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Cover Illustration Jessica Li

Many of CKHH's finest do their best work under the moon and stars. When the sky is dark, bright workers deliver the goods 24/7 so the rest of us can sleep well at night.



Technology succeeds when it serves the needs of humanity's body and soul.

TECH TO CONNECT

Frequently, technology amazes us with the whiz-bang newness of what is made possible. But in that amazement, it is often forgotten that technology succeeds when it serves the needs of humanity's body and soul.

3 understands this intimately, and the telecom group combines its prowess, reach and technological mastery to connect to its customers by supporting music development that touches the hearts and souls of their clients.

Further upstream in the telecom businesses is the newly formed CK Hutchison Group Telecom and its subsidiary CK Hutchison Networks. Reorganising the telecom business as well as the mobile tower assets rationalises vital connectors in the emerging era of 5G, Internet of Things, drones, autonomous cars and more.

Fire, and later electric light, saw man make the night-time his realm. Modern civilisation

cannot survive without the work of the night shift - those who keep the world going after midnight. Tech plays a big part in making sure that gas, food, electricity, and good times all work 24/7 through those who keep the flame burning after midnight.

If the Group's night shift looks out for us while we sleep, the Li Ka Shing Foundation looks out for the small business owners of Hong Kong when trouble strikes. In an unprecedented move, the Foundation disbursed over HK\$1 billion to those struggling to keep their heads above water during Hong Kong's recent disturbances. Almost as astounding as the heart and trust behind this programme was the use of cloud and AI technology to design the plan, evaluate applications and send cash support to worthy recipients, all in mere weeks.

CKHH's tech is delivered by those whose hearts are in the right place, day and night, to put a smile on the faces and a song in the hearts of those they serve. \Box

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COVER STORY

AFTER Midnight

While the rest of the world sleeps, CKHH's nocturnal elite keep the oil, gas, electrons, containers and calories pumping through the arteries that keep our economies and lives strong. When the sun goes down, they go to work – after midnight.









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From Ireland to Indonesia, **3** has hit on the way to capture the hearts of customers: through music. But it doesn't just deliver songs and downloads - it delivers dreams.

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Crunch Time Relief for Hong Kong

Hong Kong is experiencing a time of unprecedented economic hardship and the LKSF is providing relief for small businesses that need a helping hand, just in time.

NEWS

PORTS

MARITIME FUN FOR 50TH ANNIVERSARY

Over 700 visitors had the opportunity to discover and explore Hong Kong's maritime history and development, courtesy of Hutchison Ports HIT on the occasion of their 50th anniversary. The Hong Kong Maritime Museum picked 1 December 2019 for their "HIT 50th Anniversary Fun Day". Here's to the next 50!

Mobile CMS allows paperless and data-oriented information handling for external tractors.



Man Oman! High-tech cranes crowned

Hutchison Ports Sohar received new remote-controlled cranes, the first of their kind in the Sultanate of Oman and the Middle East. Two of them are remote-controlled quay cranes, with an outreach of 24 rows. Another eight automated rubber-tyred gantry cranes are contributing to the high-tech upgrade.

PAPERLESS PORTS

In July 2019, Hutchison Ports Yantian officially launched Mobile CMS, a system that allows paperless and data-oriented information handling for external tractors. Efficiency is good for the environment as the system saves paper and reduces the port's carbon footprint.

CHOO CHOO! THE PULP TRAIN'S IN TOWN

A new container rail haulage service operated by Myanmar Railways started operation at Hutchison Ports MITT, debuting with a freight train loaded with raw materials bound for the pulp factory at Yeni, north of Yangon. This regular service will bring pulp for export through MITT.



WORLD PORT DAYS

Last September saw ECT organise the World Port Days in Rotterdam, the Netherlands. The event introduced ECT's terminals and operations to staff, customers, and the public. Interesting programmes included a terminal tour, a landside operations demonstration, a straddle carrier and reach stacker ride, a rail crane visit and a demonstration of automated guided vehicles in action.





C O R P O R A T E

LIGHTS! DRAMA! ACTION!

Birthday celebrations for the elderly at the Tung Wah Group of Hospitals hit a new high with a short drama and singing with the CKHH Volunteers Team.



THE POWER OF YOUTH

Mae Sot, Thailand witnessed the convening of ASW's new Global Millennials CSR Committee. Fourteen young colleagues from 11 markets in Asia and Europe have been selected to help enhance the retail group's social responsibilities roadmap. The Committee met during the "Give a Smile" medical mission, an initiative that has funded surgeries for around 1,500 children with cleft palates or cleft lips, giving them new smiles and hope.

RETAIL

Watsons China celebrates 3,800 stores

Kunming, China, is host to Watsons China's 3,800th store. Shoppers can experience Watson's cutting-edge and fully integrated digital experience with one-on-one beauty services. This landmark location in the largest city in Yunnan Province marks an important milestone for the company's market leadership in Mainland China.



RETAIL TECHNOLOGY

Shenzhen is China's main tech city and now A.S. Watson Group (ASW) has launched TECHLab, a technology experience centre, in the city of 14 million plus. New architecture development and new customer experience technology will be tested here before heading out into mainstream operations. Visitors can see unmanned stores, smart shelves, a store entrance with facial recognition and seamless payment systems on display.





GREAT, TASTEY NEW STORES FOR PARKNSHOP FANS

PARKnSHOP Hong Kong opened a new TASTE store in Tsuen Wan, featuring elements of traditional Hong Kong culture. GREAT Food Hall also recently unveiled its brand-new look; it showcases over 12,000 delicacies from all over the globe. Mmm! TASTEy local, and GREAT international, treats!

NEWS

TELECOMS

EXPANDING WIND TRE'S COVERAGE IN ITALY

Wind Tre, together with Open Fiber, extended its fibre-to-the-home (FTTH) coverage to reach several more locations in Italy, including Rome, Macerata, and Bologna. Equipped with FTTH connection and mobile data traffic capabilities, the ultrafast line is accessible inside both residential homes and industrial buildings.



TAKING CHARGE WITH SOLAR POWER

The headquarters of **3** Austria (Drei) launched their solar panel system last October. In the future Drei will rely on in-house green electricity to power the telecommunications headquarters.

AMAZON MUSIC IN AUSTRIA

Amazon Music Unlimited has been brought to Austria exclusively through **3** Austria. Customers will get streaming perks and a deal to purchase an Amazon Echo at a reduced price. Drei will make this a seamless change by rolling the price into the mobile phone bill.

4G FOR HUTCH SRI LANKA

In 2019, HUTCH Sri Lanka unrolled its nationwide 4G network and opened a fully modernised data centre. In addition, its newly established converged billing system is able to simultaneously run post-paid and prepaid billing systems on one platform.



INFRASTRUCTURE

H21 wins funding for second phase

A UK gas industry programme called H21, dedicated to converting the network to one that carries 100% hydrogen, has received a £6.8 million award from the regulator Ofgem. The funding will go towards executing the second phase of the programme's research and development, which will include testing operational and maintenance procedures on the network. Northern Gas Networks is the lead partner in the collaborative project.

SHOWCASING TALENT THROUGH SCHOOL OUTREACH

The "**3** Goes To School" programme, a **3** Indonesia initiative, took place last July to October. It aimed to promote educational opportunities for Indonesia's youth through increased accessibility and holding events like the H3Y STAR talent competition. A total of 10,000 students from 725 schools participated in this outreach and the H3Y STAR Festival was hosted by 48 different schools.



5G SPEEDS COMING TO 3 HONG KONG

3 Hong Kong announced its 2020 preparations to implement 5G data for smartphones in the low-to-high range of forthcoming models. To deliver the best user experience, monthly plans are likely to include at least 100GB of data entitlement, with the 5G plan pricing expected to be set much lower per GB compared with 4G plans.

HONG KONG ECONOMIC SUMMIT 2020

At the Hong Kong Economic Summit 2020 co-organised by Metro Radio, Hutchison Telecommunications Hong Kong Holdings (HTHKH) Executive Director and CEO Kenny Koo presented his insights on innovation technologies. He emphasised the ways in which 5G and big data will reinvent business models and provide fresh opportunities, showing HTHKH's commitment to making Hong Kong a world-class smart city.



INFRASTRUCTURE

PAVING THE WAY WITH PLASTIC WASTE

The first trial of using recycled plastic waste in roads and pavements has been completed in Surrey, UK. This joint project, led by UK Power Networks and Stanmore Quality Surfacing (SQS) in collaboration with the county councils of Surrey and Kent, will save thousands of plastic bags and bottles from being incinerated or sent to landfill. If the new road surface passes the next tests, SQS will work with asphalt suppliers to bring this product to wider use.

MICROGRID, MACRO IMPACT

In 2019, EDL completed the first phase of one of Australia's largest hybrid renewable microgrid projects. It uses a 23MW power station that combines solar with gas and diesel generation to power Gold Fields' Agnew Gold Mine. The second phase will include wind generation and an advanced microgrid control system that is set to be completed in mid-2020.

WET WAYS TO WIN

Northumbrian Water received two prizes recently at national award ceremonies. It won in the Digital Construction category at the national Constructing Excellence Awards for its Building Information Modelling Project which captured digital information about the company's infrastructure and assets. Its award at the Intelligent Asset Management Global Awards recognised Northumbrian Water's use of artificial intelligence to access electrical documents, such as technical drawings and locations of treatment works and pipes.

OTHERS

Chi-Med takes great strides for oncology treatment

Chi-Med's first home-grown drug, Elunate, has helped thousands of patients in China since its launch in late 2018. In November 2019, it was added to the updated National Reimbursement Drug List, which will increase the accessibility and affordability of the treatment.

The company's second in-house innovative oncology drug, Surufatinib, has completed its phase III clinical trial for non-pancreatic Neuroendocrine Tumours (NET) a year ahead of schedule. Its new drug application has been accepted for review and granted Priority Review status in the Mainland. Additionally, Surufatinib was granted Orphan Drug designation by the US Food and Drug Administration for treatment of pancreatic NET.



MILESTONE DATA PRESENTED IN VACCINE USE FOR CANCER RESEARCH

CK Life Sciences' Polynoma LLC presented encouraging interim clinical data from their Melanoma Antigen Vaccine Immunotherapy Study at the 2019 Society for Immunotherapy of Cancer Annual Meeting in Maryland, United States. The presentation of these results marks an important milestone for the company's R&D.

LIBRARIES FOR HAINAN SCHOOLS

The Shanghai Hutchison Pharmaceuticals Limited volunteer team began the school year by building libraries in three primary

schools located in the town of Wanquan in Qionghai, Hainan, China's southernmost point.



BIG WINS IN 2019 FOR ESDLIFE

ESD*life*'s digital solutions team took home a grand total of 14 awards in 2019. Four of the prestigious awards received include the "Digital Insurance Initiative of the Year – Hong Kong" in the Insurance Asia Awards and the "Best Mobile/APP eCommerce – Gold Award", "Best User Experience – Gold Award" and "Best eCommerce – Financial Services – Silver Award" in the Asia eCommerce Awards. **COVER STORY**

ENTERPRISE

AFTER MIDNIGHT

In the 2013 DreamWorks film *The Croods*, a prehistoric family only dares to venture out in the daytime; dusk sees them cowering in a cave from all the nasty things that go bump in the night.

Man conquered fire and then built cities; it became the dawn of the night-time for mankind. It was a safer sort of dark that emerged in the cities, a seductive danger, a fun night-time culture of relaxation and revelry that took place after the serious work of the day was done.



n the modern era, working through the night is vital. Civilisation needs the oil, gas, electrons, containers and calories to flow 24/7.

But it has a cost. The dangers of sleepy workers monitoring heavy equipment and vital machinery have been scrutinised and considered.

Now, world-beating operations across CK Hutchison's global enterprise not only compensate for those concerns but have turned the midnight hours into a time of peak performance, with operators sometimes turning in their best work after the sun goes down. Fire may have been the liberator from darkness, but now it is artificial intelligence, advanced physiological and psychological understanding, and other cutting-edge technologies that make us masters of the night.

Insightful leaders know how important our night-time operators are to economic success. They plan for night-time to not just extend the daytime, but to take advantage of the unique circumstances that arise when the sun goes down.

LONDON LIGHTS

UK Power Networks keeps the lights of central London bright for 165,000 homes and businesses. This includes the







City of London and the major entertainment districts of Covent Garden and 'Theatreland' that sit at the heart of London's globally renowned West End. It is a legendary centre of theatres, transport and shopping, and is the crown jewel among London districts. The City's broader night-time economy is worth over £26 billion and employs over 700,000 workers. It is so important to the city that the Mayor, Sadiq Khan, has appointed a special Night Czar, Amy Lamé.

A famous author, BBC Radio personality, entertainment entrepreneur and a former ceremonial Mayoress herself (Camden, 2010/2011), she was appointed in 2016 to, in her words, "... make sure that the capital works for everyone at night – whether you're working, running errands or enjoying your spare time. London's economy doesn't just stop at 6pm. The night-time economy plays a huge role in the capital's success – employing a third of the capital's workforce and contributing billions to the economy. In fact, the economy is growing faster at night than in the day."

While the glitz and glamour of live theatre and fancy restaurants are easy to see, she has time and respect for those making sure the electrons arrive so that electricity can make those businesses prosper. She visited some of the 100 staff from UK Power Networks who work after midnight – on their time: night-time. She got to meet with Paul Smiles, the area manager for central London, and the engineers installing a new substation that supplies the iconic lights of Piccadilly Circus. He leads teams that conduct maintenance, install infrastructure and monitor performance all through the night.

"Our night teams focus on finding the exact locations of cable faults beneath the pavements of London, getting customers' power restored quickly and safely, repairing any damage to our equipment, and inspecting work on underground cabling – which across London as a whole totals 30,000 km and 17,000 substations. We also carry out checks ahead of major public events to ensure the lights remain on."

London is growing quickly, and maintaining UK Power Networks' ability to provide the most reliable and lowest-cost electricity in the UK is a challenge. The company is investing £1.5 billion from 2015 to 2023 in London's electricity network, including nine new substations.

The city - more specifically, the Night Czar - has taken note. She says, "The UK Power Networks' engineers are among the many hard-working people who keep London thriving at night. It was a privilege to see the infrastructure that keeps the capital's heart beating and meet the staff who help make London a truly 24-hour city."

MIDNIGHT FLOW

On the other side of the world, another 24/7/365 business is run by Dampier Bunbury Pipeline (DBP), part of the Australian Gas Infrastructure Group which is a member company of CK Infrastructure Holdings. It sends gas 1,600 km down the west coast of Australia from the northern extremities at Dampier, through Perth and down to Bunbury in the south. From Australians using gas to cook at home and electricity producers serving millions to industrial users in mines and factories, DBP has to consistently alter the flow of gas through the pipe to maintain consistent pressure and flow even as demand rises and falls at myriad points along its length.

Energy producers are big customers with peaks and ebbs impacting the flow of gas needed. Policy in Australia has led to the widespread implementation of renewable energy and particularly the use of solar energy. While many residential homes generate their own electricity during the day, they take more off the grid when the sun goes down. DBP supplies the power generators that have to step up the electron flow to homes at dusk. It often has peak loads into the evening as solar power tapers off. The use of wind power is also in the mix but has variable output as and when the breeze blows, further complicating matters.

國制度



Without the Duty Controller team, gas delivery and downstream electricity supply could be imperilled for millions on Australia's Western frontier.

The Duty Controller (DC) is on the job as that demand rises. The engineer ensures compressors (compressing gas to a specified pressure in the pipe) are maintaining pressure at the proper levels so that flow rates are consistent. When demand comes off its peak, the pipe system goes into a recovery mode. Then the DC can maintain flow - or stop it completely so that maintenance teams can swing into action, knowing that the DC has created a predictable, stable environment inside the pipe so they can do their job. Two duty call officers - the Control Room Operations Superintendent and the Head of Control Room Operations - provide back-up.

They are in turn backed-up by the Dampier Bunbury Natural Gas Pipeline Mainline team at the most critical compressor station, Compressor Station 9, north of Perth, Western Australia's biggest city. Without the DC team, gas delivery and downstream electricity supply could be imperilled for millions on Australia's western frontier.

NIGHT-TIME ON THE DEEP BLUE SEA

Husky Energy Inc is another part of the CK Hutchison Group that has to burn the midnight oil to keep a 24-hour operation going. The margin for error when running a massive gas-producing operation in the middle of the ocean is zero. Whether in the North Atlantic or the South China Sea, safety is the top consideration for workers.

There are fewer people working at night and many considerations are taken into account regarding man's natural inclination to be less attentive - that is, sleepier - at night. Night-time production operators and control room operators carefully monitor equipment to ensure nothing is outside of its operating parameters. Night-time procedures are different in order to keep workers safe.

Based on studies on fatigue management, night-time activities see a reduced physical workload. Workers are encouraged to conduct 'walking around' type activities as motion keeps people sharp. Staff travel in pairs, using a buddy system to check each other's work and to watch each other for fatigue. They can call in a replacement if they feel too tired. They also have access to the Central Control Room at all times in case they need to call in an emergency.

Buddies are on slightly different schedules to ensure at least one member is 'adjusted' to the night shift. When a worker starts their night shift, their buddy will be seven days into the shift and therefore already accustomed to working at night.

Special projects can also be undertaken during the less busy period. As Anthony Underwood, Superintendent Deepwater Operations, explains, "Having worked at nights for over 20 years, I used to prefer



The buddy system compensates for late-night drowsiness at Husky Energy's offshore operations.



nights to days as I could have more time undisturbed to carry out specific projects."

WE DO OUR BEST WORK AT NIGHT

Energy isn't the only type of business that needs to keep the goods flowing. People take for granted the fact that food in the modern world is fresh at the supermarket every morning. But for them to have a pleasant morning, armies of people work overnight so their fruits, yoghurts, baked breads and other goods are as fresh as they can be.

In Hong Kong, PARKnSHOP operates over 260 stores serving 7.3 million people in one of the world's most densely packed urban areas. Goods are constantly flowing in by ship, by lorry and into Chek Lap Kok International Airport by jumbo jet so that the demanding Hong Kong foodies can have the freshest possible food and provisions.

While some products, like ice cream, never hit the warehouse, almost everything else flows through a select group of distribution centres to then go to hundreds of stores. At Sheung Shui, an industrial neighbourhood, a dedicated team of 50 people work with advanced technology to ensure the right goods go to the right place every day.

Fresh fruits from Japan or Latin America, freshly baked breads from local baking operations and fresh vegetables from China are all processed after midnight. An elite group of focused staff, who often prefer the quieter night-time work, move among the goods to be shipped, almost silent to each other - but they hear voices in their heads.

The voice is a technology known as voice picking. A combination of wireless, speech recognition and synthesis technology is used to give staff precise instructions about where to go, what to get, and where to take it. Once staff have trained the computer system by reciting a standard script, they can hit the floor with

their choice of male or female voice telling them where to go. Once they arrive at the destination, they confirm arrival and are told what to get and where to take it.

"The UK Power Networks" engineers are among the many hard-working people who keep London thriving at night."

Amy Lamé The Night Czar of London UK Power Networks energises the music, lights and excitement for London's citizens of the night.

The efficiency shows in worker performance. The old system involved reading cramped charts off paper and staff would often take up to two weeks to hit a normal level of performance. The new headset system not only frees workers' hands and eyes for action, but sees new staff ramp up to top performance within three days. Workers can, in some cases, move twice as fast.

It also brings a higher degree of peace of mind for workers. If a 'picker' is uncertain whether they are in the right place or have the right items, they can ask the computer whether they are in the right place or have loaded the right goods. Also, recruitment is easier as less-skilled workers feel it is less stressful to have a voice system giving them instructions, rather than having to

Voice-picking technology and dedicated night owls keep the stores stocked in the day.





learn a paper-based system with no means of checking in case of error. And speaking to something (if not someone), makes the experience more engaging during the long night hours.

The pickers make sure pallets of goods arrive loaded and ready to hit the lorries which then spread out and bring Hong Kong shoppers the food and consumer goods they need first thing in the morning. Without the midnight workers, their bread would be less tasty and their vegetables a little less crispy.

KEEPING CONSUMERS SAFE

Another night-time operation in the fresh food distribution centre is the round-theclock laboratory testing of Chinese leafy vegetables for pesticide residues. The unique Farm Check programme delivers the inspection, training, accreditation, auditing and traceability of all leafy vegetable farms in the Mainland that supply PARKnSHOP stores. A sample is taken for every type of leafy vegetable from each farm. A rapid 'Immobilised Enzyme' pesticide screening test is performed on site on each and every sample throughout the night, no exceptions.

Before the sun rises, these samples race up to the PARKnSHOP Food Safety Laboratories in Sheung Shui to face highly rigorous scrutiny using advanced analytical instrumentation. In the very unlikely event that any pesticide residues are found that are not permitted or exceed the Hong Kong legal limits, immediate action is taken by removing all affected product from stores. Thanks to the unique 'Farmtrak' traceability system, PARKnSHOP can quickly trace the source farm responsible via the barcode labels on each basket and then move to suspend the supply from the farm concerned.

Later, the PARKnSHOP quality assurance agricultural scientists visit the farm concerned to investigate the findings and instigate corrective action, which may include permanently ending supply from that farm.

Modern civilisation needs the oil, gas, electrons, containers and calories to flow 24/7.

"NIGHT-TIME IS THE BEST TIME"

"Night-time is the best time!" So says Anat Machima, Senior Operations Manager of Hutchison Ports Thailand at Laem Chabang. He has the numbers to back this up.

This port has implemented more remotecontrol and artificial intelligence technology than almost any other container terminal in the world. Its operation uses a wide range of technological solutions. In many cases, the nocturnal port outperforms the daytime operations.

Part of the reason things work better at night is that fewer lorries are on site. While Mr Machima says they encourage more lorries to come at night for pick up and drop off, factories aren't willing to extend their hours to match port hours. If they properly implemented technology like that at Hutchison Ports Thailand and saw the benefits, they would probably be more open to it.

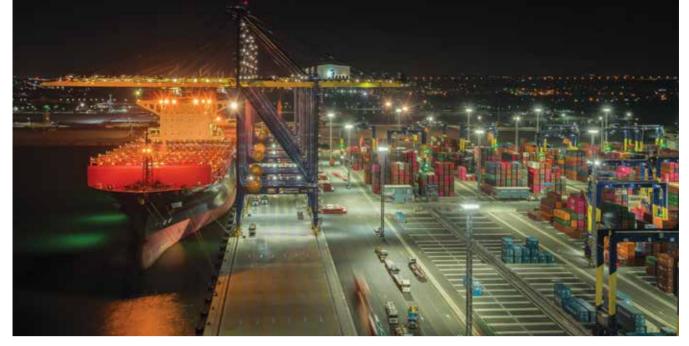
In-situ technology also makes visiting lorry drivers better at their job. Green- and red-light arrows are easier for lorry drivers to see and follow at night. An auto-gantry can detect if lorries are not parked properly and tell them to adjust their position. Omnipresent cameras provide a visual record of all activity should it be needed for review later on.

The new cranes can also detect if a lorry driver hasn't properly released a container from their chassis. In the old days, faulty release could damage the lorry and the crane. Now, the auto-gantry knows there is a problem and gingerly puts the container down before an accident occurs. Even better, with no people needed on the ground, there is no chance for a container to hit a person working down below, a risk in former days (and still so in less-sophisticated ports elsewhere).

Remote-control crane operators often prefer night-time work too. While they use the same remote-control technology during the day, the use of extensive and consistent lighting means they can see more at night. While the light changes over the course of the day, changing the view from the cameras, the night-time light is consistent; there are no shadows and no errant reflections. CCTV resolution has improved dramatically, providing a superior view to the naked eye. Formerly, daytime crane operators had blind spots, trying to see containers and their landing spots from 40 to 50 metres away. Now remotecontrol operators are right in the action. This reduces the risk of accidents. Furthermore, scanners provide a warning of something (a container or lorry) headed in the wrong direction or coming too close to something it shouldn't, just like a car that beeps when you back up too close to a wall.



Testing before tasting in the wee hours keeps Hong Kong's breakfast tables free from contamination.



Lighting and camera technology deployed by Hutchison Ports Thailand creates a night-time working environment that allows for maximum performance around the clock.

For those working on the ground, they often prefer the night shift, according to Mr Machima.

For one thing, it is cooler – an important consideration in the tropics. Less traffic means a more relaxed pace – including a 3am exercise wake-up session. Housekeeping happens at night, meaning the grounds look their best first thing in the morning due to the work of the night shift.

And while there may be concerns about focus, again technology helps. Radio frequency identification (RFID) technology means the remote-control and automated cranes can find and move the right container, every time. Those on the ground can focus on those moments when they need to check things not part of the Laem Chabang system. One example would be containers coming in on lorries.

The technology has dramatically improved safety. Comparing traditional Quay Cranes

(QC) and Rubber Tyred Gantry Cranes (RTGC) to their remote control (RC) cousins, the difference is stark. In 2018, traditional QCs and RTGCs had 23 and 20 incidents, respectively. The RC versions had 2 (RC QC) and 0 (RC RTGC) accidents, respectively.

Ports also track the speed performance of major ships as a benchmark. At Hutchison Ports Thailand, the night shift is a winner. The Hong Kong Express, a ship owned by Hapag-Lloyd, saw a record-breaking turnaround on 4 August 2019. Between 3am and 4am, 217 containers handled by five RC OCs were discharged using remote-control technology and the average crane operating rate during this period of time was 43 moves per hour. Likewise, the handling of ONE AQUILA resulted in a similar record for containers moved. On 17 June 2019, between 1am and 2am, 151 containers handled by four RC QCs were discharged and the average crane operating rate was nearly 33 moves per hour.

Those burning the candle at both ends are the unsung heroes of the night.

Mr Machima is a huge proponent of using technology at night to compensate for our natural tendency to want to sleep. With a little vigorous exercise and smart use of tech, he and his colleagues are demonstrating that they can maximise efficiency and minimise accidents, showing the world that the way forward is the great work that is done at night. For many, nighttime isn't a tough time - it's the best time.

Mr Machima says it again - with gusto: "Work like Batman! Night-time is the best!"

Those burning the candle at both ends are the unsung heroes of the night. The work done in the dark hours ensures that the creatures of the daytime awake to find the world refreshed, orderly and ready for action. Otherwise, half of every day would be spent recovering from the day before. Progress would move at half speed.

CK Hutchison's night shift puts the port in order, the veg in the supermarkets, the gas in the pipes and the electric juice in the great city of London. It isn't exactly easy, but if you know how to do it right, mankind really can be at its best during the night.



Modern stevedores don't get their hands dirty, but they get the job done all night long using remote-control tech.

TRANSFORMATION

3'S CONNECTED WORLD

The telecommunications business is the modern backbone of the mobile and Internet economy. While cables in the ground move the data, telecom towers have become the last-mile solution to getting data to the people.

he world is abuzz with talk of 5G technology and the Internet of Things (IoT). But if the underlying corporate and financial structures aren't modernised, they can slow the upgrading of technology, leaving opportunities on the table and putting a telecommunications leader at a disadvantage to its competitors.

The CK Hutchison Group (CKHH) has moved to modernise, rationalise and energise its global telecom holdings across Europe and Asia. The new holding company's financial strength and corporate structure will position the Group to capitalise on the 21st century's most exciting prospects.

3 EUROPE AND 3 HONG KONG: ALL TOGETHER NOW!

CKHH has moved to rationalise the telecom assets of the Group, whether wholly or partially owned, in a manner that will enable them to unlock value for future growth.

Newly formed CK Hutchison Group Telecom Holdings Limited (CK Hutchison Group Telecom) is 100% owned by CKHH and is a vital part of the global business. Its earnings contributed 31% of Group EBITDA in the first half of 2019 and its assets make up 28% of the Group total. CK Hutchison Group Telecom's strength is the Group's strength.







Under the old structure, Hutchison Telecom Hong Kong Holdings Limited (HTHKH) held the **3** businesses in Hong Kong and Macau as well as related telecom assets. Likewise, each European company – from the UK to Italy – was a distinct company, whether 100% owned (**3** UK, Wind Tre, **3** Austria and **3** Ireland) or 60% owned (**3** Sweden and **3** Denmark). Assets, like cell sites and telecom towers, were held by each national champion. The companies were able to cooperate by, for example, leading Europe in eliminating roaming charges for **3** customers across its six markets.

But now cross-border cooperation, fiscal strength and operational efficiency are all being elevated through the new structure that sees the phone companies held in one vehicle: CK Hutchison Group Telecom.

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Cross-border cooperation, fiscal strength and operational efficiency are all being elevated.

Fiscally, the improved credit rating status of the combined entity enables it to borrow money at lower rates, thereby permitting more flexibility in fundraising. This will have a direct impact on current leverage, especially debt associated with the acquisition of Wind Tre. For the next several years, over €100 million in annual savings will arise from reduced interest charges for Wind Tre alone. The importance of CK Hutchison Group Telecom to CKHH cannot be underestimated, and neither can Wind Tre to CK Hutchison Group Telecom. Wind Tre contributed 54% to CK Hutchison Group Telecom's EBITDA earnings from January to the end of June in 2019.

The evidence for this fiscal upgrade has been confirmed by the world's major rating agencies that pre-approved credit ratings for the new entity. S&P has awarded it an A- rating, Moody's a Baal rating and Fitch a BBB+ rating – all excellent by global financial standards.

With improved fiscal strength and reduced costs in servicing interest, the company is inherently more efficient. It also becomes easier to consolidate buying, providing leverage in negotiations with global suppliers. It can focus on technology roll-out and bandwidth acquisition that makes it more competitive and responsive to customers. CK Hutchison Group Telecom can also boost cross-border opportunities by working as a group as opposed to smaller national entities.

Another vital part of the restructuring is the creation of another new entity under CK Hutchison Group Telecom – CK Hutchison Networks Holdings Limited (CK Hutchison Networks).



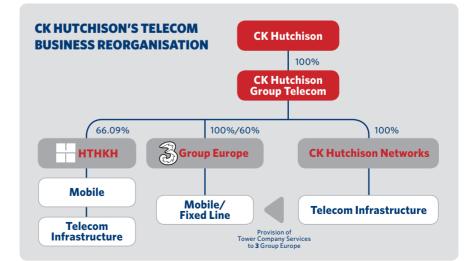


REACH FOR THE SKY

The **3** mobile phone companies focus on new services and putting technology in the hands of mobile device users. But another vital part of the telecommunications business is tower assets. These towers bring the data from the world of cables into the ether so it can reach your phone – and soon, much more.

Telecom towers carry the telephone signals and data that bring you mum's phone call,

your streaming Spotify, Google searches and Instagram posts. But that transmission capability can be leased out to other mobile providers operating drones, sending and receiving vehicle data or taking information from sensors and monitors. The list of uses is as endless as IoT, which delivers a wireless world with all devices connecting through tower assets.

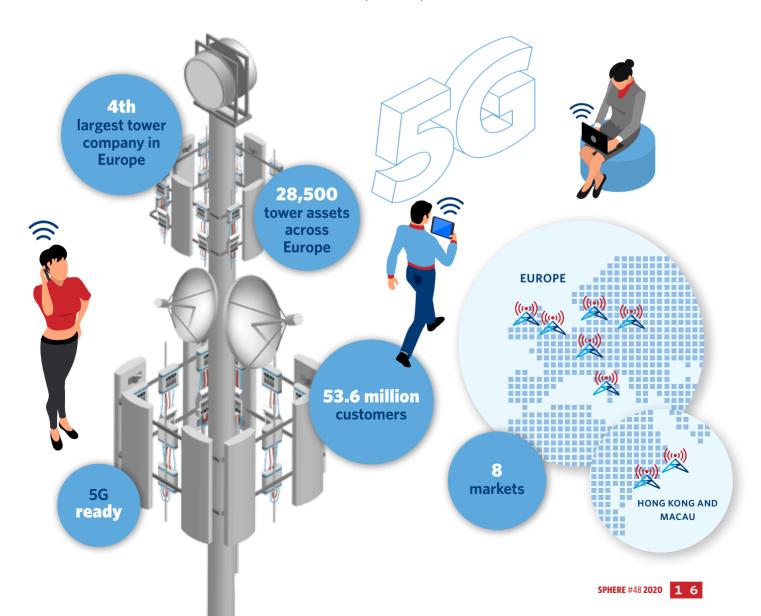


The next wave of telecoms is already upon us with 5G, IoT, drones, autonomous vehicles and mobile cloud computing, all asking more of the telecom network. CK Hutchison Group Telecom combines the Group's European tower assets into one company: CK Hutchison Networks. The Hong Kong and Macau assets (another 9,300 towers) may join in the future. Currently, it means that 28,500 towers across Europe will be owned by CK Hutchison Networks.

This combined model is popular with investors who see significant upside in tower asset managers. This consolidation will make CK Hutchison Networks the fourth largest such company in Europe. Investors also like the visibility that is made possible by combining the assets. They can more easily evaluate the tenancy ratio (how many mobile operators are, on average, using a tower) for companies and judge their potential for revenue growth and determine the implied value per site. There are a series of related services that CK Hutchison Networks can develop including provision of space on the site, energy supply to devices on the tower, site planning, design and construction management and site access management.

THE NEXT WAVE

The next wave of telecoms is already upon us with 5G, IoT, drones, autonomous vehicles and mobile cloud computing, all asking more of the telecom network. The technology can only be quickly brought to bear in a reliable manner by a global company that has a strong structure and strong fiscal position leading into the 21st century. CKHH has created a new, responsive and powerful set of consolidated entities to best position CK Hutchison Group Telecom and CK Hutchison Networks to tackle the future.



COMMUNITY SUPPORT

CRUNCH TIME RELIEF FOR HONG KONG

Hong Kong has been deeply affected by the prolonged plight since June 2019. Widespread disruption to transportation and daily life has resulted in a severe blow to many small businesses in specific sectors. Many business operators have seen their revenues tumble.

he Li Ka Shing Foundation (LKSF) was there to lend a helping hand. In early October 2019, it announced the launch of a HK\$1 billion (around US\$127.8 million) fund to help small and medium businesses (SMEs) in Hong Kong. Later dubbed the "HK\$1 Billion Crunch Time Instant Relief Fund", it provided relief to those businesses experiencing a cash flow crunch across a range of the hardest-hit sectors: food and beverage (F&B), retail, travel, and hawkers (street sellers).

RESTAURANT RELIEF

The LKSF team swung into action to create a quick and easy platform for Hong Kong businesses to be able to apply for and receive funds. They selected key sectors to support, starting with the F&B sector. Those working in that area have seen unemployment levels rise to their highest levels in eight years as sales dropped, and many outlets were forced to close. The Foundation worked with industry associations to ensure that the dedicated application website and processes would be easily understood by small businesses. For truly traditional operators who don't use computers, the F&B industry associations committed to helping them complete the online applications. Each eligible applicant received funding support of HK\$60,000 less than two weeks after the close of the application period.



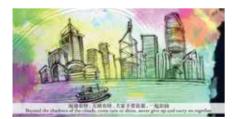


TIMELINE









Famous folk got behind the Fund by appearing in explanatory videos. A celebrity weatherman, football coach and sand artist all supported the effort. From top to bottom:

Mr Leung Wing-mo, former Assistant Director of the Hong Kong Observatory and celebrity weatherman; Ms Chan Yuen Ting, championship professional football coach; and a sand painting by Ms Tse Wai-chi, a famous artist.

RETAIL THERAPY

Phase 2 saw support flow to the hardest-hit retail industry sectors, in particular 1) clothing, footwear and allied products; 2) electrical goods and other consumer durable goods; 3) books, newspapers, stationery and gifts; 4) Chinese herbs and drugs; and 5) medicine and cosmetics. Retailers received either HK\$30,000 or HK\$60,000 in support, depending on their contribution to a provident fund for their employees – a show of commitment to employee welfare.

HAWKERS AND TRAVEL

Some of Hong Kong's smallest businesses are hawker stalls, often one or two person, family-supported operations in busy public areas. Like bigger restaurants, they have had to close on many days and have suffered from reduced patronage.

The travel industry has likewise been hit, with year-on-year visitor numbers dropping 44% in October and a devastating 56% in November – a disaster for travel agents and those who work for them, often on commission.

These two sectors were supported in Phase 3. There are over 5,400 licensed hawkers in Hong Kong that were eligible. Small travel agents (with less than 50 employees) could also receive cash grants. To their immense – and material – relief, licensed hawkers and small travel agents received the full grant just nine days after the application period closed.

FINAL FOUR

Phase 4 used a computerised random process to award grants to those that had previously applied but had not received funds. At this difficult time, many more had applied than could be accommodated, but this additional help provided another ray of light for many small businesses across the city.

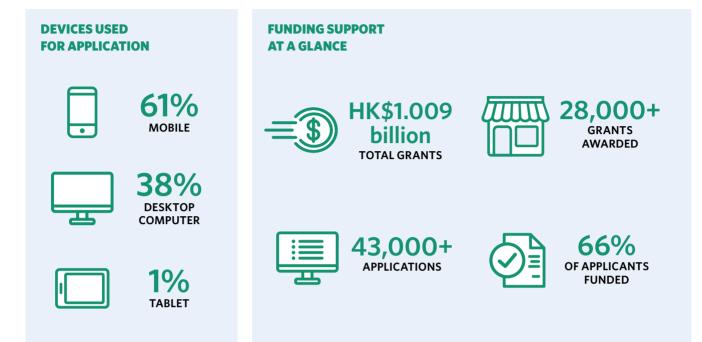
RAPID RELIEF THROUGH TOP TECH

A programme that took months to design, more months to process, weeks to vet applicants and then finally deliver support would have arrived too late for beleaguered SMEs. The Foundation needed sound philosophies and solid technology to move quickly.

A principle of "trust more, stress less" was followed to make applications simple and free from excessive delay. Partners followed this axiom to deliver swift results. And those partners were legion. Major multinationals and local companies, including HSBC, PricewaterhouseCoopers, Woo Kwan Lee & Lo, Google Cloud, ESD*life*, WeLab and Hongkong Post all brought their expertise – and their hearts – to support this project.

Artificial intelligence (AI) and cloud technology in particular were used to create a global showcase for demonstrating how smart city technology can dramatically cut processing time. Google Cloud Professional Services integrated Cloud Vision AI into the ESD*life*-built application

SPHERE #48 2020 1 8



site in just three days. Tony Ma, CEO of ESDlife says, "Since the announcement made on 29 October, the entire application platform was created within 14 days." The ESDlife team worked relentlessly to design and construct the website to make it as user-friendly as possible.

Over 60% of applications were made on mobile devices. Applicants only had to upload their business registration, a relevant licence, and a recent photo showing their shopfront. The application

LKSF principle: Trust more, stress less

website was designed with great detail and thought, and the new platform embraced technology to serve the community in a considerate manner. Importantly, the "trust more" dimension respected the honesty of hard-working Hong Kong entrepreneurs caught in tough times not of their making.

Smart application of technology was a vital element. The Google Cloud Vision AI used optical character recognition (OCR) to process the images to fill in forms. Lucy Werner, Head of Google Cloud Hong Kong, explains the impact of using this technology, "It takes just five seconds for Google Cloud Vision AI to process the text in each image. Each application can be submitted within eight minutes and the Foundation was able to process over 43,000 applications within the first three weeks."

Businesses used to dealing with bureaucracy were thrilled. LKSF have received overwhelmingly positive feedback from applicants and trade associations - and the beneficiaries

themselves. More than 18,000 heartwarming messages were received by the Foundation from the owners and managers of supported businesses.

Over 28,000 businesses in Hong Kong were helped by this unique effort to support those buffeted by events beyond their control. The total amount awarded through grants was HK\$1.009 billion. 'Technology, Humanness and Trust' were the key elements in delivering this philanthropic programme quickly and efficiently. LKSF and their partners placed their trust in the people of Hong Kong, the applicants, and respected their integrity, honesty and genuine need, and delivered assistance and support where it was really needed.

The LKSF has chosen to support the SMEs of Hong Kong in their time of need while hoping that that need will pass and Hong Kong will return to its usual energetic, peaceful and prosperous state of affairs.

Special thanks to









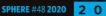


CONNECTION

3 HARMONISES THE WORLD

If telecommunications is the how, music is the why. People may think they love their phones, but what they love is the connections. Speaking to your mother, your children, your lover. It's the text from an old friend. And study after study tells us that people overwhelmingly choose to use their phones for music. Because music is how people connect.







he primacy of music in connecting people transcends cultures from Europe to Asia. **3** understands this fact at a fundamental level and uses

it to build bonds with current and potential customers from Ireland to Hong Kong to Indonesia. As Ann-Marie O'Brien, Campaign Manager for **3** Ireland explains, it is "all about those human connections made by music".

THE IRISH KNOW MUSIC

Irish musical genius is recognised around the world for its influence and popularity far above that expected of a population of just over 4.8 million people. The home island has created megastars with stunning range including U2, Thin Lizzy, Sinéad O'Connor, Enya, Westlife, Van Morrison and Boyzone. Ms O'Brien explains that music is "a shared passion for everyone here in Ireland". So it was natural for **3** Ireland to connect to its fellow Emerald Islanders through music. **3**, some years ago, took the bold move of committing to a long-term relationship with the island's largest music venue, **3** Arena, which was opened by U2. Through its loyalty programme **3** Plus, **3** Ireland's customers get access to tickets for the world's biggest and best acts 24 hours ahead of them being available to the general public. Given that the most popular concerts sell out in minutes, this is a huge leg-up for **3** customers. A short list of upcoming concerts ranges from film score composer Hans Zimmer to Grammy award winners The Chainsmokers to TV's sensational *RuPaul's Drag Race*.

Once onsite, **3** Ireland's customers have exclusive access to a selection of bars and lounges as well as unique brand experiences.

UNDER IRISH SKIES

3 Ireland also has a history of getting out of the arena to support the country's biggest and best music festivals: Electric Picnic and Longitude.

All the top acts go to 3 Arena.

Electric Picnic is the island's biggest music festival and **3** Ireland is a headline sponsor. In 2019, the **3** Made By Music stage was launched at Electric Picnic. Staying true to its Made By Music initiative, the stage hosted a line-up of the best Irish and international rising talents. **3** Ireland also gave festivalgoers the perfect place to chill out and charge up their phones at the Charge & Chill area in the main arena of the festival. Once again, **3** Plus loyalty programme customers benefited from being able to get almost unobtainable tickets through the **3** Plus app.





3 Ireland customers get preferential access to Ireland's hottest music festivals like Electric Picnic.

MADE BY MUSIC

Made By Music is the sole creation of **3** Ireland. Sponsorships are a great way to connect but Made By Music is the next level. The telecom operator took a brave and unconventional approach to bringing their music sponsorship to life. The intention was not to advertise the sponsorship, but rather to create an initiative that credibly contributed to the Irish music industry by bringing new Irish artists to the fore.

Old music promotion machines are breaking down as Internet piracy and social media platforms reshape the music industry. Small artists with an embryonic fan base need a boost to get to the next level. **3** Ireland has the audience and the connectivity between 2.2 million customers in the world's most music-loving nation, and Made By Music is the vehicle for that boost.

In 2018, **3** Ireland worked with industry experts to identify three Irish acts that had demonstrated talent, heart and attracted a nascent following. They were provided with support that would heighten their visibility and open them up to new audiences through the creation of three world-class music videos directed by some of the most renowned directors in the industry. These videos were released with a heavyweight campaign across digital and TV platforms. The intention was to get these artists' tracks



heard – and seen – by as many people as possible. Six and a half million views later: mission accomplished! The one of a kind initiative didn't go unnoticed by the Irish media, and generated over €1.6million worth of PR coverage. In a population of just 4.8 million people, these figures stand testament to the positive response of the Irish public to Made By Music.

"It is all about those human connections made by music."

Ann-Marie O'Brien Campaign Manager, **3** Ireland

MUSICAL UPSTREAM

In the second wave of Made By Music, launched in 2019, the theme was collaboration, a global trend in music making. Think Drake and Rihanna (*Work*), Alessia Cara and Zedd (*Stay*), and Justin Bieber and, well, everyone. Made By Music allowed up-andcoming musicians to decide who they would like to work with, encouraged collaboration to produce original songs and supported world-class video production and distribution.

Irish ingénues Soulé, Elaine Mai and Sorcha Richardson made up one such grouping and produced a smash hit song and video, *Butterflies*. David Kitt, Fehdah and Kean Kavanagh saw their combo song, *Follow the Sound*, go viral with over 426,000 streams on Spotify. The two videos have together been seen over 4.5 million times on YouTube, with another 3.3 million video views streamed to other platforms including Facebook, Instagram and Twitter. In total, 24.4 million **3** Ireland linked impressions were delivered, providing a global boost to these artists.

MUSIC MATTERS

Made By Music has been a huge hit for **3** Ireland. From sponsorship to playing a direct role in supporting music, customers notice. Combined campaigns have generated over €3.5 million in PR coverage – and that figure is climbing.

Independent research shows that customers aware of **3** Ireland's supportive role in Irish music feel more connected to the brand, and hence more likely to stay with the network – so music serves as the perfect retention tool. And it is the reason why **3** Ireland ranks as the No. 1 brand associated with music in the country. When it comes to connecting to the Irish through the music that is in their hearts and souls, no one does it better than **3**.





Hins Cheung's appetite for music, food and life harmonises with the **3** brand and its customers (left). **3**Supreme patrons connect over Michelin-chef meals and world-class singers at Cheung's baroque dinner and music club (right).

HONG KONG HEART-THROB

Hong Kong chooses to connect to its preferred customers through a special programme similar to Ireland's **3** Plus: the **3**Supreme. The big difference is that **3**Supreme focuses on one Hong Kong hitmaker with a range of dimensions to his persona that connects with Hongkongers – a plus plus performance!

Hins Cheung is a phenomenon whose musical talent enlivens **3** Hong Kong's brand message in two TV ads. One ad sees him and his clones roaming the world with his **3** Getaway travel package featuring his hit song with new lyrics. The second has him showing the life of **3**Supreme members, with their elite status giving customers access to his trademark restaurant.

Music goes with the other great Cantonese passion - food. At Junon, Cheung's baroque dinner and music club, **3**Supreme's top customers snapped up limited tickets to dine and enjoy performances with legendary bossa nova singer Lisa Ono. This **3**Supreme good life was enjoyed over a menu prepared by Michelin three-starred chef Bruno Ménard.

3Supreme also includes a VIP service. Musical brand ambassador Cheung was game to try the job of 3 staff, dealing with 3Supreme customers and giving them the royal treatment in a light-hearted video.

This association with the baby-faced star and his diverse fan base, strengthens the **3** brand with young consumers and hip, mature elite customers. Post-paid churn rates have improved year-on-year in a highly competitive market, a tangible result for this marketing alignment.

YOUNG AND STRONG INDONESIA

On the other side of the world, **3** Indonesia has its heart set on music and reaching the youth of a young and huge country.

Where Ireland is an intimate hothouse of creative genius, Indonesia is massive. It is the world's fourth most populous country with over 270 million citizens. As of 2017, the median age was just over 30 years old. That means that more than half the country, or over 135 million people, is under 30 years of age. For the young people of Indonesia, music, connections and media figure large in their lives.

3 Indonesia set out to harness the creativity and energy of this demographic through artistic leaders in high schools and universities. This demographic may have limited income, but they are heavy users of Internet data and prioritise it in their spending decisions. They are proud product advocates who influence up-and-coming consumers and even lead their elders in decision-making.

A series of nationwide efforts has brought **3** into the hearts and lives of young people through two connected campaigns. The Sound of Tri music competition and its sister campaign, the Creator Reborn series, lead to a one-day creative extravaganza, Bima Day. 3 Indonesia harnesses the creativity and energy of Indonesia's youth through artistic leaders in high schools and universities.



The Sound of Tri winners come from all over the archipelago nation of Indonesia and reflect the diversity of its youth.





Bima Day is where it all comes together for 12,000 Indonesian youths (right). It also unleashes the creative spirit of a young nation through modern and timeless art forms (left).

THE SOUND OF TRI

Since 2017, the Sound of Tri has brought Indonesian musical talent to the fore through live music events across the country. That year, 32 locations hosted events in 13 cities. Over 200 independent bands entered the contest. From this huge selection, 10 songwriters were selected to receive a big boost from **3** Indonesia. They were able to work with **3**-sponsored professional music producers to bring their work to 'industry-level quality'.

Then, the biggest acts in Indonesia were invited to play alongside the Sound of Tri-discovered stars at two huge concerts in the nation's capital of Jakarta and the East Javan city of Malang. Both their solo originals and collaborations were showcased. The pairings brought together the established stars' audiences with the energy of the Sound of Tri winners. The top 10 were promoted across **3** Indonesia's platforms, and this included sales of their songs on the **3** app, bima+. This was a winner for the artists who received download income shared with **3** Indonesia.

From the 10, the emerging duo of Manjakani were chosen as **3** ambassadors. 'Manjakani' is a plant known to Indonesians for its healing power – and now a musical duo's acoustic guitars and soulful vocals that heal people's hearts. Rejecting flashy looks and visuals, they dress simply and keep the focus on the music; music tells their story. Together, they lead **3** Indonesia's ongoing nationwide #SiapaTakut (#BringItOn) campaign encouraging young Indonesians to find their inner creativity and to let it out without fear. This has led to **3** Indonesia commanding a top spot as a brand leader supporting Indonesian musical aspirations into the next decade.

The nationwide sourcing of new bands is important. The industry has been perceived as harder to penetrate for acts farther away from Jakarta. **3** Indonesia wanted to support all Indonesian youth and cast a wide net. "Although they originate far from the capital, these bands deserve more exposure. Together with Tri, they are given the opportunity to be known by more music lovers," said Dolly Susanto, **3** Indonesia's Chief Commercial Officer.

BIGGER, BETTER, INTEGRATED

From there, the Sound of Tri efforts have been supported by a range of **3** Indonesia initiatives that work in a complementary fashion.

The bima+ app is **3** Indonesia's flagship app and digital platform. The music from the Sound of Tri Festival winners is hosted, promoted and streamed to over 29 million users of the app. During the contest, those using the app can vote for their favourite artists.

3 - WHERE CREATIVE AMBITIONS ARE BORN

The Creator Reborn series is another major platform in **3** Indonesia's support of the creative spirit of Indonesia's enormous youth cohort. It started with the #AmbisikuBikinBangga (My Ambition is Proud) KampusKu roadshow to 25 universities across the country. Special data packages enabled students to access media to help them participate in the major elements of the Creator Reborn competitions: short movie, EDM (electronic dance music), and e-Sport.

The EDM competition, a popular musical format among young people, saw 95 aspiring DJs step up. While in the past DJs on radio just selected songs to play, modern DJs use the whole universe of sampled and original sounds to create new melodies and rhythms, often with a guest vocalist overlay. Around the world, top DJs command eight-figure salaries (in US\$) and **3** Indonesia is helping to elevate the best of Indonesia in this genre.

Over 12,000 people participated in the competitions through a variety of media, all with **3** prominently featured as the supporter of Indonesian youth. Running from December 2018 to February 2019, all eyes were on the finalists who came together in Jakarta for the climax at Bima Day.

"Together with Tri, the bands are given the opportunity to be known by more music lovers."

Dolly Susanto Chief Commercial Officer, **3** Indonesia

IF YOU GO INTO THE ELECTRIC WOODS TODAY

Bima Day brought it all together as a ginormous one-day, 12,000-person festival in the arts city of Bandung. Bandung has a unique 'distro' culture of artists and entrepreneurs who prize personal expression and craftsmanship over mass-produced products and media, making it the perfect place for the designers of Creator Reborn. The Sound of Tri stages featured a popular Electrical Forest theme illuminated with lasers, LEDs and carefully crafted designer lighting. The Sound of Tri winners took the stage along with Indonesia's biggest acts like Sheila on 7, Padi Reborn, Elephant Kind, DJ Dipha Barus, and DJ Winky. The nation noticed and Bima Day generated a huge social media buzz and commanded the heights of social media, trending for a 24-hour cycle.

MORE MORE MORE

The success of Bima Day has shown **3** Indonesia's commitment and ability to connect with and promote the artistic spirit in young Indonesians. It followed up with more special packages for young creatives including the AMIPro (Anak Muda Indonesia) starter pack for young Indonesians, a data package which gives unlimited access to YouTube and Viu, inspirational sources for working artists.

Like in Ireland, the impact is real and measurable. As described above, the social media buzz drove bima+ downloads, leading up to and during Bima Day, to 29 million users. Brand awareness increased 3% year-on-year. Music downloads through the app have been launched in recent years, generating their own revenue stream.

MUSIC CONNECTS

Music is the language of the heart that binds and connects us all. Across Asia and Europe, **3** has done much more than just deliver music, something which every smartphone and provider does through third-party apps.

The telecom group has shown that it cares about that language. It puts its command of communications behind the dreams and aspirations of artists that its customers want to see supported to thrive on the national and global level. Supporters of **3** know that it is supporting the musicians taking risks to create something beautiful, meaningful and powerful. When the spirit moves the musical soul, **3** stands with musicians, giving them a stage to reach the world.



The #AmbisikuBikinBangga campaign provides the tools for creativity to flourish among young **3** users.

The Sound of Tri stage grows an Electrical Forest where lasers, LEDs and designer lighting dazzle.



