume is destined for continental Europe.

"In the busy summer travel season the capacity increases dramatically, adding an additional 40 flights per week to Europe, which also leads to even more competitive pricing."

Vancouver's advantages as a sea-air hub extend to the national currency, too. For example, Locher said that with airfreight usually priced in the currency of the originating airport, Vancouver sea-air is priced in Canadian Dollars, which is "only 75 cents US, and that provides a real cost advantage for 'our' routing."

SEA AIR CARGO BENEFITS

30%
Cost Savings
Compared to Airfreight

75%
Time Savings
Compared to Seafreight

98%
On-time performance

45%
CO_2 Emissions Reduction

Source: SAT Alabatros

Due to a combination of significant unplanned volumes of airfreight and the seasonal peaks of these volumes, a large apparel retailer was consistently challenged with insufficient air capacity to ship their product. This was especially true from many of the "non-hub" countries from which some product was shipped from. These countries had limited air freighter service if any at all. As a result, in addition to confronting capacity challenges, they often had to pay a higher premium rate in order to ensure the timely shipment of their product.

Solution

The majority of the customer's airfreight was unplanned. This meant that the product had originally been planned to ship via ocean, but in some cases either production would run late or there would be unexpected demand for some product lines, resulting in a need to then expedite the shipment via air transportation.

In the case of "late" shipments, however, shipping via air would often result in the product now arriving well ahead of schedule.

The sea-air programme allowed for the repositioning of cargo to a major air hub within the region via ocean transportation and then take advantage of the greater lift and capacity available to convert the shipment to air transportation.

Result

This programme allowed for the repositioning of over 1.5 million kgs of the customer's airfreight to sea-air. Aside from having saved an average of 15 percent in transportation costs for these shipments, the customer was also able to alleviate the additional capacity strains this volume would have represented.

Source: Expeditors

NEW DEEP-SEA STOCKHOLM TERMINAL TO OPEN IN 2020

Ahead of the opening of Hutchison Ports new container terminal in Stockholm next year, the latest container volumes for the Port of Stockholm increased by 25 percent in the first quarter of 2019, when compared to the same period in 2018.

Nicklas Ebersson, cargo marketing manager at Ports of Stockholm, said: "The Stockholm region is growing, a fact that is clearly reflected by our import volumes."

He added: "With our new freight port we will have good facilities to be able to cope with the rapid rise in volumes and to develop services within the container segment, together with Hutchison Ports."

Hutchison Ports is to commission the first phase of its new deep-sea container terminal in Stockholm in May next year. The facility will be the only port on the Swedish east coast with a draft of 16.5 metres, deep enough for Ultra Large Container Ships (ULCS).

Close to the growing Stockholm region, where more than 45 percent of Sweden's GDP is earned, the terminal will provide convenient access to importers and exporters via new road and rail infrastructure.

The current Container Terminal Frihamnen is situated inside the city limits of Stockholm and does not have the facilities to handle the largest vessels. The city government is also planning to redevelop the city waterfront site for residential purposes.

Artist impression of Hutchison Ports Stockholm

UPON COMPLETION OF PHASE 1 & 2 :

PHASE 1 PHASE 2

25 ▶ 32ha
Terminal Area (Hectare)

450m ▶ 800m
Quay Length (Metre)

16.5m ▶ 16.5m
Depth Alongside (Metre)

250k ▶ 500k
Terminal Capacity (TEU)

Hutchison Ports Stockholm will be part of a new port area called Stockholm Norvik Port, developed by the local port authority, Ports of Stockholm. The 44-hectare greenfield site will also feature a ro-ro terminal and a logistics park.

All container operations will migrate to the new terminal from the old city site, shortly after the new terminal is operational.

As most of the major cargo flows originate in Stockholm, Hutchison Ports is looking to attract carriers to make direct calls, saving time and cost for shippers who currently have to send cargo to Gothenburg for international shipments.

"It is our ambition to have more ships sail directly to Stockholm and unload their cargo there. To that end, we will also actively seek export cargo for Hutchison Ports Stockholm. The more successful we are at this, the lower the costs will be for the shipping lines and the more import cargo they will bring," said Lawrence Yam, CEO of Hutchison Ports Sweden.

New markets for the new terminal also include the growing short-sea transport routes connecting Sweden to Poland, the Baltic States, Russia and Finland. Currently most of this cargo is moved on the road by truck. However, a shortage of truck drivers in Sweden and the environmental benefits of reducing the number of truck moves means that ro-ro traffic is on the rise.

In phase one of the Hutchison Ports Stockholm development, the new terminal will have a handling capacity of 250,000 TEU, the 450 metre long quay will have remote control ship-to-shore gantry cranes with a reach of 22 containers wide. Containers will be transported across the terminal yard by straddle carriers. To ensure a smooth access to the Swedish hinterland, a railway track is connected directly to the new terminal. All the equipment is state-of-the-art with a low CO_2 footprint.

In phase two of the terminal development, container handling capacity will increase to 500,000 TEU and the alongside depth will be the same as phase one. The quay length will be extended to 800 metres which will allow between two and three vessels to berth at the same time.

Figure 1

Better location allows better connectivity to ports at the Baltic region.

Figure 2

Intermodal connections easily accessible to other parts of Sweden.

PARIS API - THE NEXT GENERATION IN TRANSPORT PLANNING AND OPTIMISATION

The API space is evolving more rapidly than ever before. Like 'big data' and 'cloud' did before them, APIs are enjoying mass exposure and appeal to individuals and companies alike.

API stands for Application Programming Interface. It's a piece of programming that enables two applications not specifically designed to work together to seamlessly interact and exchange information. In other words, the API is the 'missing link' that enables information to flow smoothly between systems. Using APIs creates powerful applications, allowing businesses to develop new innovative solutions, with more efficient and automated processes.

PARIS Optimal Transport Planning is a division of Hutchison Ports with extensive experience delivering multi-modal optimisation applications for its clients which include some of the world's largest ocean carriers. The market leading PARIS software (parisoptimalplanning.com) is an enterprise solution for optimising and executing full load transport via truck, rail and barge.

This division has now launched the PARIS API, making the intelligent planning optimisation of PARIS available in the cloud to anyone and can be connected via an API to any Transport Management System (TMS).

Andy Barker, General Manager of PARIS, explains, "Subscribers to PARIS API can upload their transport orders automatically via the API or by file. Using our proven software, the optimised transport plan is established in seconds, it can then be viewed or modified online and downloaded via the API or online via Excel."

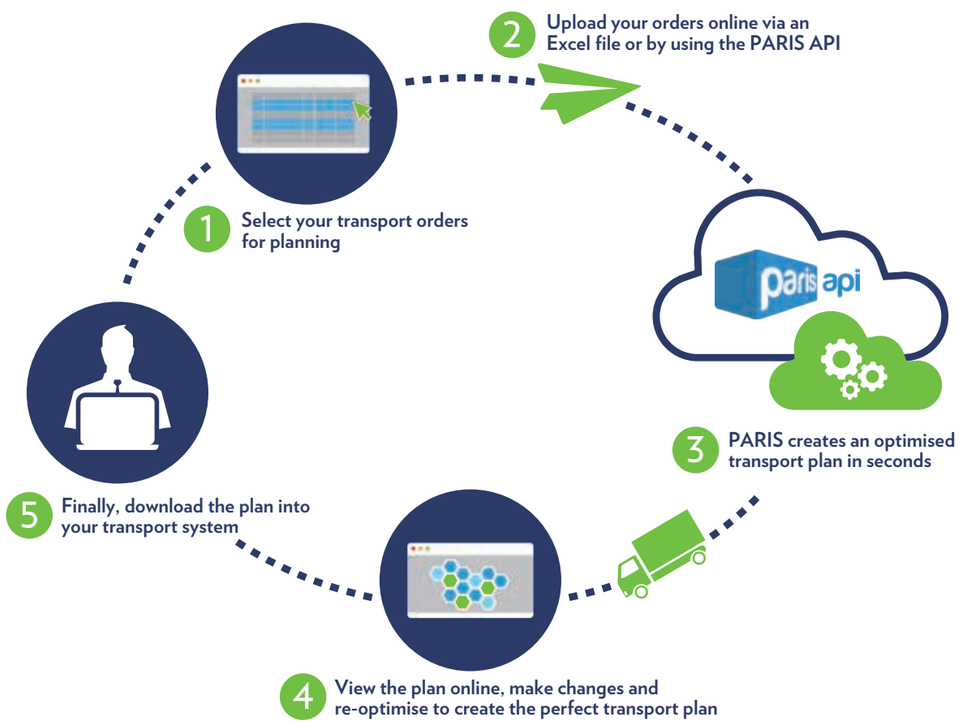
The unrivalled optimisation and comprehensive features in PARIS API offer customers a competitive edge for regional transport planning. It is a highly configurable software solution that has very advanced algorithms and parallel processing to provide optimised transport planning in real-time.

Barker continues, "The biggest savings in full load planning nearly always come from creating more triangulations; they are called street turn in the United States, backloads in Europe and in the UK they are called tip and reloads – but they are same thing. The reason is simple, humans find it quite complex to try and plan them especially when you have more and more loads to plan each day. The PARIS API continuously finds all the triangulations."

Many companies plan hundreds of trucks from multiple depots making thousands of collections and deliveries across a network every day, planning these operations is complex and time consuming.

"Manual planning takes many hours and always results in a sub-optimal plan. Adding the PARIS API simplifies and automates this process, delivering significant real-world cost savings for its users. Early adopters are already beginning to benefit from more efficient and cost-effective transport plans in several locations." Barker added.

HOW IT WORKS



TRY IT YOURSELF TO SEE THE PERFORMANCE

Upload your transport orders via the cloud-based API or online via file, moments later your optimised transport plan will be presented to you. With the PARIS API the initial planning and re-working of the plan is completed in seconds.

https://api.parisoptimalplanning.com/#try-it-yourself

The full PARIS enterprise system remains for large scale customers but the cloud-based PARIS API provides greater flexibility and makes the PARIS optimiser available to a greater number of users.

The PARIS API is a step change in full-load transport optimisation and creates some unique benefits:

- Globally accessible to users
- Easy and quick set-up to plan new regions
- Open up business opportunities for companies to share resources and create synergy
- Cloud based so integration and deployment costs are significantly cheaper
- Combined with existing TMS creates the killer planning application

THE HONG KONG SEAPORT ALLIANCE HERALDS NEW ERA FOR OPPORTUNITY AND GROWTH

The Hong Kong Seaport Alliance (The Seaport Alliance) is a contractual agreement between Hongkong International Terminals Limited (HIT), COSCO-HIT Terminals (Hong Kong) Limited (COSCO-HIT), Asia Container Terminals Limited (ACT) and Modern Terminals Limited (MTL) to collaborate on operations at Kwai Tsing to improve the value proposition of the combined facilities in the context of growing regional competition, maximise efficiencies, optimise utilisation and cost synergies and to reduce environmental impact. The operators will cooperate on operational aspects and make their activities in Kwai Tsing terminal-neutral. The forming of the Seaport Alliance is a forward-looking and decisive response to the complex challenges faced by the Port of Hong Kong.

With growing regional competition and a fast-changing global shipping industry, the Seaport Alliance will enable members to deploy the facilities and resources in a more cost-effective and efficient way. The berths will be operated under a single terminal operating system and a single customer-terminal interface platform.

The Seaport Alliance firmly believes that the co-operative endeavour will deliver sustainable benefits to terminal operators, shipping lines, shippers, related businesses, industry workers, and Hong Kong as a whole. The Seaport Alliance aims to commence joint operations progressively from 2019 and is estimated to complete in approximately 18 months.

The success of notable container terminal collaborations overseas has inspired Hong Kong terminal operators to work together. For instance, the operations of Ningbo, Zhoushan and nearby ports came under a common platform in 2015, bringing synergies to the ports in Zhejiang.

Similarly, the Seattle and Tacoma ports formed the Northwest Seaport Alliance in 2014, which has since offered better rates and services to customers. By rethinking the traditional operating model of container terminals in Hong Kong, the Seaport Alliance will ensure that the Port of Hong Kong stays vibrant and continues to be a reliable transshipment hub in the region, as well as a key gateway to China.

Furthermore, efficiency gains will be reaped from the enhanced flexibility to berthing locations, more nimble yard planning, improved turnaround time of vessels, and fewer inter-terminal trucking trips. The cost synergies achieved will enable all parties involved to be more competitive against other ports in the region.

In meeting the maritime industry challenges of the day, opportunities have emerged for Hong Kong to find strength in imagination, enterprise and versatility. The Seaport Alliance is a resolute and strategic answer to the demands of a new era.

BENEFITS OF THE SEAPORT ALLIANCE COLLABORATION

Gerry Yim, Managing Director of Hongkong International Terminals Limited, said, "The formation of the Hong Kong Seaport Alliance will further enhance efficiencies, increase utilisation and improve our overall service offering to customers. It will ensure that the Port of Hong Kong remains a valuable contributor to our economy, both as an employer and as a facilitator of global trade."

Lawrence Shum, Managing Director of COSCO-HIT Terminals (Hong Kong) Limited, said, "The maritime and port industry significantly drives trade and logistics business which are one of the four economic pillars of Hong Kong. We will work together to enhance the position of Hong Kong as an international shipping centre."

Hanliang Zhu, Managing Director of Asia Container Terminals Limited said, "With the many advantages generated by the Hong Kong Seaport Alliance, we are confident that our terminals can attract more mega vessels to make Hong Kong their port of call. Indeed, the fact that COSCO SHIPPING PISCES, which is the world's largest container vessel of its class, called at Hong Kong on her recent maiden voyage bodes well for the vibrant development of the Alliance."

Peter Levesque, Group Managing Director of Modern Terminals Limited, said, "The Alliance will improve the value proposition of Hong Kong port to customers, while reducing emissions and enabling Hong Kong to more effectively compete within the region."

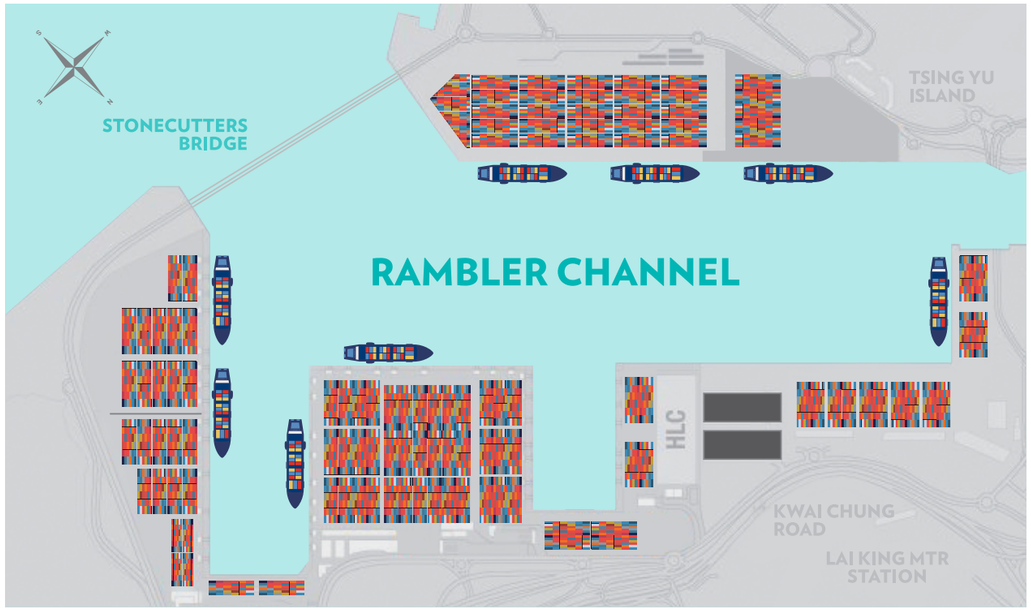


Figure 3. For illustration purpose only.

PARTNERSHIP WITH

13

SHIPPING LINES

MORE TERMINAL CAPACITY

40%

HIGHER CAPACITY TO 2.1 MILLION TEU UPON COMPLETION

BETTER HIGHWAY AND RAIL NETWORK CONNECTIVITY

15.5

METRES WATER DEPTH TO ACCOMMODATE MEGA-VESSELS

OUR NEW TERMINAL IN THE PORT OF VERACRUZ IS **COMING SOON**

Hutchison Ports has been investing in Mexico since 1995, building a diversified network of terminals and transport facilities and today handles some 40 percent of the nation's maritime trade. **We are looking forward to the new state-of-the-art container terminal in the Port of Veracruz to commence operations this year.**

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