PORTS AT 50: PAST AND FUTURE

AS Watson's Digital Transformation **1 4**

100 Buddhas **2 0**

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"CK Hutchison … creates and adopts new technology with zeal."

WELCOME

TECHNOLOGY FOR THE SOUL

CK Hutchison is at the forefront of the relentless march of technology. In the modern business world, to fall behind is to die. To just barely keep up is to stagnate. To lead in business, you have to lead in technology *now*!

CKHH Group companies excel in creating and integrating new technology to constantly reinvent businesses. AS Watson Group (ASW) is the preferred partner for many global brands to deploy new tech using innovative strategies. From perennial cosmetic giant L'Oréal to new superstars of the YouTube age like Jeffree Star Cosmetics, they want access to ASW's deep knowledge of, and connection through creative technology to, five billion shoppers.

Hutchison Ports has been innovating since the start. Its Terminal Operating Software, nGen, is the global leader and provides a huge competitive edge. From Felixstowe and Oman to Karachi and Hong Kong, it has led the industry adoption of new automation, payment solutions and other technologies, and this process is accelerating.

But the crucial point to remember is that the adoption of this technology improves people's lives. Augmented reality (AR) make-up technology connected to social media reduces the risk of allergen interactions and puts smiles on the faces of millions through sharing. Introducing automation in ports can improve the health and working conditions of dock workers. These are just two tiny examples of how the new technology is improving lives.

Beyond the benefits from technology, people also yearn for peace in a hectic world. Ancient Buddhist wisdom shows a way to fulfil that part of our lives and its deep history is on display at the new Tsz Shan Monastery Buddhist Art Museum in Hong Kong. There, you can step away from modern life and into a historical contemplation of a faith that has brought serenity to billions over the millennia.

CK Hutchison is a thoroughly modern business that creates and adopts new technology with zeal. But we know that the technology is there to help people to connect, to heal their souls and bodies, and to improve their lives. Take a peaceful moment to contemplate that simple truth. □

CONTENTS

PORTS TRANSFORMATION, PAST AND FUTURE

The 50-year history of Hutchison Ports saw it innovate to grow from a ship-repairer in Hong Kong into the world's leading port investor, developer and operator. Next, the ports group has a SMART plan to deliver a tech-driven future that keeps the business momentum going.

NEWS

New companies formed

CK Hutchison Telecom is the new short name for the consolidated operations of **3** Group Europe and Hutchison Telecom Hong Kong Holdings. More formally known as CK Hutchison Group Telecom Holdings, it will also hold the Group's 28,500 European tower asset interests via a new telecom infrastructure company, CK Hutchison Network Holdings. The new structure provides a diversified telecom asset platform across eight geographical locations, and is expected to achieve a robust credit profile and operational efficiency through centralised management processes and commercial functions.

CONVENTION CENTRE CHOOSES 3 HONG KONG FOR 5G

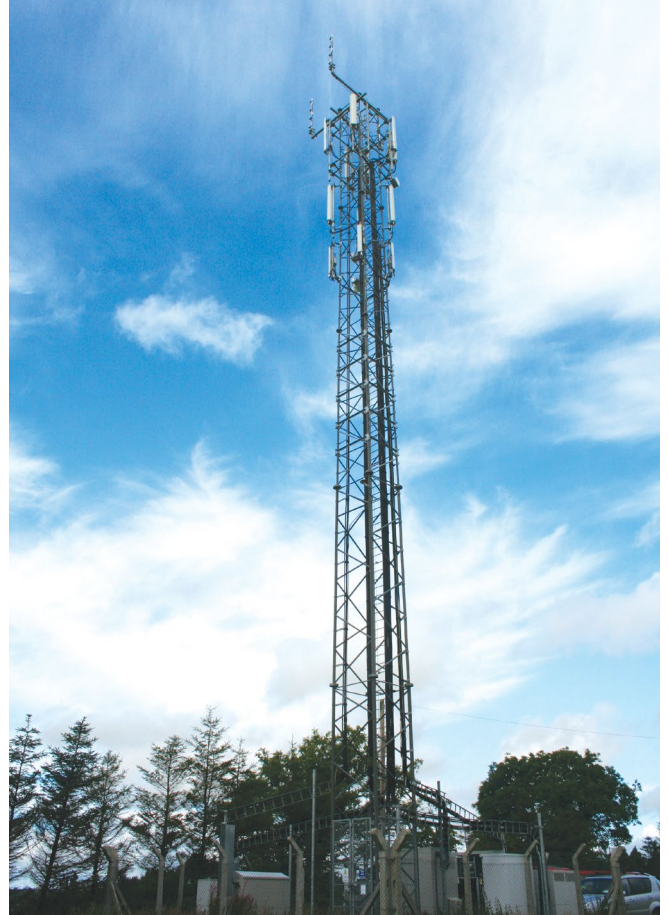The Hong Kong Convention and Exhibition Centre is a Hong Kong landmark hosting millions of visitors every year. It has trusted **3** Hong Kong with its internal integrated 5G roll-out plan.

WIND TRE AND FASTWEB POWER UP 5G IN ITALY

Wind Tre and Fastweb have made a strategic agreement to deploy a 5G service nationwide across Italy, which will cover 90% of the population by 2026. Wind Tre will provide roaming services to Fastweb to extend Fastweb's mobile coverage, while Fastweb will boost Wind Tre's ultra-broadband connectivity.

5G MOVES BEYOND PROMISES TO AUSTRIAN REALITY

Austria's first comprehensive 5G network has been set up in Linz with 20 sites enjoying the next-generation telecoms technology. On hand to inaugurate the networks was Upper Austria's governor Thomas Stelzer and Linz's mayor Klaus Luger. Companies are lining up to take advantage of the new possibilities of the super-fast network!
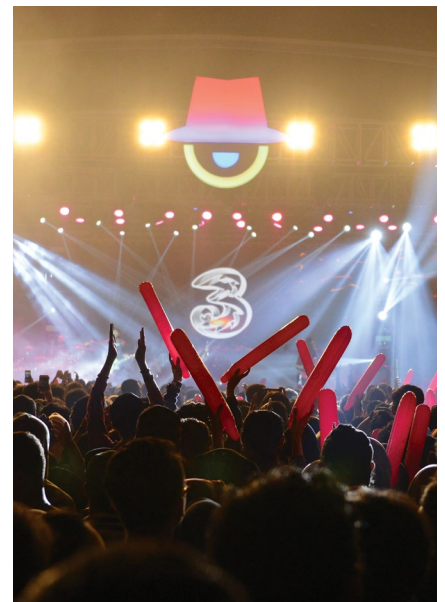
HAPPY BIMA DAY TO THE NATION!

3 Indonesia led a massive, countrywide multiple university programme known as Bima Day, engaging millennials by encouraging them to create, perform and sign up with film, dance music and e-sports. Over 12,000 people across 25 universities participated in nationwide e-sports competitions, a national digital creativity competition, Instagrammable art compositions, original dance music compositions and short movies. Happy Bima Day!

15,000 AND 500 for the win!

AS Watson Group (ASW) opened its 15,000th store globally in Malaysia's capital, Kuala Lumpur. The Central i-City mall location was also the 500th Watsons store in Malaysia! Much of the retail group's latest technology (see story in this issue) was on display in the store, which is a G8, or 8th Generation, ASW store – right at the bleeding edge of retail technology.

BRAVO TRIO

Tencent and Yonghui are new partners to PARKnSHOP, working together to open a new retail concept in Guangzhou, China. The new PARKnSHOP–Yonghui Bravo opened in June with over 10,000 unique products.

MANY COUNTRIES, MANY BRANDS, ONE PASS

ASW is revolutionising the loyalty programme space by providing a single unified plan for 90 million loyalty members of Watsons. The Watsons One Pass will allow members from Hong Kong, Mainland China, Macau, Taiwan, Indonesia, Malaysia, Singapore and Thailand to use just one card or app account to claim points at Watsons across all these markets – perfect for travelling members!

"REACHING NEW HEIGHTS!"

For 30 years, Watsons Athletic Club has nurtured the talent and ambition of Hong Kong's outstanding young athletes – over 10,000 of them! It is reaching out to the next generation with a series of events titled "Reaching New Heights!"!

POINTS, MEET CASH

MoneyBack Points collected by ASW loyalty programme customers can now be converted into HSBC RewardCash (acquired through credit card usage) and vice versa. The conversion can be carried out on an app with no transaction fee involved, giving consumers more choice about how to use their loyalty rewards.

GETTING CLEAR ABOUT GOING GREEN

Watsons Water Hong Kong is once again pioneering positive green action by reducing plastic consumption through the introduction of innovative vending machines. The "Green Point Smart Water Bottle Reverse Vending Machine" and "Green Point Smart Water Refilling Machine" will empower recycling and water bottle refilling, respectively. A total of 500 vending machines will be placed across Hong Kong.

NEWS

P O R T S

TERMINAL D OPENS FOR BUSINESS

Hutchison Ports Thailand's Terminal D in Laem Chabang opened earlier this year with luminaries on hand including Dr Pailin Chuchottaworn, Deputy Minister of Transport. This high-tech project will increase Laem Chabang's container capacity by 40% and put Thailand at the cutting-edge of global ports technology.
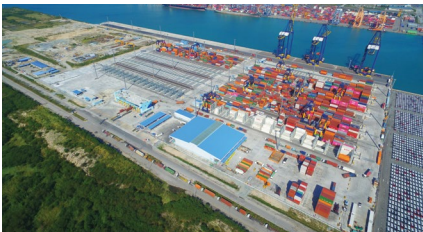
YANTIAN, BIGGER AND BETTER FOR CONTAINER SHIPS

Hutchison Ports Yantian in Shenzhen, China has completed its expansion of berths 4, 5 and 6 and can now accommodate ships up to 6,600 TEUs. On 16 June 2019, Evergreen's ship *Ever Ethic* arrived to inaugurate the expansion.
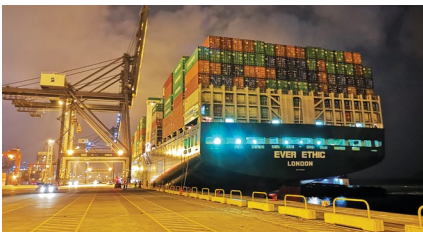
SCHOOL IS IN! THANKS TO HUTCHISON PORTS

The Ensenada International Terminal (EIT)-sponsored school in Ensenada, Mexico was visited by staff from the terminal with support for window replacements, outdoor furniture and school supplies. The students at Juan Escutia Primary School were thrilled with this assistance in helping them continue their studies!

Vive le Québec – avec Hutchison Ports!

Hutchison Ports is joining with the Québec Port Authority and Canadian National Railway to develop a C$775 million new container terminal. Officials commended Hutchison Ports as "a world-class operator, with customer-focused experience which shares our business vision regarding supply chain efficiency, innovation, safety and environmental concern". This is the ports group's first project in Canada.

LEADING SHIP-TO-SHIP TRANSFER

The world's largest ship-to-ship transfer specialist, KA Petra, is collaborating with Hutchison Ports to create the world's largest ship-to-ship hub in Johor Bahru, Malaysia. Dignitaries presiding over the agreement signing ceremony included Yang Amat Berhormat Tun Dr Mahathir bin Mohamad, Prime Minister of Malaysia, and Yang Berhormat Tuan Anthony Loke, Minister of Transport of Malaysia.

O T H E R S

CHI-MED CLEARS A MAJOR MILESTONE FOR NOVEL CANCER DRUG

The China Phase III registration trial of surufatinib, a new drug for fighting non-pancreatic neuroendocrine tumours, met its primary end point one year ahead of schedule. Chi-Med is preparing for the New Drug Application to be submitted in late 2019. Surufatinib treats cancer by cutting off the growth of blood vessels that support the growth of tumours. It also stimulates the body's immune system to go after cancer cells.

ESDLIFE OWNS THE PODIUM

The Digital Solutions Team of ESD*life* took home nine outstanding awards this year at the Mob-ex Awards (two gold, three silver and four bronze). eCommerce, creative experience and user experience were all among the winning categories for ESD*life*. Congratulations!

Crucial test for our future

Switching from natural gas to 100% hydrogen for heating homes would bring tremendous environmental gains in reducing carbon emissions. Northern Gas Networks and its partners have launched the first test facility for 100% hydrogen as part of the H21 project moving towards this grand goal. Successful results could lead to a global wave of change, helping to reduce carbon emissions.

MAPPING THE UK'S UNDERWORLD

Northumbrian Water, Northern Gas Networks, local councils and other collaborating companies have pioneered an underground digital map system detailing the world under 140,000 properties in the UK's North East. Achieving the ultimate aim of a UK-wide Underground Assets Register will improve safety conditions for workers and make roadworks more efficient and so less troublesome for local residents.

HELPING THE FUEL POOR

UK Power Networks has launched a £300,000 Power Partners fund that helps charities and community groups working to alleviate fuel poverty, to support people in vulnerable circumstances and to make community buildings warmer and cheaper to heat. Fuel poverty is a real problem in the UK and UK Power Networks is committed to finding solutions that can benefit wider society.

ENERGY

IT'S BUILDING TIME IN THE SOUTH CHINA SEA

It's that time of the year when offshore construction begins in the Liuhua 29-1 deepwater gas field, part of the Liwan Gas Project in the South China Sea. Drilling and pipe-laying have already started, and first production is expected around the end of 2020.

PIPELINE SAFETY FROM UP CLOSE TO OUTER SPACE

Husky Midstream is using satellites and fibre-optic sensors to keep a very, very close eye on pipelines in Canada to improve safety. Fibre-optics deliver real time data from super sensitive sensors while satellites scan surface soil, detecting soil movement down to the centimetre.

HANDS-ON EXPERIENCE FOR GIRLS IN SCIENCE

Husky's Techsploration programme is giving girls access to tools and exposure to scientists through financial support, access to mentors and real experience with industry practices. Part of the Women in Resource Development programme, Grade 9 girls in Newfoundland and Labrador, Canada, are getting a solid introduction to potential careers in science and engineering.

TRANSFORMATION

PORTS
TRANSFORMATION
PAST AND FUTURE

HUTCHISONPORTS

Hutchison Ports celebrates its 50th anniversary in an enviable position as the world's leading port network. That success arises from an expansive vision that sees more than docks, quays, cranes and containers. The future will see the ports group growing by leading a technological and human transformation in the logistics industry. The technologies in play and the people that develop them are at the core of this global powerhouse.

Throughout its history, Hutchison Ports has consistently displayed creativity in management and has shared its best practices across its global operations. Space constraints in the home base of Hong Kong led to innovative, super-high container stacking methodologies that still influence modern practice. Rapid adaptation to the era of container shipping saw the Port of Felixstowe leapfrog past its competitors to become the biggest port in the UK. And Hutchison Ports developed its own Terminal Operating System, nGen (See *Sphere* 32). But there is more to come. Much, much more.

THE NEW ERA: SMARTER, LEANER, FASTER

Hutchison Ports' focus on efficiency and exploring new potential sites for development was wildly successful in putting its operations across the planet.

The future transformation of the ports group's fortunes is focused on technology-led efficiencies that drive cost reductions and environmentally friendlier ways of working. Standardisation made possible through nGen will amplify the impact of successful innovations and best practices and make the most of economies of scale, in particular through shared services. New digital technologies will be integrated with nGen and other operations. Automation of vehicles and equipment will be a big part of the story. New ideas combined with experience will deliver a transformed future for Hutchison Ports – even a SMARTer future.

STANDARDISATION IS SMART

SMART isn't just an adjective – it's a formal programme of transformation. The SMART Network Strategy has four major

components that complement one another: Standardisation, Automation, Digitisation and Organisation. Understanding these elements is crucial to understanding how Hutchison Ports is changing everywhere, from headquarters and the dockside to integrated logistics platforms and customer service centres.

At the heart of Hutchison Ports terminal operations is the nGen system. First created in 2003 and deployed in Yantian, it has spread across the ports group's network. It is the nervous system – the brain, spinal cord and network of nerves – of Hutchison Ports. Constantly upgraded, it is the key to standardising best practices and implementing new technologies across the entire network of ports.

While the business may look simple – containers on, containers off, done – those in the ports game know that the truth is anything but that. High volumes, local rules and regulations, business culture and historical realities make each port unique in how it operates. However, a great deal more can be done to implement best practices. nGen enables the delivery of those best practices across the ports network.

Trying to determine how to integrate best practices with a bewildering array of highly customised local systems in acquired businesses would present any normal company with a monumental and complex task. However, nGen provides a framework and connectivity that vastly simplifies that process – one that is being used across the Hutchison Ports network. Starting from only one port in 2003, nGen has grown and it handled 55% of all throughput in 2018. The plan is to achieve 70% by 2022.

The benefits are real. Savings of up to 20% have been realised in the past five years alone, compared to using off-the-

shelf software. More importantly, nGen is customised to enable it to play an integral role in establishing Hutchison Ports' standard way of doing business, enabling the ports group's rapid expansion and the roll-out of the other elements of the SMART plan as they come into play i.e. Automation, Digitisation, and Organisation.

AUTOMATIC FOR THE PEOPLE

Prior to the container age, working on the docks was arduous work, with weather-beaten men hurt by loose cargo falling out of hoisted nets. Containers made the work infinitely safer, but crane workers still need to ascend to great heights to work in a cabin.

The new era of automated and remote-control technology is being implemented across Hutchison Ports' operations. It is bringing safety, health and comfort benefits to workers, enabling diversity in the workforce, and dramatically increasing the efficiency of operations.

The Rubber-Tyred Gantry Crane (RTGC) is the most commonplace equipment in the container yard storage areas of the world. They have become eco-friendlier in recent years as new RTGCs are now

Hutchison Ports has consistently displayed creativity in management.

electric powered. But they still need an operator on top of a crane for hours. Hutchison Ports began converting cranes into semi-automated remote-control (RC) cranes in the early 2010s in Hong Kong. Remote-Control Quay Cranes (RCQC) were introduced in 2015 in the company's Saudi Arabia operations, where high temperatures can be crushing. Thailand is the next frontier, with both RCQCs and RC RTGCs coming into play.

These remote-control cranes are quickly accepted by the workers, taking them out of the crane cabins and placing them in air-conditioned offices. Formerly, the profession was dominated by male operators. But now, a more diverse workforce can be recruited to operate these cranes. And all operators can benefit from nGen helping them with the loading and unloading of containers.

"J.A.R.V.I.S., MOVE THAT CONTAINER PLEASE"

The *Avengers'* Iron Man, aka Tony Stark, had his onboard computer assistant, J.A.R.V.I.S., to help him keep track of systems and help him out in a pinch. Likewise, semi-automated crane operations help operators do their jobs, improving overall efficiency.

There are automated and semi-automated cranes that port operators can choose from today. Combined with RC tech, semi-automation can help workers do their jobs

better and more efficiently. For example, semi-automated RC RTGCs can help almost every crane operator achieve the two-minute loading/unloading standard expected of an expert operator.

The next step is, of course, fully automated cranes that can do the jobs by themselves. Think *Iron Man 3* when J.A.R.V.I.S. delivered a host of over 20 specialised Iron Man suits programmed and battle-ready to assist Tony Stark. New cranes can be programmed to find, pick up and deliver a container with assistance from artificial intelligence (AI) technology. This includes fully automated straddle carriers in some ports. The road map for development in Laem Chabang, Thailand, has recently seen the ports group invest US$600 million in a range of automated and semi-automated RC cranes, showing

> **Remote-control cranes are quickly accepted by the workers, taking them out of the crane cabin and placing them in air-conditioned offices.**

the way for the rest of Hutchison Ports. In addition to new cranes, a transformation at pavement level is taking place as traffic control, signage and more are being changed to allow the co-mingling of driverless and people-driven vehicles.

It may seem eerie watching from the ship, as driverless vehicles patiently wait for apparently unmanned cranes to deliver containers to them before they manoeuvre around container parks and away. But those operations deliver big savings – up to 60% for RC RTGCs versus traditional RTGCs. Fully automated cranes may deliver even bigger savings. J.A.R.V.I.S., feel free to handle the containers as you see fit!

DIGITISE TO LOCALISE – AND GLOBALISE

nGen is the nerve network of the Hutchison Ports operations – and far beyond. All those automated machines will have to plug into, and communicate with, systems that talk to every part of global operations. Beyond that, they will need to speak to the rest of the entire logistics world.

Part of the digitisation story is the demand to connect to the different players and platforms in different countries. Government bodies, like customs departments, are among the most important seeking data from nGen. Preparations are also underway to connect nGen to the new Global Shipping Business Network platform, and it also has Electronic

SMART NETWORK STRATEGY

Organisation

Digitisation

Automation

Standardisation

Data Interchange protocols in place to speak to shipping line customer software, tractor appointment systems, mobile services for truckers coming to port, and more.

All this effort in digitisation brings big savings. Transfer of data – with industrial-grade safeguards to protect private information – to approved parties can be made instant, seamless and paperless, eliminating wasted time and anxiety for logistics partners and their clients throughout the logistics chain.

SOMETHING FOR EVERYONE

Of course, clients don't need to see and access the entirety of the nGen system. They have their own specific needs and concerns. For them, Hutchison Ports is constantly developing nGen-compatible systems to cater to their specific situations.

An example of this is the development of the Landside Digitisation Programme (LDP) to be implemented at Gateway Terminals in the Middle East and Africa terminals. Local shippers, agents and consignees normally queue up at on-site cashier counters with mounds of documentation and cash in hand. With LDP, documents can be scanned and submitted online, and the system takes care of the container booking and delivery processing. Forget risky cash transport; all payments will soon be made online.

And that's just for the customers. Truckers registered on the system arrive at the port, book appointments for delivery and pickup by smartphone, do their administration at an electronic kiosk, and get an e-receipt at the end of the process.

In Mexico, customers are data hungry and so Hutchison Ports has developed SmartPort to feed them. Data analytics and processing and real-time container tracking are all part of the online services. If customers have questions, a chatbot can answer them. It's good for the ports group too; up to US$1 billion savings are expected to be delivered through digitisation in Mexico's port operations alone.

In the UK, different demands resulted in different solutions. The Port of Felixstowe and other UK ports have a deep integration with rail and road connections. Logistics partners there wanted to optimise the inland planning of laden and empty transport legs by truck, barges, and rail. PARIS, the intermodal transport optimisation software developed and supported by Hutchison Ports in the high-tech Cambridge cluster, provides real-time transportation automated planning and optimisation.

AI CAN LIFT CONTAINERS – AND EXPEDITE DECISION-MAKING PROCESSES

With the advent of high-speed Internet connections, it makes sense that the ports group could centralise most data in the hands of highly trained experts to provide for deeper learning and better coordination. This concept is being tested in the new Regional Operations Centre (ROC) in Karachi, Pakistan. Moving forward, Hutchison Ports will develop the use of AI and algorithms to further optimise the efficient handling of data at its second ROC, which is to be developed in South East Asia. AI will read emails and documentation to

extract information from data for automatic stowage planning capabilities. Centred in the middle of the Asian region and its many time zones, it will still be possible to have vital people watching over the data, ready to step in when necessary and whenever needed. Where late-night shift work requires people to work non-natural hours, a centralised system will allow more people to put in a healthier working day.

THE SMART WAY FORWARD

From Standardisation through connectivity with nGen, and now the first ROC, the spread of best practice and efficiency in operations will flow. Automation means helping people to do their jobs better and, ultimately, a streamlined, skilful workforce. Digitisation links together the entire logistics supply chain and allows for customised platforms to take care of customer needs and to drive more efficiencies. At the heart of this change are the people of Hutchison Ports, who are driving this transformation to create an efficient supply chain that uses the most advanced and constantly evolving technology to propel global trade forward.

Onwards to the next 50 years – and beyond! □

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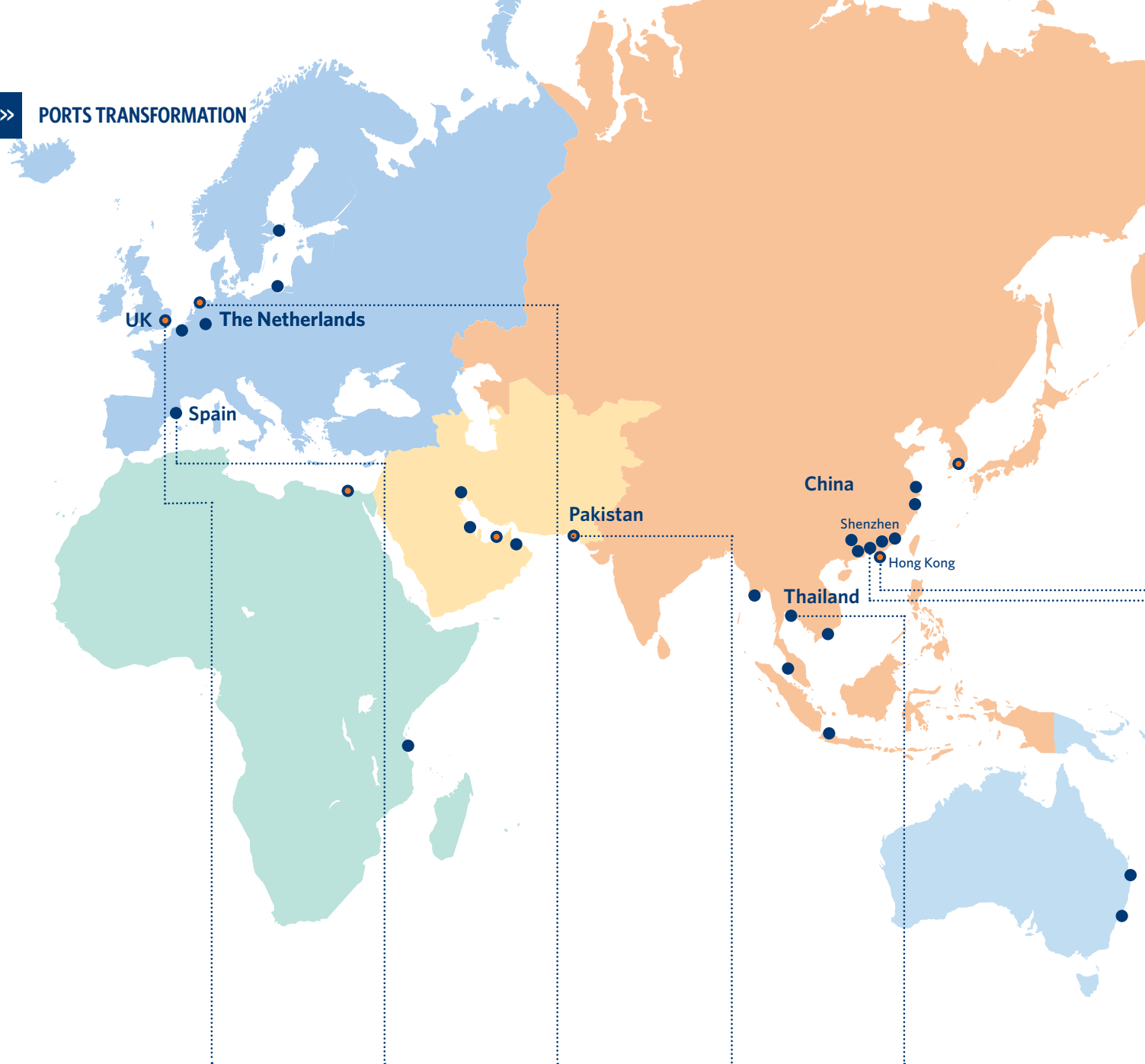
UK

The Netherlands

Spain

Pakistan

China

Shenzhen

Hong Kong

Thailand

Early adopter, technology creator

The advent of the container saw the Port of Felixstowe, one of the busiest ports in the UK, take to the new technology to reaffirm its status as the "Port of Britain". PARIS, the market-leading intermodal transport optimisation software, was jointly developed and supported in the mid-90s by Hutchison Ports (UK) and partners from Cambridge.

The path to automated ports ...

Opened in Spain in 2012, Hutchison Ports BEST is the ports group's first semi-automated deep-water container terminal and the most technologically advanced port development project. Semi-automated equipment improves efficiency and safety and is a stepping stone to more complete automation.

... across Europe and beyond

Hutchison Ports acquired the first fully automated terminal – ECT – in the Netherlands in 2002. Then in 2008, the ECT Euromax Terminal commenced operation. It was designed for fast, safe and efficient handling of the biggest container ships. Both terminals laid the foundations for the adoption of automated terminal operations across the ports group.

Centralised thinking for regional operations

Hutchison Ports Pakistan established the first Regional Operations Centre in 2018. It will centralise stowage planning delivery for both terminals in Pakistan and will extend it to service other terminals within Hutchison Ports' regional network.

Remote control for safety and efficiency

Terminal D in Laem Chabang, Thailand became the world's first container terminal to deploy both Remote-Control Quay Cranes and Rubber-Tyred Gantry Cranes in 2019, improving efficiency, safety and worker welfare.

TECHNOLOGY ROADMAP

Mexico

● Single Port   ◉ Multiple Ports
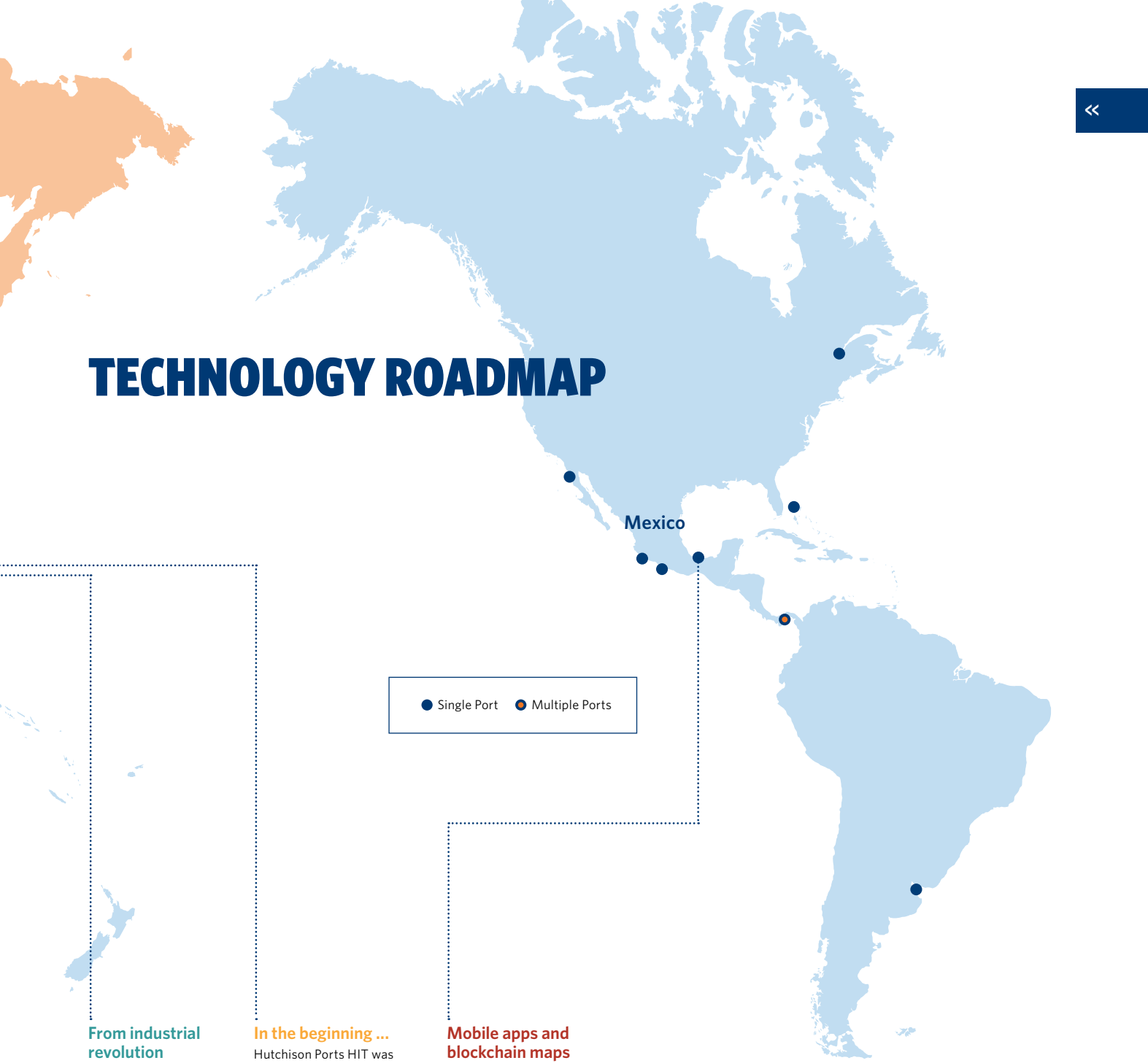
From industrial revolution to software innovation

China boomed as economic reform saw manufacturing experience explosive growth. Shenzhen was ground zero in this industrial revolution, and Hutchison Ports Yantian was established in 1993. nGen was first deployed in Yantian in 2003, leading the way to its global adoption by Hutchison Ports. The terminal continues its innovation and developed its award-winning Multi-vessel Optimisation System.

In the beginning …

Hutchison Ports HIT was founded in 1969 to provide cargo and container handling in Hong Kong. HIT innovated from the start. Limited space led to the development of sophisticated container tracking and industry-beating stacking in the 1960s and 1970s. These creative practices still influence modern container stacking. nGen, the company's proprietary Terminal Operating System, was born here in 2003.

Mobile apps and blockchain maps

The Americas are home to Hutchison Ports operations in Mexico and the birthplace of the SmartPort mobile software for data-hungry clients, partners and logistics connectors. Since 2015, the Port of Veracruz has run smoother through a range of mobile technologies that create a holistic view of logistics for all its partners. The Port is now collaborating with local partners to explore blockchain solutions to improve security and trade efficiency.

DIGITAL TRANSFORMATION

ASW: THE DIGITAL REVOLUTION IS NOW

AS Watson Group is driving a digital transformation that is putting the health and beauty giant closer than ever to millions of people around the world. A deeply integrated online-plus-offline approach is using cutting-edge technology to constantly reinvent the whole customer experience.

A digital revolution is underway and AS Watson Group (ASW) is leading the charge. The ability to gather and analyse data from over five billion shoppers a year opens up vast new vistas for ASW to know – and serve – their customers. In the 21st century, personal contact in the stores and the offline experience are seamlessly integrated with online tools and enhanced by Internet-gathered insights. Through this, the hearts of millions of loyal customers are tended to by everyone at ASW, from front-line staff in stores and algorithmic engineers right up to senior management.

ASW began a journey of digital transformation that is an online-plus-offline (O+O) approach that creates a customer experience where the whole is greater than the sum of the parts. This transformation is intentional and incredibly integrated, from corporate headquarters to every business unit in the retail group.

THE POWERFUL, PLASTIC MIND
Scientists used to believe that the human brain became 'fixed' after it stopped growing in the teen years. But now they have learned that, like an intelligent company, the brain can establish new connections and learn to process information in new ways. ASW's brain has what scientists now call plasticity – the ability to change, reorganise, and reform its neural network to deliver new insights.

The retail group's ability to capture data points is awesome. Traditional intelligence gathering through technology already generates billions of data points annually. Sales transactions (including from online sales), merchandising data and customer preferences are gathered from interactions at the till and through purchases from wholesalers. The data are consolidated in a process known in the business as "Extract, Transform, Load". Every day, the intelligence from multiple systems is automatically brought together on the Enterprise Data Platform (EDP) at the core of ASW's intelligence. It not only collects in-house data, but is fed data on competitor activity, weather, socio-economic factors and more.

In recent years, some sources of intelligence have become accessible in real time. Even more impressive, they have been augmented with new sources of data which help decision making.

SHOW ME THE LOVE … SCORES
While POS (Point of Sale) devices tell ASW what people buy in-store and online, the retailer also wants to measure customer satisfaction. A new online rating system,

It's a major change of mindset – every ASW business unit now has its own digital vision house to align the goal of digital transformation with all functions within the company.

Customer Love Scores (CLS), generates ratings from post-purchase questions to explore shopping experience and satisfaction.

Social media are huge parts of people's lives now, where they express their emotions and share their loves. That goes for the health and beauty retail experience too. Close monitoring, not only of ASW social media properties, but also those of competitors and key brands, informs the retail group about trends in customer sentiment. Even emojis play a role – they tell a story and impart emotional intel to the ASW team.

ARTIFICIAL INTELLIGENCE, RETAIL INTELLIGENCE

In the health and beauty business, 'natural' is the go-to position in product promotion. But in data analyses, a little 'artificial' goes a long way too – artificial intelligence (AI), that is. Canadian AI retail specialist Rubikloud has worked with ASW's UK superstar Superdrug to improve operations across a range of functions. Stock forecasting accuracy (right stock, right place, right time) has jumped by 10% by using Rubikloud's cloud-based, machine learning platform called Promo Manager. Since implementation in 2017, it has also assessed the effectiveness of promotional lift, price elasticity, residual basket value and other important metrics. It's "All-in for AI" at Superdrug.

ASW's brain has what scientists now call plasticity – the ability to change, reorganise, and reform.
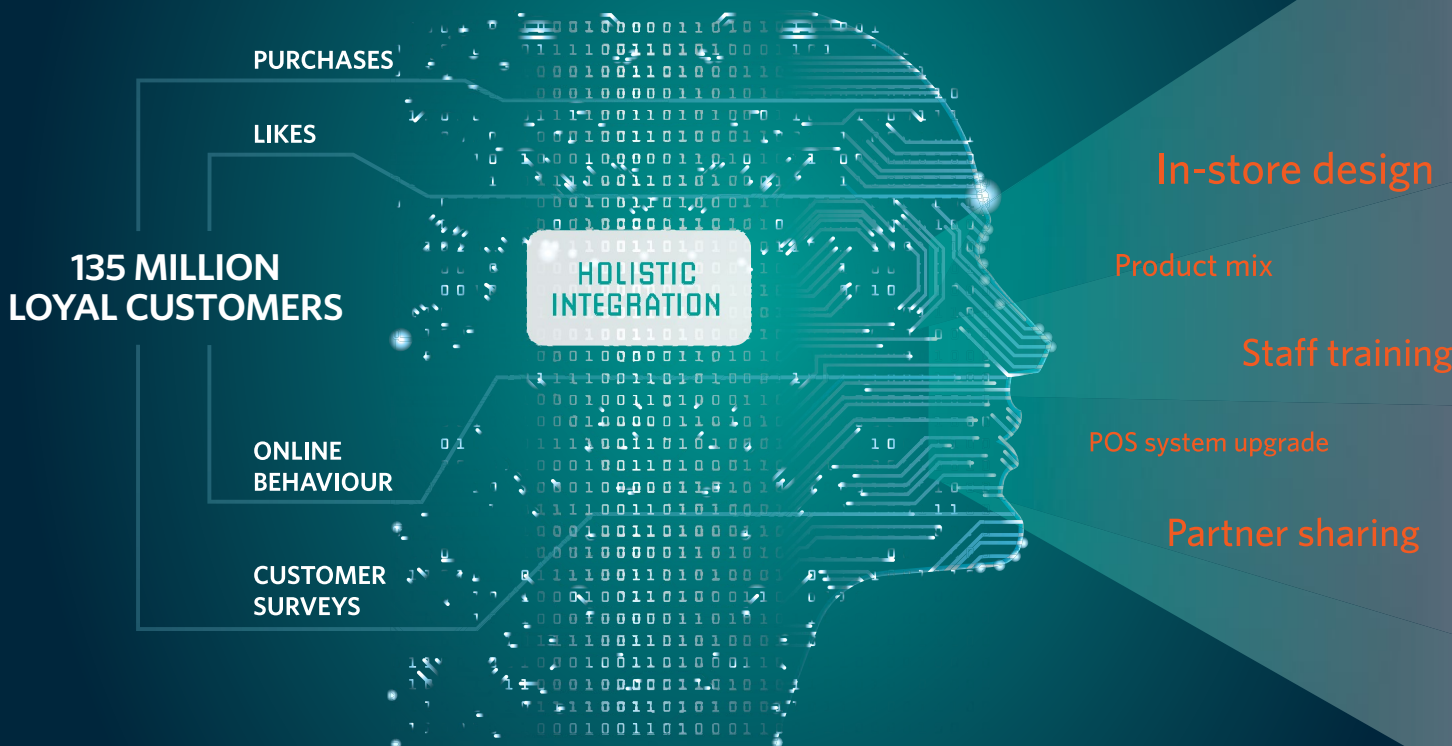
WATSONVIEW, CLEARER VIEW

Collecting billions and billions of data points is completely useless – and would not be undertaken at great ingenuity and expense – unless there was a reasonable expectation of being able to understand the data, share the results and then take action. The first step, therefore, is understanding.

WatsonView is an insights platform that allows planners to see emerging trends and then act. Graphic representation is key to seeing where product sales and other key data are headed and how they are connected to sales-influencing factors. While older systems needed IT departments which took hours to generate reports, WatsonView enables real-time dashboards

to be created. Different business units can create their own dashboards – and then share them with others, for cross-departmental and cross-company understanding. Users can slice and dice the data and drill down to examine single store or single product performance. The ASW culture is empowering managers at the store level to make daily decisions, and also provides vital data to global planners in regional analyst hubs in Hong Kong and London.

It's a major change of mindset – every ASW business unit now has its own digital vision house to align the goal of digital transformation with all functions within the company.

The DataLab team gains an understanding of consumer attitudes from its research arm, WISE. Connecting business units across national boundaries and internal departments, an integrated O+O approach provides actionable, integrated WISE-dom.

PURCHASES

LIKES

135 MILLION LOYAL CUSTOMERS

ONLINE BEHAVIOUR

CUSTOMER SURVEYS

HOLISTIC INTEGRATION

In-store design

Product mix

Staff training

POS system upgrade

Partner sharing

A SHOPPER'S DREAM: THE ENDLESS AISLE

Even an empowered manager with hyper-relevant real-time data can only fit limited products in a physical space. Any gap can leave a body wanting when it cannot find what the heart desires. The Endless Aisle, launched in Hong Kong in PARKnSHOP, FORTRESS, Watsons (also Taiwan), and some Rossmann stores in Poland, aims to put an end to the wanting. In-store touchscreens allow customers to browse a truly massive selection. Promotions, product intel and more enhance the experience and provide a promise of delivery to the store with a flexible pick-up time. A frustrated customer, potentially leaving with no purchase, becomes a happy customer guaranteed to come back for a pick-up.
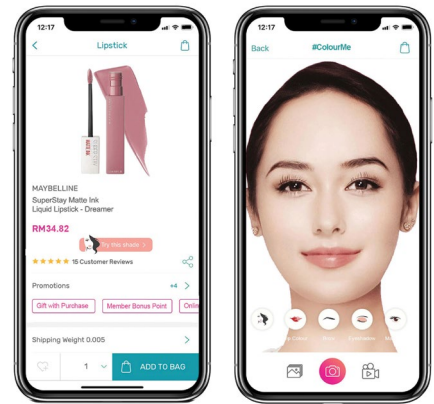

A MILLION WAYS TO BE BEAUTIFUL

Decision-making leading to purchase can be stymied by indecision, especially for beauty products. People want to see what they will look like with the product on their face. And as any little girl (and many big ones) will tell you, it's fun to play with make-up and share with friends!

Watsons in Hong Kong has led with using virtual reality (VR), augmented reality (AR), artificial intelligence (AI) and deep machine learning to let people have fun playing and sharing with friends. The in-store StyleMe, also launched across Asia, lets people apply virtual make-up as they look at a camera-equipped touchscreen. The AR version of themselves on screen can show them hundreds, maybe thousands, of make-up combinations on their faces without the fuss and mess of actually applying them to their face. From subtle shading to mad party looks, it enables consumer decision-making.

In Malaysia, #ColourMe was the name of the AR function available in the Watsons app incorporating L'Oréal's ModiFace AR app which allows shoppers to virtually try on make-up. Delivered in store or as an app on users' phones, it connects customers directly to purchasing. #ColourMe allows users to post photos directly to social media, further spreading the news. Early trials in May recorded an 83% purchase conversion rate and added an average of 20% transactional value per basket, both figures as compared to all app shoppers. Now, it's also available in Thailand, Singapore and Taiwan!

#ColourMe

Social media are huge parts of people's lives now.

Jeffree Star Cosmetics X AS Watson

280,000+ social media sign-ups across Europe

32% of customers who bought Jeffree Star Cosmetics also bought other products

Sales up **12%** in a month

YOUNG AT HEART

Capturing the hearts and loyalty of customers is achieved via a process of knowing them, pleasing them and respecting them. ASW does this through a lot of caring, a lot of listening and a lot of cutting-edge technology.

Younger customers and younger staff – Gen Y and Gen Z – are digital natives and are ASW's fastest-growing customer segment around the world. They share their loves and likes constantly through online and mobile platforms. Customer Love Scores, like online basket sizes and visit frequency, combined with visualisation provided by WatsonView, help the team at ASW to carefully track the purchases and behaviour of loyalty members and identify those who deserve a little extra care. Members feel the love and are more than willing to help with the process. They know their opinions make a difference; over 500,000 provide their feedback monthly through online platforms. Each market is empowered to develop their own culturally appropriate rewards systems and member privileges to build long-term loyalty.

STAFF, MEET CUSTOMERS

A great example is the wildly successful Watsons O+O campaign in China that saw millennials, Gen Y and Gen Z customers interact through the hugely popular app TikTok (known as Douyin in China). The

TikTok platform allows users to overlay fun filters and effects on super short videos (3 to 60 seconds) to share with friends, and to tag those videos to specific locations. The China Douyin Challenge saw people rushing into Watsons to shoot their videos and enhance them with Watsons' specific overlays to share with friends in return for coupons and other rewards. Over 320,000 user-generated clips had over 2.6 billion playbacks, a stunning result and a case study in successful, O+O engagement. Watsons became the number one TikTok account in China in the hotly contested beauty category in just six months.

Staff got in on the fun too. An internal challenge saw them generate their own videos, with one reaching over four million views. Staff discovered they could do more than just sell health and beauty products; they could be stars!

NOW STARRING IN EUROPE: PREDICTIVE MODELLING

Jeffree Star is a truly modern media creation. This make-up mogul has over 15 million followers on YouTube, and founded the company Jeffree Star Cosmetics based on his online success and all-consuming passion for bringing out people's inner beauty. To break into Europe, Jeffree Star turned to ICI PARIS XL and Marionnaud.

Belgium and The Netherlands were the opening target markets. ASW's rich data sets and deep understanding of the market were the foundation for a digital marketing campaign targeting the under-35 make-up consumer. The results were fantastic. Over 280,000 social media sign-ups across Europe. Sales up 12% in a month. And 32% of customers who bought Jeffree Star Cosmetics also bought other products. The man behind the brand couldn't be happier, saying "AS Watson has been an amazing partner, providing me with an efficient distribution platform as well as the tools to be able to target my fans and beauty lovers

who like to create bright, fun and innovative beauty looks."

Beyond the 'Star', another example of a customer insight-driven campaign is Maybelline – a global make-up brand and a vital part of the L'Oréal Group's cosmetics powerhouse. ASW has helped L'Oréal to dramatically increase sales in Thailand and Malaysia by a targeted electronic direct mail (EDM) campaign to over three million Thais, which attracted 170,000 new customers and spurred double-digit sales increases (year-on-year) in the kingdom.

O+O+PEOPLE

The transformation of the AS Watson Group sees it leading a global digital revolution, driven by a thoughtful strategy using the world's most cutting-edge technologies. The retail group will need all the tools that ASW is bringing to bear in order to keep up with sophisticated, fast-moving, tech-savvy customers across Asia and Europe. But the rewards are tangible. Having actionable insights derived from a nimble and powerful set of analytical systems allows the company to take action in a way that engages and delights the millions of ASW customers. The online, the offline, the intelligence and the heart behind ASW will continue to bring joy, health and beauty to millions around the world. ☐

Any little girl will tell you it's fun to play with make-up and share with friends!

HEALTHY MIND, HEALTHY BODY

ASW is, don't forget, a *health* and beauty retailer. Delivering health through technology is known as healthtech and ASW is a world leader.

In the UK, Superdrug has been leading the way to become the leading online medical service in the country through its digital healthcare services, including Online Doctor, Online Opticians and Online NHS Pharmacy.

The combined suite of services can now test or treat over 65 conditions, including erectile dysfunction, diabetes and travel health. Online and in-store services helped over 500,000 patients in 2018.

The retail group is much more than just a health and beauty retailer, and is now stepping into the healthcare industry too. ASW has over 65 nurse clinics across the UK to add to its 200 pharmacies. Healthcare services should reach over £30 million in sales in 2019.

From the online to the offline, in-store diagnostic testing, digital GP consultations and the ability to order and collect medication where and when you need it, Superdrug is using digital solutions to change how healthcare is delivered in the UK, and it is one of the leading healthcare providers.
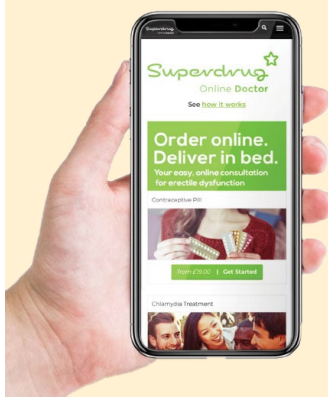
HERITAGE

ILLUMINATION
TSZ SHAN MONASTERY
BUDDHIST ART MUSEUM

The human mind is beset by distractions and trivialities, a constant condition which is only aggravated by modern living. Thousands of years ago, the young prince Siddhārtha Gautama sat for years under a Bodhi tree until clarity prevailed and the Buddha came to be. From this revelation was founded a religion, a movement, a transcendent spirituality that transformed the course of humanity.

Over the ages, man has sought that enlightenment and it has inspired art that aims to edify the soul. Some of that art survives the ages and is gathered in special places to allow for genuine contemplation. Sometimes it is in a temple, sometimes a museum. In rare cases, it is both: the Tsz Shan Monastery Buddhist Art Museum.

Clarity • Compassion • Action

Mr Li contemplates this delicately crafted marvel from the Northern Qi dynasty in China (550–577 CE), one of his favourites. Qingzhou statuary's uniqueness is on full display in this icon, through an otherworldly placidity and kindness visible in the Buddha's countenance.

The Tsz Shan Monastery Buddhist Art Museum houses a collection of over 100 Buddhist artefacts from a range of time periods and styles. The Buddhist traditions represented are the three major ones: Chinese Buddhism, Tibetan Buddhism and Southern Buddhism. Their presentation examines not only how these traditions interact with each other, but also how Buddhism integrates with other cultures.

The collection also includes 43 Dunhuang sutra manuscripts. These are collections of holy writings from the Dunhuang area in Gansu Province. The sutras provide spiritual guidance for visitors and a focus of contemplation for scholars. Kept in strictly controlled environmental conditions, the sutras are exhibited in rotation to preserve their integrity.

It is important to remember that the artefacts transcend the status of historical record. Each one has been an object of ritual, supporting the pilgrim's walk on the path of enlightenment. In a sense, they have found a new home in which to play that role in Tsz Shan Monastery. The history and philosophy of Buddhism will come to life through educational programmes for visitors. The Museum's setting, deep in the heart of the Monastery, will see visitors move through the holy spaces of the larger temple before coming into the even more serene interiors where the artefacts are presented in gentle illumination.

Standing Sākyamuni Buddha comes from one of India's ancient kingdoms, now near northern Pakistan and eastern Afghanistan. Hellenistic rule left its mark, as regional art is stylistically influenced by Greco–Roman art. The realistic style of Gandhāran sculptures is evident.

Head of Buddha with Regal Crown is a rare example of a Buddha with a crown and jewellery. The tall crown is elaborately and exquisitely constructed with continuous beads, flowers and beaded floral motifs. This Buddha head is believed to have been produced in Shanxi in the mid-Ming dynasty (c. 15th century).
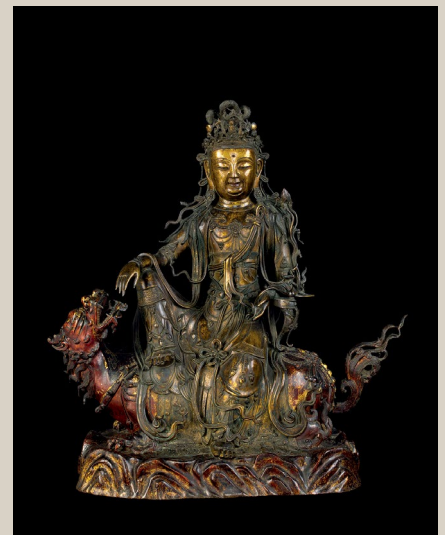

Guanyin Bodhisattva Seated on Lion Mount hails from the Chinese Ming dynasty (c. 15th century). This statue features Chinese elements for imperial Buddhist statuary using the characteristic style of early Ming (1368–1644 CE).

Śākyamuni Buddha was meditating under the Bodhi tree when a mighty storm arose. The Nāga King, lord of divine semi-serpent people, left his throne to protect the Buddha by wrapping him in seven coils. *Seated Buddha Protected by the Nāga King* is from the Cambodia Khmer Empire (c. 12th to 13th century).

Sixteen Great Luohans were asked by Buddha to stay in the mortal world as Dharma protectors. The gilt bronze *Seated Luohan* (Ming dynasty, c. early 15th century) depicts one of them, gracefully.
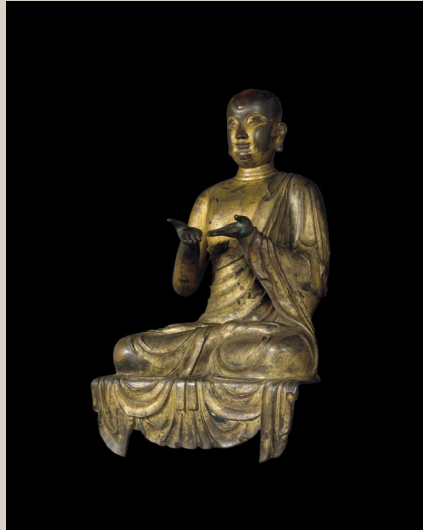
Standing Kṣitigarbha Bodhisattva vowed to stay on Earth, denying himself Nirvana and Buddhahood, until all the hells were emptied. This statue is from the Japanese Kamakura period (1192–1333 CE), and is an appropriate exhibit as Kṣitigarbha had a profound influence on Chinese and Japanese Buddhism.
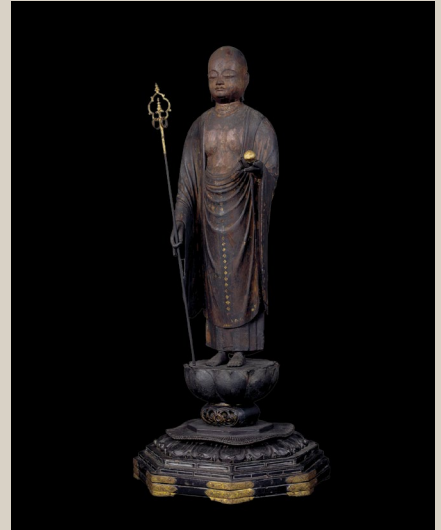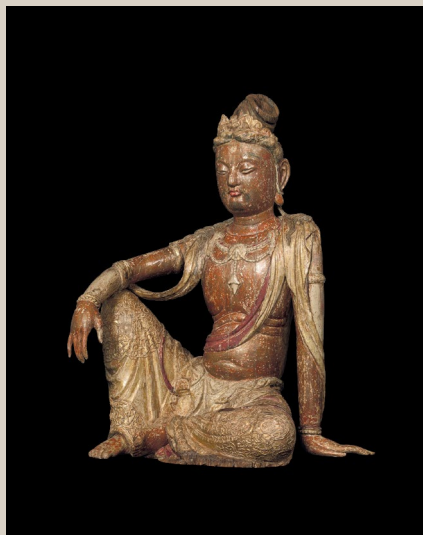

"Masterpieces are a portal to the past and the future, seamlessly weaving together the Dharma of purity, integrity and impermanence."

Mr Li Ka-shing
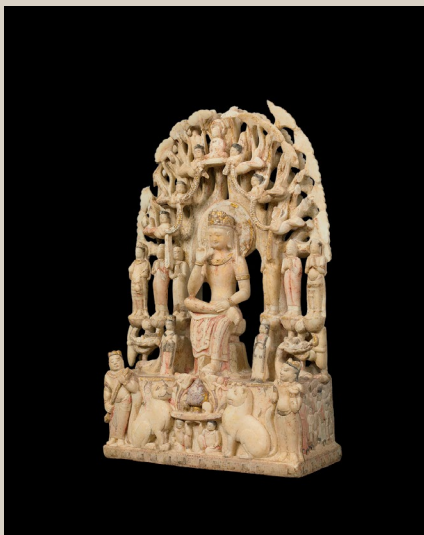
Pensive Bodhisattva is also from the Chinese Northern Qi dynasty (550–577 CE). This unusually large piece (over 60cm tall) displays meticulous carving and is exceedingly rare among white stone sculptures of this era.

Art over the centuries isn't static. This *Seated Guanyin Bodhisattva* is originally from the Chinese Liao dynasty (916–1125 CE). But a restoration during the Ming dynasty saw gelled appliqué cloud motifs and colloidal gold paint added around the knees, hundreds of years after its creation.
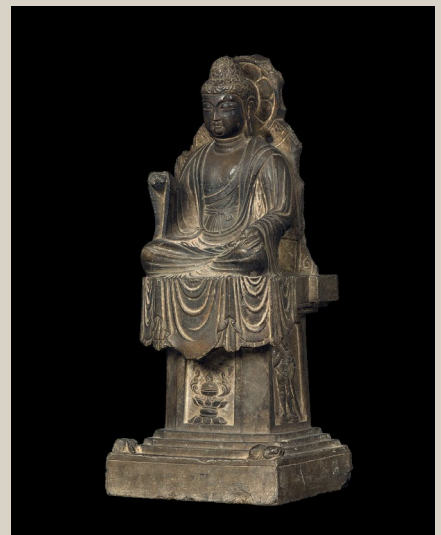
Seated Amitābha Buddha was made during China's first year of the Chuigong reign Tang dynasty (685 CE). The votive inscription on the front edge of the base shows that this Amitābha statue was presented by a dutiful son in honour of his deceased parents.

The Monastery's Abbot, the Venerable Dr Thong Hong (second from right) welcomes guests including Hong Kong SAR Chief Executive Mrs Carrie Lam (left of centre), LKSF Chairman Mr Li Ka-shing (fourth from right), Director of Liaison Office of the Central People's Government in the Hong Kong SAR Mr Wang Zhimin (third from right), Chairman of the Board of Tsz Shan Monastery Mr Victor T K Li (third from left), Deputy President of The Buddhist Association of China the Venerable Ming Sheng (second from left), President of The Hong Kong Buddhist Association the Venerable Kuan Yun (right), and Deputy Chairman of the Board of Tsz Shan Monastery Mr Richard Li (left).

TSZ SHAN MONASTERY BUDDHIST ART MUSEUM

Tsz Shan Monastery, conceived in 2003 and more than 10 years in the making, provides a refuge for the soul, a 'pure land' in Hong Kong that offers learning and community engagement alongside enlightenment. In March 2019, it unveiled a stunning collection of Buddhist art within the Tsz Shan Monastery Buddhist Art Museum, cosseted under the 76-metre tall, iconic Guanyin statue that looks out across the Hong Kong countryside to the ocean.

"The quest for peace and tranquillity is more relevant than ever in our hectic everyday existence."

Mr Li Ka-shing

Funded by his namesake foundation, Mr Li Ka-shing's sharing spirit has enabled the creation of a haven that, in his words, "takes visitors on a journey through space and time, and enriches those who seek transcendence and spiritual realisations with an opportunity to explore beyond the symbolism and the art for the essence of the Buddha's teachings". That haven is supported by a dedicated cohort of monks, scholars, monastery team members and volunteers whose contribution is essential to the Monastery's tranquillity and good functioning.

Many were on hand when Mr Li, benefactor of the Monastery and Chairman of the Li Ka Shing Foundation (LKSF), spoke at the official opening of the Museum. Quoting his favourite Dharma teachings in the Diamond Sutra that posits that all phenomena are like a dream, an illusion, a bubble, a phantom, Mr Li believes that grasping the world beyond the immediate happenings of daily life is an art and we all need to find answers to the bold and hard questions "Who am I? What should I do with my life?" and most

importantly "In what direction should we move forward and thrive together?" The future – whatever it might be – is defined by our purposeful trajectory of wisdom, compassion and undertakings. He hopes Tsz Shan Monastery can be a space for such quiet contemplation and orientations.

Mr Li drew a direct line between core Buddhist values as expressed in the Eightfold Path – Right View, Right Intention, Right Action, Right Speech, Right Livelihood, Right Effort, Right Mindfulness and Right Concentration. This philosophy manifests in the world as the practical action that is the *modus vivendi* (way of life) of Hong Kong, "forever the sinew of the Hong Kong story".

The Museum presents the perfect environment for visitors to consider these issues among the relics of antiquity. This investment in humanity's karma was provided for by a HK$3 billion grant from the Foundation which supported the land acquisition, building of the Monastery, creation of the Museum, and the daily operating expenses.

Tsz Shan Monastery is protected by the serene presence of Guanyin in the verdant hills of Hong Kong.