Norway-ASEAN Energy Workshop

Olympic Optimism on the Korean Peninsula Norway’s

Newest Luxury Export to Asia: Sea Cucumbers

Norway-Asia Business Summit 2018
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Since its beginnings in 1926 in Sandefjord, Norway, Jotun has grown into a leading worldwide brand today, attaining numerous global recognitions along the way. With the amount of research and dedication poured into every drop of Jotun paint, no wonder many of the world’s most iconic buildings, including the Eiffel Tower in Paris, as well as millions of beautiful homes, are painted by Jotun.
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Our Sincere Thanks!

The Norwegian Business Association (Singapore) and Team Norway in Singapore sincerely once again thank all delegates, speakers and sponsors that contributed towards ensuring the success of Norway Asia Business Summit 2018.

We believe it’s important to ensure that we keep the tradition with organising Norway Asia Business Summit alive and current as an annual event, given the constant and many changes we are witnessing in Asia on daily basis. The economic growth, changing demographics, improved spending power and very rapid digitalisation in Asia represents more opportunities now than ever before, this relates to Norwegian businesses currently in Asia and not least for the many startups and investors from Norway planning to enter Asia and the fastest growing economic regions on this planet.

At the Norway-Asia Business Summit 2018 we tried to unwrap and uncover the many political and economic driving forces that challenge status quo in Asia and what to possibly expect in the future. The lively debate at the summit represented the complexity, diversity, challenges, opportunities and power structure agendas in the region it’s important to have in mind when considering where the best growth traction the region can be secured.

We thank all the other Norwegian Business Associations in Asia for contributing and being present at the summit.

Together as Team Norway Asia we stand stronger, we value the importance of positive synergies, communication and cooperation across borders and between the many active Norwegian Business Associations in Asia.

Norwegian Business Association China will stage the next Norway-Asia Business Summit in Shanghai from 24 to 26 October 2019. Put the dates firmly in your calendar and please support and participate.

Nordic Innovation House have setups in San Francisco and New York, when they now plan for establishment in Singapore and Hong Kong it signals and reflect the growing importance of Asian markets within the global innovation ecosystems. The Norwegian owned businesses in Asia welcome the initiative as these establishments will assist in our work with putting the opportunities in Asia even more firmly on the roadmap for investors and organisations in Norway contemplating entry to Asian markets.

Leonard O. Stornes
President
Norwegian Business Association (Singapore)
The seventh Norway-Asia Business Summit in Singapore highlighted how technology and innovation has created more opportunities for Norwegian businesses in Asia. 

**Innovation Creates New Opportunities**

However, this exciting future can only be fully realised after some notable challenges have been overcome. This year marked 20 years since the first Norway-Asia Business Summit took place.

H.E. Ms Anita Nergaard, Ambassador of Norway to Singapore, pointed out that in a shifting landscape, a meeting place like the Summit is more important than ever before during her welcoming remarks.

No challenge looms quite as large as trade at the moment. While some countries ramp up trade war rhetoric, H.E. Mr Per Sandberg, Minister of Fisheries, the first speaker at this year’s summit, strongly asserted Norway’s commitment to global free trade, a position also held by host country Singapore.

“Norway and the ETFA have four free trade agreements in Asia. These are with Singapore, Hong Kong, South Korea and the Philippines. We are also in negotiations with Malaysia, Vietnam, India and China,” Mr Sandberg said. “We believe free trade agreements promote Norwegian-Asian relations.”

More than 500 Norwegian companies currently operate in Asia. Mr Sandberg pointed out there is room for growth and the partnership between the two is only in its initial stages.

H.E. Dr Koh Poh Koon, Senior Minister of State, Ministry of Trade and Industry and National Development, Singapore, followed Mr. Sandberg. He noted that there were lots of opportunities available for Norwegian companies throughout ASEAN and expressed optimism regarding further integration of the regional economies.

Mr Sandberg and Dr Koh were then joined by Mr Håkon Bruaset Kjøl, Senior Vice President, Head of Public & Regulatory Affairs at Telenor, for a group discussion that touched on some key themes.

“ASEAN has made tremendous progress. It will benefit Norwegian businesses to be invested in the development and progress of Asia,” Mr Kjøl proclaimed.

Up next was a panel on the economic and political outlook in Asia. There was a general bullishness from all three speakers when it came to regional economy. A noticeable decoupling of politics and business in several ASEAN countries, a still expanding middle class and steady GDP growth were among the reasons for the optimism.

“A new investment cycle is beginning in Southeast Asia. Government spending on infrastructure projects is up. This is boosting business confidence and encouraging more foreign investment in the region,” Mr Manu Bhaskaran, Partner at Centennial Group International and Founding CEO, Centennial Asia Advisors, said.

Attendees were then introduced to the elephant in the room, or as Presenter Mr Teymoor Nabili called it, ‘the dragon in the corner’, China. Ocean Shipping Consultants Director, Mr Jason Chiang, CFA, provided insights on China’s ambitious Belt and Road Initiative. This would not be the last time the topic of China came up at the Norway-Asia Business Summit and by the time it was all over, the dragon in the corner would be standing on centre stage.

Digitalisation was the focus after
lunch with exciting innovations, such as autonomous ships, and challenges, including industry disruption, in the spotlight. Mr Andreas Sohmen-Pao, Chairman of both BW Group and the Singapore Maritime Foundation, got things underway by sharing his experience with digitalisation from the maritime perspective.

“When we started to digitalise, the first thing that we needed to do was find a starting point. It’s impossible to do everything at once. We also needed to decide on who we would partner with. Even when focusing on one area, it wasn’t possible to do everything in-house,” Mr Sohmen-Pao explained.

Digitalisation can provide new opportunities for other industries outside of the technology sphere. Mr Trung Minh Tran, Head of Digital LCI at DNB Bank explained how it is has changed corporate banking and forced DNB to move away from a traditional approach. He then joined a panel with representatives from Telenor, IBM Singapore and Digital Norway to discuss how incumbent firms can survive the change digitalisation is bringing.

The last session of day one was all about the digital transformation happening in the shipping industry. Chief Executive Officer Digital Solutions at DNV GL, Ms Elisabeth Torstad, kicked things off.

“The shipping industry is facing troubled waters. Oversupply, low freight rates and competition are all reality. Now is the time to look to the future and find ways to be more profitable,” she stated.

The next speaker, Mr Nakul Malhotra, Vice President Technical Solutions and Marketing at Wilhelmsen Group, laid out how it is possible to digitise using a process-driven solution.

While many firms in the shipping industry opt to use data to make digitalisation decisions, Wilhelmsen realised it was better off using a process-centric method to utilise technology.

“No matter how firms choose to embrace digitalisation, the role of the ship can’t be overlooked. Mr Morten Lind-Olsen, Dualog Chief Executive Officer, pointed out that shipboard Internet is still a relatively new feature with bandwidth speeds on land growing significantly faster than at sea.

“This isn’t the only hurdle facing firms in an era of digitalisation. The legal ramifications of technology and innovation will also need to be addressed sooner rather than later.”

“We have two worlds colliding: tradition versus digitalisation. This will affect maritime law as well as contracts and insurance. There are some big questions. Digitalisation will require changes to International Maritime Organization framework.” Mr Christian Ellingsen, Partner, Simonsen Vogt Wig Law Firm, reported.

While most of day one was dedicated to the business heavyweights, day two would focus on startups. Ventura Capital Managing Partner, Mr Stefan Jung, got things started by providing a background on what he looks for when investing in startups. The topic of China would then be broached again with Mr Jon Eivind Sto, Managing Partner at nHack Accelerator, taking the stage.

“Norway needs to scale up globally. It needs to bring its advanced technology and knowledge to the world,” he urged. “China is the world’s largest e-commerce market. It also has the talent. However, if you are going to succeed in China, you need to be in China.”

Building a startup, whether in China or elsewhere in Southeast Asia, isn’t as simple as having a great idea. Mr William Klippgen, Cocoon Capital Managing Partner and veteran Southeast Asian investor, noted that a record amount of funding was raised last year in Singapore. The ability to raise capital, along with its strategic connections to ASEAN, makes it an ideal place to get started.

“They say the 21st century is Asia’s century. You can already see it becoming a centre of innovation and industry. It’s likely other regions will be playing catch up. Southeast Asia really is a good place to be a part of something.” Mr Andreas Ehn, Partner at Approach and former Spotify Chief Technology Officer, said.

A panel on building startups in Southeast Asia with a European perspective addressed why people would be drawn to something where failure is just as likely as success.

“I founded a startup since it was a chance to build something that was my own. I could create something that was mine,” Ms Nidhi Gupta, Co-founder and CEO of Portcast, said. “The key for startups is iteration. You try, fail and learn. That is the only way to find success.”

But can Norwegian startups really change the game, especially on the global level? That was the question the final panel at this year’s Norway-Asia Business Summit addressed.

“You can now just plug and play when starting a business,” Mr Fridtjof Berge, Co-Founder and Chief Operating Officer at Antler Innovation stated. “It is easier to get going and cheaper to enter the startup game now than it was a few years ago.”

Just because it is easy to create a startup doesn’t mean it is something everyone should do. In fact, some noted that startup fever might be getting a bit out of hand.

“Last year, there were more startups created than babies born in Norway. We don’t need to create more startups. We just need to go out into the world more,” Mr Pål Thorvik Næss, Director of Entrepreneurs and Startups, Innovation Norway, stated.

After the final panel, Mr Ole Høyes, Regional Director Asia at Innovation Norway, provided some reflections on day two. It was then revealed to the audience the Norway-Asia Business Summit 2019 will be held in Shanghai. This marks another step toward improving relations between Norway and China.

“China is now open to Norway after years of cold relations. This shift offers new opportunities and adjusted strategies for Norwegian businesses. We invite you all to come to Shanghai next year,” Jon Eivind Sto concluded.

Above left: NBAS President Mr Leonard Stornes with Norway’s Minister of Fisheries, H.E. Mr Per Sandberg, Singapore’s Senior Minister of State at the Ministry of Trade and Industry and National Development, Dr Koh Poh Koon and Norway’s Ambassador to Singapore, H.E. Ms Anita Nergaard. Above: One of the many inspiring panel discussions at the 2018 summit was this discussion on building successful startups in Asia with a European perspective moderated by Mr William Klippgen of Cocoon Capital.
Norwegian seafood exports hit record highs both in value and volume last year. This is expected to grow even further in 2018, but there is more to the industry than the final product.

Fish, Free Trade and Business Potential

Norwegian seafood remains in demand from global consumers with the country exporting 2.6 million tonnes, worth a total of NOK 94.5 billion, in 2017.

H.E. Mr Per Sandberg, Norway’s Minister of Fisheries, predicts that fishing exports will continue to grow for the foreseeable future.

“This year we will hopefully see an export value of NOK 100 billion when it comes to seafood,” Mr Sandberg explains. “In 2050, it will be NOK 500-600 billion higher than the oil and gas sector. This growth is good, but it presents challenges too. We must get more value out of each fish and extract more value out from the resources.”

And while seafood remains a vital cog for Norway’s economy, there is more to it than simply the fish as an end product. Throughout this year’s Norway-Asia Business Summit, the role of digitalisation in all industries was mentioned. Fishing and aquaculture are not immune from its influence. In fact, it is an area where the country can use its knowledge to establish itself as a global leader.

“Seafood is important. It will always be important for the economy and exports of Norway, but it is not the only thing. The value of knowledge, management and research, in both fishing and aquaculture, is important,” Mr Sandberg reports. “But the value of this is zero if you don’t share it. For some countries, these three things from Norway are more important than the actual fish.”

Norway exported 539,000 tonnes of seafood to Asia in 2017. The total value of the exports was worth NOK 18.7 billion, an increase of eight percent from 2016. Demand for fishing exports from Asia will remain steady, but there is potential beyond this for the industry.

“When it comes to Asia, there is still big potential for exporting seafood. It is not just trout and salmon, but all species,” Mr Sandberg says. “There is also a lot of potential to export fishing technology and fishing management knowledge to Asia. It is more than seafood. The end product is very important to the region, but it is not everything. In some other markets, it is only about technology and knowledge. In regards to Asia, Norway can export fish, technology and knowledge.”

The Minister believes the partnership between Asia and Norway is very important when it comes to developing new technology and innovation. This is for both the seafood industry as well as other sectors.

“I can see so much potential in so many areas. Seafood goes first, but then everything else can follow this,” Mr Sandberg notes. “The technology. The knowledge. All of this will help the partnership between Norway and Asia grow.”

The ocean continues to play a big role in Norway’s economy. According to Mr Sandberg, ocean industries account
for more than 70 percent of the country’s export earnings, but it is also under pressure. The Ocean Economy in 2030, a report from the OECD, noted that the ocean economy has room to grow, but how this happens will be important.

Future growth depends on our ability to make and take from the ocean. We believe in blue growth the green way. It must be done in a sustainable and responsible way,” Mr Sandberg says. “The best way to protect the ocean is through responsible use. We share this through our policies and engaging with others.”

Big potential for the small firms

One of the key takeaways from this year’s Summit was the fact that expanding into Asia was no longer limited to Norway’s large corporations. Thanks to digitalisation, smaller Norwegian firms are now able to find opportunities in Asia and elsewhere in the world.

These opportunities aren’t limited to the fishing or shipping industries. The path, which has been travelled by large companies, is now accessible to everyone.

“Our big companies, such as Statoil and Telenor, have become global leaders and their expertise has opened new markets to Norwegian small and mid-sized businesses,” Mr Sandberg states. “With big Norwegian companies already operating in Southeast Asia, it makes it easier for others to come in.”

The spirit of cooperation between both big companies and smaller ones in Norway is another important part of the process. Small and mid-sized companies can look to Innovation Norway, the local embassies and businesses already based in Asia for support.

“There are no closed doors. Research, government and business, we all work together. This makes us unique and helps small and mid-sized companies go abroad,” Mr Sandberg explains. “The potential is huge from small and middle-sized companies. The opportunity is now there for them to take advantage of.”

Additionally, GIEK and Export Credit Norway are helping establish more Norwegian companies abroad. Mr Sandberg points out that GIEK, the Norwegian export credit guarantee agency, can not only guarantee financing for the exporting of technology or products, but services as well. This is something the Minister hopes more businesses utilise in the future.

Trade looms

Trade loomed large at the Norway-Asia Business Summit. Both Norway and host country Singapore are strong proponents of free trade. However, the continuing sabre rattling over trade between the US and China has pushed the issue to the forefront.

“Today, the shadow of protectionism is looming over world trade. It can lead to a negative spiral with trade barriers being put up from several countries. Protectionism comes at a very high cost,” Mr Sandberg details. “Norway has a strong commitment to free global trade as well as international cooperation and peace.”

At home, Norway is looking for ways to improve market access with its biggest trading partner, the European Union.

“We don’t even have free trade with the EU and they are our biggest trading partner,” Mr Sandberg notes. “There are still some challenges and we are working on them to remove these trade barriers. At the moment the EU can export anything to Norway for free when it comes to fish and seafood. When we export these products to Europe, we have to pay taxes.”

In Asia, Norway continues to work on creating free trade agreements via the European Free Trade Association (EFTA). Agreements are already in place with Singapore, Korea, Hong Kong and the Philippines. The EFTA is currently conducting negotiations with Malaysia, Indonesia and Vietnam to set up agreements. Norway is in bilateral negotiations on a free trade agreement with China.

“It takes a lot of time to reach a trade agreement and talks are progressing with Indonesia, Malaysia and Vietnam. We’ve been working on these for years and it is a lot of work before reaching an agreement,” Mr Sandberg points out. “I hope with the ASEAN, Singapore can be a partner for us in the region. It will make things smoother and more effective. We believe our agreement with them is beneficial for both of us.”

Ultimately, Norway remains committed to free trade even in light of global events. This is a stance Singapore also holds and the pair is hopeful other countries don’t sacrifice long-term prosperity for the short-term benefits protectionism can bring.

“All countries should work on free trade. Free trade is important for us and for the world,” Mr Sandberg.

Facts

- Norway exported 359,000 tonnes of seafood worth NOK 18.7 billion to Asia in 2017.
- Demand from Asia for Norwegian seafood exports is expected to grow steadily in the years to come.
- There is an opportunity for Norwegian companies to export fishing technology and fishing management knowledge to Asia.
- GIEK can guarantee export financing for the exporting technology, products and services.
- Ocean industries account for more than 70 percent of the country’s export earnings.
- Three whitepapers on ocean sustainability were produced by Norwegian ministers last year.
- The success of Norwegian businesses in Asia have made it easier for small and mid-sized firms to expand into the region.
- Norway is part of the European Free Trade Association that has agreements in Asia with Singapore, Hong Kong, Korea and the Philippines.
- Discussions are taking place between the EFTA and three other ASEAN countries, Indonesia, Malaysia, and Vietnam, on free trade arrangements.
- Norway is in bilateral negotiations on a free trade agreement with China.
The future of the maritime industry will be shaped by data. It may only be in its infancy, but digitalisation efforts will improve shipping in ways many would have never thought possible.

**Data Powered Future**

Cheyenne Hollis

Data is indeed revolutionising the shipping industry and it is enabling us to connect hardware with services, people and other data streams to build better ways of doing business.

This could, for example, involve the use of digital twins to enhance design, construction and operation. This could involve predictive maintenance, increased fuel efficiency and faster emergency response,” Ms Elisabeth Tørstad, Chief Executive Officer Digital Solutions at DNV GL, said. “But it is also about using data to implement better planning and better supply chain management, with less time at sea in ballast and more time actually creating value for customers.”

Perhaps the most exciting aspect of data in the shipping industry is that the potential it holds is only starting to be realised. Once more trust is established in how data is generated, collected and stored, it will become even more valuable to companies.

“We will see a development towards richer instrumentation of systems and structures onboard, more sophisticated software-based control systems, improved connectivity and increased use of big data. And with this, trust becomes increasingly important,” Ms Tørstad stated. “We have to be able to trust the sensors that generate data, the way data is stored, the people who access the data and the algorithms that make sense of the data.”

She added that once trust in data is fully established, machine learning could offer huge advantages, such as increased safety levels, more up-time and even reduced maintenance cost.

For DNV GL, dealing with data is nothing new. The company has acted as a custodian for large amounts of industry data since it was established in 1864. Understanding the growing importance of both data and digitalisation as a whole, DNV GL created a Digital Solutions organisation which began operations in 2018.

The new outfit was created to help DNV GL leverage the full potential of an increasingly digital world and better capture the opportunities in areas such as data sharing, advanced analytics, automation and machine learning. It was structured into five main areas: software solutions solving technical and operational challenges related to industrial operations, data management and quality services, cyber security services, custom made digital services and the company’s data platform, Veracity.

The latter innovation aims to help maritime firms unlock, qualify, combine and prepare data for analytics and benchmarking.

“Veracity is a cloud based data management platform facilitating secure data sharing and combining data sets for big data analytics. Our Veracity Data Platform is a key enabler for unlocking the value embedded in data,” Ms Tørstad pointed out.

Veracity, along with the other four areas of DNV GL’s Digital Solutions organisation, consists of digital industry experts delivering data smart solutions to assist customers in their digital transformation.

“This transformation holds huge opportunities for the industry, including the maritime sector, to enhance business performance, re-design business models and engage more effectively with stakeholders,” Ms Tørstad explained.

As Ms Tørstad noted, digitalisation and the use of data will offer many opportunities to shipping companies in the coming decades, including safety improvements and cost saving benefits to owners. Those who don’t act risk missing out on these and other benefits.

“By not adopting new technologies, maritime companies risk missing out on the opportunities and benefits that digitalisation brings,” Ms Tørstad said. “We also believe that stakeholders will increasingly demand access to data, as we see with the new EU Monitoring, Reporting and Verification (MRV) regulation for example.”

Charting a Future Course

Autonomous ships were among the most exciting topics at the Norway-

PHOTO: NBAS/ALEX JANU PHOTOGRAPHY

CHEYENNE HOLLIS
Asia Business 2018. Ms Tørstad pointed this form of digitalisation is coming to the shipping industry sooner rather than later.

“I believe that autonomous ships will become a reality in short sea and coastal shipping soon. This will feature specialised ships trading in national waters and within one jurisdiction, like we see with the announced unmanned ship Yara Birkeland that was launched three years ago,” Ms Tørstad stated. “Many steps will be needed before fully unmanned ships can become a reality in deep sea shipping.”

The benefits of autonomous ships are numerous. They will greatly increase safety and operational performance through smart control and support systems. Meanwhile, lower operational costs due to reduced fuel consumption and crew costs are among the economical considerations.

And this isn’t the only change coming to the maritime industry. Earlier this year, the International Maritime Organisation (IMO) adopted a strategy to reduce the shipping industry’s greenhouse gas emissions by 50 percent before 2050.

The push towards decarbonisation will see more and more ships move away from oil in the coming years. This presents both challenges as well as opportunities with the use of low-carbon alternatives likely to increase significantly.

“The continuing pressure to reduce emissions to air from ships will have a large impact on the shipping industry going forward, most particularly in regards to the choice of fuels,” Ms Tørstad said. “In our 2017 Maritime Energy Transition Outlook, we concluded that oil will no longer be the overwhelming fuel choice for trading vessels in 2050. Natural gas will step up to become the second-most widely used fuel in the industry with new low-carbon alternatives, such as electricity and biofuels, also likely to increase. These low-carbon alternatives could supply nearly a quarter of the fleet in 2050.”

Facts
- DNV GL’s Digital Solutions organisation began operations at the start of 2018
- The new organisation has been set up with five main areas to help it capture the new opportunities data and digitalisation brings
- The company has been dealing with data since it was established in 1864
- Veracity, a cloud-based data platform, was launched to help shipping firms unlock the value in data
- Autonomous ships in short sea and coastal shipping will soon be a reality with deep sea ships coming later
- In April, the IMO adopted a strategy to reduce the shipping industry’s greenhouse gas emissions by 50 percent by 2050

Like other industries, shipping will need to embrace technology. Firms that don’t adopt new technology risk becoming obsolete.

Steering into Digital Waters

Mr Andreas Sohmen-Pao, Chairman of BW Group and the Singapore Maritime Foundation admits that this is true, but it risks becoming shallow truisms.

“We must understand where new technology can best be applied,” Mr Sohmen-Pao noted. “It is important when talking about digitalisation to find a starting point. One issue to tackle or a specific focus that can be addressed. You can’t do everything at the same time without ending up spreading yourself too thin. With one area in mind, you must then decide what can be done in-house and what must be outsourced.”

Mr Sohmen-Pao pointed to how BW Group has invested in Alpha Ori, a maritime digital solutions provider, to create a team that combines ship management experience and good technology skills. BW Group had its in-house team focus on upgrading legacy IT systems while empowering Alpha Ori to do all blue-sky thinking.

“We find that almost everything will end up needing a partner or partners. In most cases, we just do not have the ability or capacity to do things entirely in-house,” Mr Sohmen-Pao said. “And even if we do, there are other issues that can arise when trying to do everything on our own.”

This is just one of the many challenges firms in the maritime industry will need to address before adopting digitalisation. “Another challenge is deciding if you should use centralised control or trust front line,” Mr Sohmen-Pao explains. “We like the idea of centralised control, but we also need input from the front line teams. We need to strike the right balance between these two.”

With more monitoring and tasks now able to be done centrally, this creates another problem in the form of skill erosion. In some cases digitalisation will make certain skills obsolete, but that doesn’t mean they are unnecessary. “We must avoid erosion of skills so if a computer or GPS fails, people are trained to respond,” Mr Sohmen-Pao states. “If no one knows how to guide a ship without GPS, they will be in trouble if the system fails.”

Even with these challenges, Mr Sohmen-Pao believes this is one of the most exciting times in the history of the maritime industry. “The most exciting development in the maritime industry is self-correcting ships or autonomous ships. These are going to disrupt the industry. There is some concern about this. It is scary to think about the loss of jobs that will come with this, but it will also benefit the industry a great deal,” Mr Sohmen-Pao concludes.
Mr Morten Lind-Olsen, CEO at Dualog, a maritime digital platform, predicts more companies in the shipping industry will look to leverage shipboard Internet in the years to come.

“A ship’s crew was the main driver of on-board Internet in the first place. Today, Internet on ships is more a business-driven tool,” Mr Lind-Olsen says. “Companies now get the priority of bandwidth. Firms have realised it can be leveraged for improved business and vessel performance.”

The evolution of Internet-equipped ships has been relatively slow when compared to other technological innovations. However, more ships have become Internet enabled during the past decade. And while there is increased shipboard connectivity these days, the nature of satellite communication means Internet speeds remain relatively slow compared to the land.

“If you go back 10 years ago, you would hardly find any Internet aboard ships because of bandwidth problems. Internet has slowly arrived since then, but it continues to be limited by bandwidth,” Mr Lind-Olsen explains. “This isn’t going to change at the same pace as it has on the shore side.”

Bandwidth growth is increasing at an exponential rate, while growth at sea has been quite linear over the past 15 years. Many people are not aware of this large discrepancy. With a majority of the world’s population on land, there hasn’t been a surge of investment to improve bandwidth at sea. Mr Lind-Olsen points out that investment in satellite technology remains predictable and will likely stay at the same levels in the coming years.

“Even if the gap between Internet speed at land and sea continues to grow, there are currently a lot of new initiatives that offer improved bandwidth at sea. Today most shipping companies can afford to have a reasonable Internet connectivity on board,” Mr Lind-Olsen notes.

However, limited bandwidth at sea isn’t necessarily the obstacle it appears to be on the surface. Dualog, amongst others, provide a digital platform that is designed to operate in a limited bandwidth environment to ensure firms can get the data transfer they need.

“I don’t see limited bandwidth as a constraint,” Mr Lind-Olsen says. “At Dualog, we have technology that has been developed over the years to operate with narrow bandwidth. There are usually multiple ways of communicating, one narrow and expensive and the other broader and affordable. The key is leveraging these to the best effect.”

The data collector
Maritime firms are more focused on Internet of Things (IoT), sensors and data collection now than they have been in the past. Ship owners want to take advantage of everything that can be done with data. But it means they have to be able to collect the information, an oftentimes overlooked aspect of the process.

“Dualog can act as the data collector. We are able to cover a missing
behind the thought being companies can now find value in data to improve their processes which ultimately provide cost savings. While only an analogy, it is one Dualog sees itself fitting into.

“If data is the new oil, then Dualog is the drill. You have to drill to get to the oil and this technology is an important part of the oil and gas industry. Similarly, a ship will have a large amount of data, but getting it from sea to shore can be a challenge. Our platform allows firms to access the data in a similar way a drill provides access to oil wells,” Mr Lind-Olsen muses.

Of course, the comparison has its limitations. For example, oil and gas industries have regulations in place for drilling that dictate what companies can and can’t do. This is still a work in progress when it comes to data.

“At the moment, there is a complete lack of standards, both technical and other measures, in collecting data. There is a lot of room for improvement here,” Mr Lind-Olsen says. “The data itself isn’t enough for most companies. It needs to be analysed and put together in a manner that can benefit the performance of the shipping industry.”

Dualog has a clear philosophy on working with customers, most of whom are focused on optimising data collection and sharing this information. The firm also understands the unique challenges currently facing the maritime industry when it comes to data.

“Some data is commercial data you need to own, but the business as a whole is now looking at consolidation. We want to create standards for the data itself, how it can be utilised and making it available on the shore side in the best possible manner,” Mr Lind-Olsen says. “We are not the analyser of the data and we will never do that. However, we can help present it in a manner that makes it easy to analyse.”

Long-term strategy

Dualog’s service extends beyond bandwidth optimisation and data collection. They are just elements of IT services and tools that can help with efficient vessel management. Mr Lind-Olsen believes IT in general is something many companies in the maritime industry don’t place enough emphasis on.

“The shipping industry need a long-term strategy for IT that includes the ships. This is not something that can be done on a 12-month budget,” Mr Lind-Olsen says. “While you don’t necessarily need a lot of IT competence aboard the ships themselves, they have to be involved in the strategy. Many companies are focusing on data, but not everyone understands the role an IT strategy plays. Data generation, collection and its ability to be analysed are all connected to a broader picture.”

Founded in 1994, Dualog now has offices in England, Denmark, and Singapore in addition to Norway. Similar to what the company recommends to its clients, Dualog has focused on a long-term strategy in terms of global growth and expansion. It has been supported by other Norwegian businesses on its journey.

“We don’t have the means of the big companies, but we have had a lot of cooperation thanks to Team Norway. They really deserve a lot of credit,” Mr Lind-Olsen notes. “The Norwegian community in both Singapore and Japan have laid the groundwork for us to succeed in Asia. It isn’t just talk. These entities have contributed greatly to the business community.”

Facts

- Dualog was founded in 1994 as a maritime digital platform that provided vessels with e-mail and Internet access at sea
- Today more than 9,000 ships are equipped with Dualog technology
- Shipboard Internet was first driven by crew demand before being leveraged for business usage
- Internet on ships was a rarity as recently as ten years ago.
- As significant investments to improve bandwidth at sea are being made, there is expected to happen much more business integration including the ships
- Shipping companies are focused on the potential of Internet of Things (IoT), sensors and data collection when vessels are at sea
- Currently there are no standards in place for collecting maritime data
- Having a long-term IT strategy in place for the fleet, can make it easier for shipping companies to retrieve and analyse data for improved performance.
Digitalisation is coming to the maritime industry. Shipping companies will need to determine how they embrace it. For many, data will be the primary driver.

A Process-centric Approach

CHEYENNE HOLLIS

However, Wilhelmsen Ships Service has found a process-centric approach to digitalisation can be just as effective. There is a lot of excitement in the shipping industry about the role data can have in terms of influencing digitalisation.

It will undoubtedly play its part in shaping the future for maritime, but it isn’t the only aspect that will drive digitalisation in the coming years.

“Data is important, but in order to translate data into knowledge and then usable intelligence for decision making, you need an intimate understanding of the business,” Mr Nakul Malhotra, Vice President of Technical Solutions and Marketing Marine Products at Wilhelmsen noted. “You need to know the mechanics of today’s processes and pain points and have the clarity of thought to identify relevant, tangible developments that can solve real problems, particularly at the transition phase.”

For Wilhelmsen, digitalisation was about co-creating with customer and supplier development partners and bridging the vast amounts of domain expertise that exists in the current ecosystem and combining it with new competencies that are increasingly showing relevance in the maritime context, according to Mr Malhotra.

“The ability to find practical solutions is when you get tomorrow’s solutions to today’s problems,” Mr Malhotra stated. “This doesn’t happen if you create a disconnect between the ground-level realities that exist in the interfaces or business processes that make this industry turn today to the new visions that are being put forward.”

This is what led Wilhelmsen to adopt a process-centric approach to digitalisation. While this approach doesn’t ignore the role data can have, it may be better suited to cope with the unique challenges of the shipping industry.

“Process-centric digitalisation is just a more focused approach that leverages useful data early on. I think this is all the more relevant for an industry dealing with huge disaggregated domain knowledge and legacy systems,” Mr Malhotra said. “We wanted to utilise the tremendous relationship we have with stakeholders across the value chain. So, rather than arbitrarily collecting millions of data points and dealing with the mammoth task of data cleansing without a clear outcome, we focused on specific process pain points that had relevance to our own business.”

However, not everyone is as bullish on process-centric digitalisation as Wilhelmsen. Opponents often cite a belief that the approach only has a limited scope and is creatively restrictive.

“The notion that a process-centric approach will only create minor improvements to current business models and not allow for creative approaches is a myopic one in my view. I believe that new and creative approaches to business stem, not from whether the decision is process or data centric, but rather from a pointed focus on the outcomes desired from any model,” Mr Malhotra contends.

He continues, “The focus on outcomes creates the invaluable question of whether we are spending too much
time, money or effort on developing things that will not have value going forward. Historically, we have used the term marketing myopia, where companies have defined their market in a short term and limited way and as a consequence get disrupted by new players. Organisations that constantly question themselves on what it is they really do and where do they really create value will stay relevant, particularly in the face of disruption.

Digitalisation is set to disrupt several areas within the maritime industry as has been the case in numerous other verticals. However, Mr Malhotra warns there will be winners and losers in the process as more firms journey down the digitalisation trail. It will be vital to take small, meaningful steps given the challenges many companies will face along the way.

“To see the level of discussion and intent taking place currently is great. But, I do get concerned when organisations talk about many visionary potentials, but with little or no tangible developments and make no steps towards the fulfilment of that promise,” Mr Malhotra said. “We cannot underestimate the cultural bridging that is required in this transition, particularly for large legacy organisations where competencies sit across multiple generations.”

As is the case with most technological advancements, the first movers and early adopters of digitalisation will need to cope with a steep learning curve that will ultimately provide benefits to others within the shipping industry. Those opting to wait before implementing digitalisation will face their own set of challenges when trying to replicate what has been done before them.

“There will be many who are trying to understand what this means for them and the steps needed to ensure future relevance which is part of the process. Those who expect to copy and paste solutions without linking them closely with specific business requirements and individual environments will fail,” Mr Malhotra explained. “It is those who ignore the fact that outcomes can be delivered faster, smarter and better with the new models digitalisation provides who will become irrelevant.”

Data is here to stay in the shipping industry, regardless of if a company takes a process- or data-centric approach to digitalisation. The industry as a whole will need to work together to ensure it can be used effectively.

“Being reliant on data is not a bad thing, however with it comes responsibilities and new challenges that need to be addressed. Ignoring these challenges is dangerous,” Mr Malhotra stated. “The industry needs to focus, collaborate and create an eco-system that is safe, simple and reliable in order to allow more stakeholders to participate and take steps to drive ambitions forward.”

Solving pain points with tech

Wilhelmsen’s process-centric digitalisation efforts are starting to pay dividends as the company rolls out practical solutions to old problems. One of these is the firm’s Smart Ropes system, a modern approach to eliminating the issues with mooring ropes that have been around as long as ships have been docking in ports.

These ropes are embedded with a sensor pack that provides real time information on a number of characteristics with the data sent to a base station located on deck. This enables a crew to moor their vessels safer than with traditional methods. More importantly, it is the type of innovation that data-driven digitalisation alone wouldn’t necessarily pick up on.

Another innovation Wilhelmsen is working on is the Automated Water Boiler Maintenance Solution. The technology uses sensors and communication modules to monitor and control parameters in the boilers used on board a vessel.

“With boiler repairs being expensive and crew competence, or demands on crew time, an ongoing challenge, this is an interesting solution to the problem of boiler water management,” Mr Malhotra described.

Last year, Wilhelmsen announced it was collaborating with the Ivaldi Group to look at in-port 3D printing opportunities for marine products and spare parts. Mr Malhotra noted the two partners, along with other stakeholders, are testing this at a pilot micro-factory in Singapore.

“3D printing has the potential to reduce lead times and freight costs for small non-critical parts that are taking up too much time and effort for procurement and technical teams to source,” Mr Malhotra said. “In addition, we have seen examples already of potential improvements in design and assemblies of small parts that increase efficiency or effectiveness of the components.”

Chatbots to cut down response times and augmented reality are two other areas Wilhelmsen is focusing on. The end goal with all of Wilhelmsen’s digitalisation efforts is to find real, tangible solutions to problems, many of which can’t be identified with data alone.

“As you can see we are looking at a number of technology areas with practical, relevant applications that either cut down response times, help boost effectiveness or solve specific issues on board vessels. There are a number of other developments in the pipeline,” Mr Malhotra pointed out.
Deciphering fact and fiction when it comes to China’s Belt and Road Initiative hasn’t always been easy since it burst onto the scene in 2013.

Belt and Road Reality

CHEYENNE HOLLIS

Work has begun on several projects, but there is more to the initiative than what is being built. The Belt and Road Initiative (BRI) is big. A report from credit ratings agency Fitch found USD 900 billion in projects were planned or underway with 68 countries having signed up.

This total has grabbed headlines, but it doesn’t mean the Chinese government has been spending recklessly on every single project out there. In fact, the approach from Beijing has been quite discerning.

“BRI isn’t as big or grandiose as people think, especially in places like Southeast Asia where there is already a lot of competition among foreign investors,” Mr Jason Chiang, Director at Royal HaskoningDHV explains. “There has been BRI investment, but for the government it has been about finding the right asset to invest in. The projects need to be commercially viable.”

The BRI is a development strategy that sees the Chinese government invest in seaports, airports, high-speed rail lines and other infrastructure projects as well as industrial parks and economic zones. He notes Beijing is acting as a financing gap provider that supports funding for the global infrastructure projects. This is no different than the financing provided by development banks, but this is one of the only similarities the funding methods have in common.

“The difference between BRI and other development banks financing infrastructure projects is that China is taking equity. Banks don’t do this,” Mr Chiang states. “Additionally, the construction contracts are given almost exclusively to Chinese firms giving them opportunities to work overseas that may have not been available in the past.”

Mr Chiang admits that the amount being invested through BRI is impressive, but China understands the risk infrastructure investment can bring, especially in some of the countries BRI includes.

President Xi Jinping officially launched BRI in hopes that the major infrastructure investment would boost trade and stimulate economic growth across Asia. It also allowed China to utilise its foreign-exchange reserves which have been mostly tied up in American government securities.

“BRI is a very outward looking movement. It has been a platform to unify funding and resources and invest these overseas,” Mr Chiang says. “From a public relations standpoint, this is a story the media likes. But apart from the headlines and marketing of it, China has been investing overseas before BRI.”

This investment was something Mr Chiang saw first hand working at Royal HaskoningDHV. The engineering consultancy was working with Chinese companies on overseas infrastructure projects years before the government officially unveiled the BRI. The firm has helped clients look at different investments and provided them with a better understanding of the benefits and challenges they bring.

“Companies in the private sector are and will continue to be active investors abroad. The BRI can provide access to the various private and public infrastructure projects and help connect everything, but it is probably getting too much credit,” Mr Chiang points out.

The reality of BRI is that it does not cover all Chinese infrastructure investment overseas. But it has opened the door for the country’s construction
companies, port operators and investment funds to expand their presence globally. A number of state-owned enterprises have benefited quite a bit from BRI, both directly and indirectly.

For example, China Communications Construction Company (CCCC) has built roads, bridges, seaports and railways in BRI regions, according to financial services firm Northern Trust. However, not all of these are BRI-related projects. Some of the USD 15.3 billion in overseas infrastructure contracts won by CCCC in the first half of 2017 have funding guaranteed by the China Development Bank and the Export-Import Bank of China, two major financiers of the BRI. Other contracts have no connection to the initiative apart from being in a country that is participating and have been financed from other sources.

BRI and Southeast Asia

With its proximity to China and growing markets, many believe Southeast Asia would be a prime candidate for BRI investment. The region is important from a strategic sense, but BRI investment won’t be at the same level as other areas such as Central Asia.

“There is already a lot of competition among foreign investors for projects in Southeast Asia,” Mr Chiang notes. “There will be BRI projects in the region, but there are other countries also actively investing in infrastructure projects such as Japan. The increased competition makes these projects less attractive.”

Among the most notable BRI projects in the region will be high-speed rail lines that are going to provide a connection from Southeast Asia to China. Work on the rail links has already begun. Mr Chiang adds that the financing for the projects is there and with Chinese companies working on these, the likelihood of everything being built and completed is quite high.

There are three planned high-speed railway routes with all them originating from Kunming in southern China. There will be a central line going through Laos, Thailand, and Malaysia, an eastern route connecting the mainland to Myanmar and a western route linking China to Hanoi and Ho Chi Minh City in Vietnam.

There are also plans for BRI deep seaport projects in Malaysia with these set to be constructed in Kuantan and Port Klang. An oil pipeline between Kyaik Phyu in Myanmar and China has been completed. Another gas pipeline, this one between Gwadar, Pakistan and China, is under construction and the plan calls for the project to eventually extend all the way to Iran.

All of the projects show the clear focus of BRI. That’s trade. Improved land and seaports make it easier for China to ship its goods to the growing markets of Southeast Asia while power projects provide the country with an opportunity to import energy.

“Trade is what is driving BRI. The assets themselves aren’t as important for China,” Mr Chiang reports. “The US and China aren’t fighting an infrastructure war. They are waging a trade war. Trade makes the difference and this is what ultimately is driving BRI.”

The Impact on Shipping

The shipping industry has been trying to get a read on BRI since it was first announced in 2013. New ports and improved sea routes would be beneficial to most firms regardless of who controls them.

“It is hard to say what the overall impact of BRI on the shipping industry will be. The effect probably won’t be as large as some people in the industry think,” Mr Chiang says. “If there is an impact it will be because of trade flows and not necessarily the infrastructure being built.”

He continues, “Concern from shipping countries about China controlling routes and ports is overblown. Never has there been a company that could call all the shots for global shipping through controlling port infrastructure. There will always be an alternative. Someone will build a new port if terms are unfavourable.”

The new ports has allowed China’s port builders and operators a chance to establish themselves on a global stage. Cosco Shipping Ports and China Merchant Port Holdings are examples of Chinese port operators which have actively invested and are operating ports outside of China. Shanghai International Port Group (SIPG) has a 25-year lease to operate a private shipping terminal in Israel while China Harbour, a subsidiary of CCCC, has been heavily involved in port construction projects outside of China.

It is this global recognition that could ultimately be the legacy of BRI. Not just for the shipping industry, but in all aspects of the initiative. The reality of BRI is that it is allowing Beijing to contribute something meaningful that will also help it compete internationally.

“In 50 years time, the idea of BRI won’t be what remains. It is the legacy of these infrastructure projects that will live on. This is allowing China to show it can contribute on the global stage. This is providing them with a platform they may not have had otherwise,” Mr Chiang concludes.

Facts

- Xi Jinping officially launched BRI in 2013 but Chinese companies had been investing in overseas infrastructure prior to this.
- An estimated USD 900 billion in projects are planned or underway within the 68 BRI countries.
- In Southeast Asia, high-speed rail lines, deep sea ports and energy infrastructure developments are some of the BRI projects.
- Not all overseas infrastructure investment from Chinese firms is BRI related.
- HuskoningDHV has worked with several Chinese companies on overseas infrastructure projects.
There is no shortage of startups in Norway. As Mr Pål Thorvik Næss, Director of Entrepreneurs and Startups at Innovation Norway, pointed out during the Norway-Asia Business Summit 2018, there were more startups created in Norway than babies born last year. And it’s not just Norway. A rapidly increasing number of startups are being established in all Nordic countries.

The key for Nordic startups is getting out into the world. According to Mr Jon Eivind Stø, Co-founder and Partner at nHack, the sooner they look overseas, the better chance they have of thriving.

“There is a great interest for Norwegian and Nordic tech, design and solutions in China and Asia. By coming to this region at an early stage, we believe that the startups will be better equipped to take a larger share of the market,” Mr Stø stated. “It’s about getting to know the market, attracting the best talents and establishing the right partnerships in Asia.”

nHack only invests in Nordic companies with the aim of bringing them to China and Asia. The investment firm’s main focus is on assisting Nordic companies in localising their business, production or development as well as finding paying customers and raising capital in the region.

“We operate accelerators in China and will soon expand to other countries in Asia. Our investment experts and mentor network actively assist the companies selected,” Mr Stø explained. “We are sector neutral, but have a special focus on ocean industries, software as a service, edtech, health & medtech, hardware and gaming.”

In some of these industries, Nordic companies already have an advantage on the competition. For others, the network other firms have already built in Asia can help provide the groundwork for their potential success.

“Nordic companies have an edge in some of these traditional industries while being Norwegian in other sectors will make it easier to do business,” Mr Stø said.

For many Nordic startups, there is some trepidation when entering a market as large as China. Despite these concerns, Mr Stø is bullish on their chances in Asia.

“It is absolutely possible for Norwegian startups to succeed in China. The country has the largest economy in the world if you adjust for purchasing power and the market here is huge,” Mr Stø reported. “We brought our first cohort of Norwegian companies to China last fall and most of the companies took huge steps very quickly. We have companies that have achieved substantial sales in the Chinese market, we have companies that now produce in China and we have companies that have raised capital in China.”

CHEYENNE HOLLIS

PHOTO: NHACK
Superficial differences
On the surface, there are numerous differences between Norway and China. Language and culture are obstacles that must be overcome, but these can obscure similarities that many companies don’t realise exist.

“The startup scene is booming in China. In many ways, it is similar to Norway. It is now popular to be an entrepreneur and more and more people are starting their own companies in China,” Mr Stø pointed out. “We also see that the best talents now flock to tech and startups. Whilst state-owned enterprises used to be the preferred place to work for Chinese talents, they are now moving into tech and entrepreneurship.”

Once Nordic companies set up in China and other parts of Asia, they are often shocked to find that it isn’t as different from home as they imagined. According to Mr Stø, all most firms need to hit the ground running is a little support and a few connections.

“What I often hear from our companies is that they are surprised how many similarities there are between the Nordics and China. With some good guidance you can thrive in China. However, meeting the right partners is key,” Mr Stø said. “This is where nHack can provide the most important help. With operations in different parts of the country and deep experience and know-how within different industries, we are able to both assist our companies in setting up production with qualified partners and accessing customers, clients and capital within a wide range of industries.”

As great as this sounds, not everything is sunshine and rainbows. China and several Asian countries can be difficult to navigate for foreign companies. As Uber, Groupon and many more overseas firms have found out, it is impossible to simply show up in China and think success will follow.

“There are many challenges in China whether you are a startup or an established business. We like to say that ‘everything can be difficult’ but ‘anything is possible’,” Mr Stø noted. “There are, of course, language and culture barriers and there is the challenge of navigating the share size of the country which is more like a continent with different cultures and business traditions.”

On the fast track
Speed has been one of nHack’s calling cards. Despite formally launching in 2017, it has already hosted its first group of startups and now has offices in Beijing, Shenzhen and Shanghai. Plans are in the works to open another office in Alibaba’s hometown of Hangzhou later this year with other cities in Asia also on the firm’s radar.

While Mr Stø is quick to admit that nHack is a fairly young company, this hasn’t prevented it from helping several Norwegian startups find success in China.

“We have seen some of our companies entering into sales and distribution agreements with major players at Chinese companies. We have also seen companies entering into partnerships with local business and firms within our cohorts co-developing products with industry leaders in Asia,” Mr Stø detailed. “In a very short time, we have seen some of our companies develop production ready prototypes and roll out production with specialised manufacturers in China. We’ve had businesses raise capital in China on substantially higher valuations than what they had previously done.”

All of these success stories are connected by speed. Everything was done quickly. This is something nHack stresses to the startups it accepts. Ultimately, there is no time to waste.

“We believe speed is critical for a startup to succeed. We are not great believers in spending month after month in an office perfecting a business plan,” Mr Stø proclaimed. “We believe that the quicker you get your product to market, the quicker you will learn what the market wants.”

This isn’t different from many other startup accelerators. nHack urges the companies it accepts to get going quickly. With a deep roster of mentors and support staff available to help, it isn’t as daunting as it sounds.

“Since speed is the focus once a company is accepted to nHack, we expect them to have meetings with potential customers, clients and partners with a strong focus on getting the first paying customers in the market,” Mr Stø said. “We naturally assist them in this process and our network of mentors in various industries plays a key part.”

Norwegian startups sitting at home shouldn’t be slow in making a decision on coming to China, according to Mr Stø. With nHack’s assistance, they can tap into a market that they may have thought was unreachable in the past.

“Beijing is the unicorn capital of Asia. Shenzhen is the ‘Silicon Valley’ of hardware. In Hangzhou, we’re setting up a landing platform for Nordic health and medtech companies. There are a lot of exciting opportunities to enter the Chinese market if you act quickly,” Mr Jon Eivind Stø urged.

Facts
- nHack is a startup accelerator helping Nordic companies enter China
- The firm has offices in Beijing, Shenzhen and Shanghai and will open in Hangzhou later this year
- Despite differences in language and culture, many Nordic startups find significant common ground in China
- Several startups in nHack’s first cohort were able to achieve some form of success in only a few months
- nHack has a special focus on startups from ocean industries, software as a service, edtech, health & medtech, hardware and gaming
- Localising business, production or development and finding paying customers and raising capital are among the areas nHack’s helps startups with
- nHack believes speed in getting a product to market is vital for startups entering China
- More of China’s top talent is no longer focused solely on working at state-owned enterprises and is now moving into tech and entrepreneurship

Above left: The China Knights event is a free tech and VC festival organised by nHack. Above: A view across Shanghai’s Huangpu River. Shanghai will host Norway-Asia Business Summit from 24 to 26 October 2019.
Women remain underrepresented as both startup founders and angel investors.

**Angel Quest**

While there are more female founders now than three or four years ago, encouraging more women to become investors might trigger a larger shift.

Angel investors play an important role in the startup cycle. In many cases, they fill the gap between seed funding and the raising of venture capital. The support of angels makes it easier for startups to survive during a critical time in their existence.

Ms Huang Shao-Ning, Partner at AngelCentral, has experience as both a founder and an angel investor. In 2000, she teamed up with her then friend and future husband, Lim Der Shing, to start JobsCentral. It would go on to become one of Singapore’s largest job portals before CareerBuilder purchased it in 2011. She stayed with the company until 2014.

These days she is working with her husband and retired corporate giant Phey Teck Moh to help Singapore’s startup scene with AngelCentral. The organisation’s goal is to create an informed, active angel community for Southeast Asia by hosting educational activities, curated deal flows, funding syndications and more.

Singapore placed eighth on the 2017 Women Entrepreneur Cities Index which ranks global cities based on their support for high-potential women entrepreneurs. Ms Shao-Ning notes that while she has seen an uptick in female founders, this is only part of the startup equation.

“Personally, I am on a quest to find more women angel investors. When we have more women angels, we increase the chance women-led startups have of being able to meet with and be vetted by potential investors,” Ms Shao-Ning says. “Also, at the negotiation table, having a woman on the other side does make the air less stifling and daunting.”

Of Ms Shao-Ning’s 18 angel investments, women founders lead six of them and five boast women CEOs. A pair of these firms received series A funding, two more are close to seed funding and another was acqui-hired by an Indonesian conglomerate. She believes the women in her portfolio are successful, but doesn’t limit this success to simply the business world.

“Using a broader definition of success where life and love are concerned, most of these amazing women are happily married, engaged or getting married soon. In fact, one just gave birth to her first baby,” Ms Shao-Ning points out. And while these successful women-founded startups now comprise a good portion of her portfolio, this wasn’t initially by design. The key was simply not ruling them out before meeting with them. Over time, Ms Shao-Ning has learned more women investors will create more opportunities for women founders.

“I once thought of doing a women-led fund to invest in women founders. I happened to meet an Israeli ecosystem builder around this time and I told her about the idea. She said, it was not necessary since the fact that a woman investing in startups was already a big first step,” Ms Shao-Ning recalls. “I didn’t quite get her at first. But looking back at
my own behaviour, and now my own portfolio performance, I got what she was saying. Hence my quest to find more women investors.”

Altruism and business don’t usually go hand-in-hand. Performance matters and after Ms Shao-Ning and her husband updated their portfolio last quarter, they found something exciting.

“We realised our angel portfolio is doing better than some of the funds we have invested in. I don’t know what is the contributing factor, but I would like to think it’s the women founders in my portfolio,” Ms Shao-Ning reports.

“I think I read somewhere that women CEOs tend to drive stronger sales numbers while controlling costs better. I would strongly recommend any investors to always listen to a woman-led startup, because they are usually well run.”

Having also been a female founder, she has some advice on what they can do to increase their chances for success when seeking out funding.

“Women founders need to make sure they learn the proper investment languages and styles. On one hand, women tend to come across either as less confident, as we tend to use more collaborative language; On the other hand, we are perceived as overly aggressive as less confident, as we tend to use more collaborative language,” Ms Shao-Ning states.

“It is not easy, but we really need to be self-assured while trying to build rapport with the investors in the room.”

From Founder to Investor

The journey from founder to investor is a challenging path. Many of the early startup founders now focus on assisting the next wave of companies make their mark. This is in stark contrast from what Ms Shao-Ning found when launching JobsCentral at the turn of the century.

“I was from the era where in Singapore there was no ecosystem, advisors or mentors for startups. We had to learn pretty much everything on our own. In hindsight, I realise what really helped was our ability to make decisions fast,” Ms Shao-Ning says.

She adds, “We had to figure out a lot of things on our own. These included product design, team management, workflow planning, pricing and the big one, how to do sales. We really did not have a lot of previous work experience, given that we were fresh out of school. I think we were fortunate that the first few key decisions were made right, so confidence in ourselves really multiplied. That really helped us in the subsequent years.”

There were other issues she faced along the way. JobsCentral needed to find its own niche in a crowded marketplace and it was facing an uphill battle in some aspects for things that were beyond her control.

“As a young founder, I experienced age-based discrimination in the first few years. I had been told, ’tell your boss to talk to me, you are too junior and wasting my time;’” Ms Shao-Ning recounts. “I learned how to carry myself very fast. I had to be assertive without being offensive.”

A willingness to learn is something all startup founders need to have. Additionally, they have to understand both the market and how what they are doing fits into it.

“Fundamentally, most businesses exist to fill a gap, provide a solution or a product that users need now. So user acceptance and willingness to pay for it is a very clear indication if you are on the right track,” Ms Shao-Ning explains.

“Founders, especially technical founders who feel they are god-sent and that their products are must-haves-by-everyone when sales have been non-existent, have to really understand what the market is telling them.”

It isn’t just founders who are faced with challenges. Investors must also navigate hurdles in what is becoming an increasingly competitive field. With more founders than ever before looking for funding, separating the exceptional from the average is an important skill.

“As an investor, the challenges have been in evaluating businesses, how to pick the right ones, how to read beyond the deck and how to manage the founders post investments,” Ms Shao-Ning notes.

Being an angel investor is even riskier. Ms Shao-Ning estimates that there is nearly a 90 percent failure rate. This makes it more important to identify how the process works before writing a large cheque for what you think might be the next big thing.

“Angel investment is a high-risk asset category. Those interested in being angels should pick up some of the angel investor guidance books. There are also workshops, like the ones we organise at AngelCentral, that go through some of the fundamental evaluation framework,” Ms Shao-Ning says. “If you are going to invest your hard-earned cash into a high-risk startup, you should at least spend a few hours attending a class or doing your homework on the subject to know how it works.”

Facts

- Huang Shao-Ning and her husband, Der Shing Lim, founded JobsCentral in 2000 before selling it in 2012
- AngelCentral hosts pitch sessions, organising angel education workshops and funding startups in Singapore
- Singapore ranked eighth in the 2017 Women Entrepreneur Cities Index
- More women are founding startups in Singapore, but the number of female investors remains low
- An increase in women investors could provide more opportunities for female founders
- Ms Shao-Ning has made 22 angel investments with six of these being female-led firms
- Angel investment can be risky with failure estimated to be around 90 percent
- AngelCentral offers educational workshops on angel investing that details the fundamental evaluation framework
- For more information, visit www.AngelCentral.Co
DESIGN FUTURES

elc International Schools are places where children are active protagonists in their own learning. They comprise a family of unique schools where students base their research, discovery, and experimentation within the context of contemporary culture and learning. Those within strive to resolve dilemmas of individual and shared importance in their quest for knowledge, and understanding but most importantly, imagine possibilities for a better future.

In the daily life of elc schools, we can perceive a pronounced increase in children’s creativity, the quality of their research, and their ability to access information. This facilitates the development of complex digital projects and products of knowledge, which are elaborated between children and between children and adults.
digital bicycles for enjoyment in the park using arduino technology
designed by Pop and Anna (ages 8 to 9 years)

automated solar and wind-powered street cleaner
using arduino technology
designed by Caden, Fabian and India (ages 10 to 11 years)
only elephants should wear ivory
elo international schools
Norway has perfect living conditions. For salmon.
The Norway-Asia Business Summit held in Singapore, entered its seventh edition in 2018. The attendance of Norwegian Minister of Fisheries Per Sandberg and Singapore’s Senior Minister of State, Dr Koh Poh Koon, reflects the importance of the multilateral relationship between Norway and Asia and Singapore in particular.

Norway-Asia Business Summit 2018

Digitalisation and Innovation played a major role in the programme this year with focus on effects in the maritime and marine sectors. In addition the Asian environment for Norwegian related start-ups was covered through several inspiring talks and panel discussions. The summit attracted over 200 participants.
1. NBAS President Leo Stornes welcoming delegates to the summit.
2. Norwegian Minister of Fisheries, Per Sandberg chatting with Summit moderator Teymoor Nabili.
3. Telenor’s Håkon Bruaset Kjøl on stage with Singapore’s Senior Minister of State, Dr Koh Poh Koon.
4. Antler’s Magnus Grimeland and Venturra Capital’s Stefan Jung sharing their success stories with the audience.
5. Fisheries Minister Per Sandberg with Norway’s Ambassador to Singapore, Anita Nergaard and Britt Dalsbotten from the Ministry.
7/9. The summit featured many rewarding keynote addresses and panel discussions.
8. Clifford Pier at the Fullerton Bay Hotel formed a perfect frame around the main dinner event at the summit.
10. Norwegian Seafood Council’s Jon Erik Steenslid dishing up Norwegian salmon treats to guests at the Lantern.
11. Team Norway in Singapore ready to meet potential investors.
12. Silje Kalsaas and Irmelin Røhn Amundsen deserve accolades for their role as the heart of the summit organising team.
“Zalora was an amazing journey and a lot of fun. It’s a great company,” Mr Grimeland proclaimed. “Now with Antler, we want to help others build their own business.”

These days he is focusing on empowering the next wave of great technology startups. From being a founder at a tech startup to helping the startup founders of today who may not know where to begin their own journey, it brings his journey full circle in many ways.

“The opportunity to build a business rarely exists,” Mr Grimeland stated. “We really wanted to set up a platform that pulls out top talent from academia, business or anywhere else. The goal is to provide them with the tools and support that allows them to build great businesses. That’s why we started Antler.”

He added the company’s core vision came from a belief there is a lot of talent that wants to found their own business. The only thing stopping most of them is a lack of support and opportunities.

“We want to get people out from where they are and give them capital and business support to be successful,” Mr Grimeland explained. “We will give them a global network and really enable them to build a business. It is a platform for great entrepreneurs.”

Many wonder when is the ideal time to create a startup. According to Mr Grimeland, it’s a decision that can be made at any time.

“Making a decision to become a founder can really come at any point during a person’s career. We’ve seen recent graduates, those who finished MBAs, coders and people who have over ten years working experience apply,” he noted. “There is no right or wrong time to become a founder. You just have to feel that now is the time to follow your dream of building something. We will let you try it.”

The biggest misconception some have about moving into the world of startups is that they must have the proverbial million-dollar idea to be successful. An idea for a startup can be useful, but it is not a requirement.

“You don’t need an idea or a clear product to work on. You just need to decide that you want to make a business that can change the world,” Mr Grimeland proclaimed. “Nobody has the golden ticket idea when they start. It builds over time. There are lots of examples of companies building away from their initial vision, such as Microsoft and Facebook. It is more about having the drive and ability to succeed, not the idea.”

Antler has identified three areas where most startups fail. These are an inability to create a market, lack of cash and a team that might not be the right fit. The firm then supports founders to make sure they can navigate these challenges as well as other issues that may arise.

“We provide founders with a grant upfront as an initial investment. This allows them to focus on their vision, not funding,” Mr Grimeland said. “We will also put together a team of co-founders that will help find the idea for their team to work on. From there, you can build a business.”

Knowledge and Innovation

In order to be successful in the startup world, knowledge and innovation are necessities. For Antler, both of these need to be on the local level. As Mr Grimeland found out during his time at Zalora, this can make a big difference as to whether a startup succeeds or fails in Southeast Asia.

“Local innovation is a big part of the process. Taking a global idea and making it suited for the local market is something that can be lost during the process,”

At the Norway-Asia Business Summit two years ago, Mr Magnus Grimeland was celebrating the success of regional e-commerce giant Zalora.

From Zalora to Antler

CHEYENNE HOLLIS

These days he’s looking to help get the next Zalora off the ground. Two years is a long time in the age of innovation. For Mr Grimeland, he went from Regional Managing Director and Co-Founder at Zalora to Chief Executive Officer of Antler, a startup generator.
Mr Grimeland pointed out. “We think every company needs some sort of real innovation to be successful. This can be taking an existing idea and innovating it to the local market or it can be something entirely innovative on its own.”

As for knowledge, Antler has enlisted a team with experience at both the regional and global level. Advisors include Stefan Jung, Managing Partner at Ventura Capital, John Riady, Director of the Lippo Group, and Magnus Ekbom, Chief Strategy Officer at Lazada Group. The goal is to have a diverse knowledge base and local talent to create diversity.

“Knowledge at the local level is important too. We have really talented people from around the globe and can pair them with the top local talent,” Mr Grimeland said. “We are looking for talent from the region, as well as globally. We really want to have diversity.”

Antler is currently interviewing founders and plans to start its first cycle in July. Additionally, work continues on building its own advisory board which will provide founders with knowledge and experience.

“We want to create a really strong advisory board with lots of experience and research,” Mr Grimeland noted. “Strong mentors mean founders are twice as likely to succeed.”

Future potential

The road from Norway to Southeast Asia and from Zalora to Antler had its fair share of twist and turns. However, Mr Grimeland has a clear idea of where he wants it to be two years from now.

“In two years time, we will have built about 100-150 innovative tech companies owned by founders in Southeast Asia. Some of these companies will be on the path to being leaders in their fields,” Mr Grimeland detailed. “We will also have expanded to Europe and South America. We hope to have helped 300-400 founders build successful businesses globally in the next two years.”

This meant you didn’t need to leave home to get a DVD,” he details. “Additionally, we found out that people in Singapore did not watch movies during the week. It did not go well for our machine which is now in storage somewhere.”

Luckily for Mr Klippgen, that would not be an indication of his future success in Singapore. As part of his family investment company, Tigris Capital, he has invested in 25 startups in Singapore since 2004. The firm’s portfolio includes some major names including property portal PropertyGuru, and Tickled Media, a parenting content community.

In 2016, Mr Klippgen teamed up with Mr Michael Blakey to form Cocoon Capital, a seed and pre-series A investment-focused venture capital firm. Cocoon Capital has a clear vision focused on B2B-oriented startups that have a viable idea or concept in place that needs to be fine tuned.

“We’re looking more at global-facing businesses and startups with software-as-a-service, FinTech and deep tech among the verticals we feel comfortable with,” Mr Klippgen notes. “We’re typically investing in groundbreaking, totally new ideas that have a global reach. We also consider companies that repeat what has happened before in Europe but modify to suit another region.”

Cocoon Capital selects only five companies per year to ensure sufficient capacity for its partners. Additionally, the firm has a wide-reaching network of partners to assist the companies they select. The exclusivity and support are among the reasons the firm currently boasts a success rate of more than 75 percent for its Asian portfolio.

As for the future, Mr Klippgen is confident Singapore will remain a hub for startups and innovation. This will provide businesses based in the city state a chance to succeed both regionally and globally.

“What I’m more excited about is the global idea. We take advantage of the fact that Singapore understands the future is about talent and ideas, not land and capital,” Mr Klippgen says. “This will define wealth generation in the future and Singapore is a really good example of how it’s possible. We are investing in global ideas out of Singapore.”
This year’s Norway-ASEAN Energy Workshop shed light on the opportunities available to Norwegian energy companies with renewables in particular shining.

Norway’s Renewable Energy Innovators

CHEYENNE HOLLIS

Another key theme to emerge from the event was collaboration, which could be expanded. There are plenty of opportunities for renewable energy in Southeast Asia with solar, hydropower and geothermal all realistic options.

This, combined with strong GDP and population growth, could be a boon for Norwegian firms utilising renewable energy innovations.

“ASEAN is the region with the best economic opportunities according to European companies. Norway is developing projects with the ASEAN Centre of Energy. This is a wide study of energy policy happening both at the regional and country level,” H.E. Mr Morten Høglund, Norway-ASEAN Ambassador, said. “There is a huge conglomerate of different groups taking part of this. The key is connecting all of them on every level of the energy field.”

He added the goal for all parties was to focus on climate change and renewable energies while also modernising the entire energy structure.

After Mr Høglund’s speech, attention turned to the individual countries of the ASEAN. The goal was to provide attendees with a better idea of the status, opportunities and challenges available in each country.

Ms Hai Anh Tran from Innovation Norway Vietnam offered insights into the market. It was noted that nuclear power plans in the country had been cancelled and the focus was now on solar and wind. There is also a growing dependency on fossil fuel in the country. She added that Vietnam would need more power to support its manufacturing growth that has been the powering economy.

“The solar industry needs investors and it is only viable in the south and southeastern areas of Vietnam. It will also need better integration into the country while storage will be important as well,” Ms Hai Anh stated. “Companies wanting to enter Vietnam will need to work with local partners. At the moment there are opportunities in all of Vietnam’s energy sectors.”

Thailand also has a growing demand for electricity with alternatives to gas the most needed. The Thai government had floated plans to use coal, but these have been met with oppositions from locals and no longer seem plausible. According to Mr Axel Blom, Director at Norway Connect in Bangkok, bio-energy has potential, but it is currently spread out and not connected. Other renewables also present good opportunities.

Like Thailand, opposition to coal in Myanmar has stopped plans for its use. The country is struggling in several areas including grid stability and LNG production. The country itself has an enormous need for electricity with only an estimated 35 percent of the public having access to it.

Mr Blom noted that there are some opportunities in Myanmar but government subsidiaries as well as difficulties working in the country make it hard for foreign firms to be successful.

That is not the case in Malaysia where Mr Thomas Sjøberg, Norway Connect’s Executive Director in Kuala Lumpur, believes Norway has a lot to
contribute to the country’s renewable energy push.

“Solar is the flavour of the month in Malaysia. Hydropower is an up-and-coming sector and there is lots of interest here too,” Mr Sjøberg explained. “Concessions for many good projects have been given out, but little-to-no movement has taken place. Norway could help provide expertise to these and get them off the ground. Additionally, Indonesia is targeting a 100 percent electrification by 2020 and the country has abundant renewable energy potential creating plenty of opportunities. These include capacity building, skilled human resource training, advanced technologies, independent power producers and hydropower solutions, according to Ms Priscilla Tanumihardja, Senior Market Adviser, Innovation Norway Jakarta. She pointed out government regulations are difficult to navigate and can change quite a bit when the government turns over.

Once the market roundup was complete, representatives from GIEK and Asian Development Bank provided some insights on how Norwegian companies in the energy sector could obtain financing for overseas plans.

After lunch, the attention turned from countries to the companies that can help provide renewable energy solutions to them. Mr Tom Preststulen,

Managing Partner at Elkem Singapore got the session underway by detailing the company’s leapfrogging autonomous micro-technopolis in boxes (LAMTIB) initiative. The technology sees easily portable shipping containers equipped with the tools needed to electrify off grid areas. Mr Preststulen noted this could be a valuable tool for underprivileged areas in Southeast Asia with no or limited electricity.

Ocean Sun’s Dr Børge Bjørneklett gave the next presentation. He offered a glimpse of the firm’s floating solar solution that is currently being tested in both Norway and Singapore. Up next was energy sector veteran Mr. Knut Kise who shared some insights on the hydroelectric challenges facing Thailand, Myanmar and the Philippines.

The potential of geothermal energy was introduced by Mr Audun Hassel, CEO and Founder of Nova Terra. His company has developed technology that allows for the creation of small, geothermal power plants that can be built everywhere in Asia. He explained that the plants can be built quickly and produce cheap electricity within a small footprint.

Infos was one of a few companies to have a track record of success in Southeast Asia having installed several small and mid-sized hydro electrical solutions in Indonesia. The technology creates little pondage and can be scaled to fit remote areas where large dams or windmills might not be feasible.

Up next was Viking Heat Engines, a company that has developed products that turn low temperature waste heat into something useful. Its CraftEngine is able to transform waste heat into electricity. Viking Heat Engines CEO, Mr Tor Hodne, pointed out the CraftEngine could be combined with a waste incinerator or biomass furnace to create electricity.

CAMBI is another firm turning something unwanted into a useful end product. The company has created thermal hydrolysis solutions that allow for optimal sludge management. Their technology reduces the volume of sludge cake produced and fully sterilizes it. Mr Marius Kleiven, Business Unit Manager Asia Pacific at CAMBI, added the end product could be turned into a class A fertilizer.

The energy producers’ session of the workshop was concluded by Mr Terje Hauglum, Contract Consulting Engineer at TH Lao Enterprise & Partners. He said there were several innovative and sustainable power solutions that could be used along the Mekong River, but these should be integrated. In his view, this collaboration would be good for both the environment and people of the Mekong.

The final session of the workshop focused on working in Southeast Asia. Highlights includes Mr Jomar Eldøy, Buri Energy Managing Director, offering a first hand perspective of Singapore’s electricity retail market, Mr Roar Haaland Johansen, Vice President of Sales at Jacobson Elektro AS, providing examples of his firm’s work in Asia and a lively debate on expanding into the Myanmar energy market.

The workshop ended with everyone wanting to know what would be next. Attendees agreed the information and experiences shared during the event were valuable, but more collaboration was also needed moving forward.

It was agreed the Norwegian Energy Collaboratorium (NEC) concept should be expanded. Innovation Norway Singapore will work to create a framework for this in the coming months. The NEC was created in 2017 to support Norwegian companies and research institutions by connecting them with local partners, customers and investors in order to develop and expand their business.

The focus of the endeavor has mostly been in Singapore, but the expanded NEC will look to all of Southeast Asia. The plan is to involve other support entities in the region, such as embassies, Innovation Norway offices, business networks and funding agencies, into the revamped NEC.

A final thought was provided by Dr Per Christer Lund, Science & Technology Counsellor at Innovation Norway Singapore, who observed that Norwegian firms have the opportunity to expand into the Southeast Asia energy sector, but they must be willing to take them. At the moment, their activity in the market is limited and unconnected.

“Norway has a strong presence in maritime and oil and gas in Asia, but not energy. The region has huge potential for energy growth. It is the most interesting region for sustainable energy in the world,” Dr. Lund said. “With Norway’s leading experience within several energy sectors there should be huge opportunities for Norwegian companies and institutions in this region.”
The concept of a regional, interconnected ASEAN power grid is nothing new, but problems have prevented it from getting up and running.

**Powering All of ASEAN**

Cheyenne Hollis

The Nordic regional power market model is among a few that could be used to help energise these plans. The development of an ASEAN power grid was first floated in the 1980s.

Despite a general acceptance of the benefits it would bring, traction for the project has been hard to come by. During a summit at Singapore International Energy Week in 2014, ASEAN government representatives and heads of private sector firms all agreed work towards a connected power grid should begin as soon as possible.

Despite this conclusion and several others like it over the years, progress has been slow. Nord Pool Consulting AS is hoping to change that. The firm is working on the ASEAN Power Pool (APP) initiative that would further develop and establish the framework for electricity generation, transmission and trading on a regional level.

The first step of the APP initiative will see a document that defines all aspects of the project drafted. The second step involves the creation of an implementation plan and road map for the establishment of the APP. Nord Pool Consulting AS is expected to finish this in May.

“We are delivering the design and a suggested implementation plan for the APP organisation and framework,” Mr. Wilhelm Söderström, Senior Consultant at Nord Pool Consulting AS stated.

The project will establish the criteria, structures, roles and requirements for the formation of the APP organisation. According to Mr. Söderström, the proposal will assist ASEAN member states in achieving consensus on the principles, building blocks and framework of an integrated regional electricity market.

The APP related project is implemented by the Economic Research Institute for ASEAN and East Asia with the Heads of ASEAN Power Utilities / Authorities (HAUPA) and the ASEAN Power Grid Consultative Committee (APGCC) serving as Nord Pool Consulting AS’ main stakeholders.

Currently, both the ASEAN Power Pool name and the final structure of the organization have yet to be fully decided.

“The ASEAN Power Pool is suggested to be an institution to enable regional coordination and later multilateral trading of electricity among ASEAN countries while maintaining the balance, stability and reliability of the interconnected power grids across borders,” Mr Söderström said.

Regional power markets have been successfully deployed in Europe, Southern Africa and elsewhere in the world. The Nordic regional power market model has provided the inspiration for others including the Southern African Power Pool (SAPP) and the Gulf Cooperation Council Interconnection Authority (GCCIA).

“Experiences from the Nordics, Southern Africa and other regional power trading collaborations can be utilised in ASEAN,” Mr Söderström reported. “We have a long-term relationship with the SAPP and assist the GCCIA.”

This experience has allowed the firm to see how cooperation can be a way to effectively optimise the usage of energy resources and infrastructure in a region. It has since brought this experience to the APP initiative.

**Charged up benefits**

Proponents of the APP claim the optimising of resources on a regional basis is the cheapest and most environmental...
friendly method to meet demand for electricity in ASEAN. According to data from the HAPUA Directory 2016 and ASEAN Centre for Energy, the region’s electrification rate is 78.7 percent, but countries remain self-reliant for power generation.

A lack of electrification in Cambodia (66 percent) and Myanmar (32 percent) weigh down the electrification rate quite a bit. No other countries in Southeast Asia have an electrification rate of less than 88 percent. Infrastructure in both Cambodia and Myanmar would need to be built up in order for them to realise the full benefits, but the fruits of the APP would be more immediate for most other countries.

“All the involved countries would benefit from a regional cooperation. Countries with hydropower or low cost resources could potentially sell power to countries operating more expensive generation such as oil, diesel and gas,” Mr Söderström said. “This gives the exporting country increased earnings and the importing country a reduced cost of power generation.”

He added that countries with a large portion of hydropower might potentially need electricity imports during dry periods where the reservoirs and rivers don’t produce at sufficient levels. In this situation, neighbouring countries with thermal based generation could potentially step in and assist by exporting power into the deficit area. So, the collaboration is mutual.

Should large investments in renewable energy, such as wind and solar, occur, an interconnected grid could assist in the integration of these new resources while offsetting some of the risks they present.

“The volatile nature of renewable energies creates a need to support power when the wind and solar forecast is not accurate,” Mr Söderström noted. “This power support could potentially be produced by a hydropower station in a neighbouring country instead of having a gas power plant on standby, for example.”

Supply security and grid stability are two of the primary reasons an interconnected grid would benefit ASEAN, but this collaboration may also allow closer cooperation between countries. According to Mr Söderström, the amount of capital required for generation capacity expansion in Southeast Asia would decrease if this were to take place.

Powering through

It will take time for ASEAN to move away from individual markets and morph into a regional entity. Mr Söderström pointed out that regional market implementation takes time to develop and needs to happen incrementally, not all at once.

“The political decision needed to move ASEAN towards a regional market can of course be time consuming to reach.” Mr Söderström said. “When speaking of regional cooperation, it needs to be mentioned that increasing regional cooperation does not directly correlate on losing national control of the electricity sector. Both European cooperation and SAPP coordination are living examples of this ideology.”

But this is only half the battle. In addition to clearing all of the political hurdles, more interconnectors will need to be built and other obstacles must be addressed. This can only happen through regional cooperation.

“It’s important to use established ASEAN regional organisations for agreeing on the needed points and to use the knowledge that these organisations possess,” he noted. “Aside from the regulatory difficulties, another challenge is to build an efficient and secure IT infrastructure for connection of the countries involved.”

It will take years, possibly even decades, for the APP to be fully realised, but Mr Söderström doesn’t believe this is a bad thing. He cites recent examples of how a methodical process ended up benefiting all parties.

“Both the developments in the Nordic and the Southern African region has taken several years and have been based on a step-by-step process which allow member states to evolve at their own pace but making sure all are moving in the same direction,” Mr Söderström explained. “One should aim for market development through evolution, not revolution when it comes to these types of implementations.”

The APP may still be in its infancy, but it could prove the foundation that sparks ASEAN energy cooperation after almost 40 years of trying. If the process is about taking steps, Nord Pool Consulting AS is hopeful the first one might be taken soon.

“The benefits of regional cooperation are starting to become accepted and understood among many of the stakeholders involved, so we are optimistic towards the future of the ASEAN power grid,” Mr Söderström concluded.

Facts

- The idea of a connected ASEAN power grid was first introduced in the 1980s
- A regional ASEAN power grid has struggled to gain traction as many countries are afraid of losing national control of the electricity sector
- Europe, Southern Africa and the Gulf have successfully established regionally-integrated power markets
- Nord Pool Consulting AS is working on ASEAN Power Pool (APP) initiative
- The initiative/project was implemented by the Economic Research Institute for ASEAN and East Asia
- APP aims to develop and establish the framework for electricity generation, transmission and trading on a regional level
- It would take several years at a minimum for the APP to be fully realised
- A connected ASEAN power grid would make expansions in renewable energy less risky from a system operational perspective
- ASEAN has an electrification rate of more than 78 percent but only Myanmar and Cambodia are under this number

Above: Should a single ASEAN power grid be established, the Xayaburi Dam in Laos is one of many projects that could sell power across borders
A Norwegian firm believes it has found the solution to these challenges. How do you get a person to walk on water? This may sound like a trick question, but it was something Ocean Sun needed to figure out during the development of its offshore floating solar solution.

With diverse terrain and large bodies of water, many parts of Southeast Asia aren’t suitable for traditional solar solutions.

Solar on the Water

CHEYENNE HOLLIS

It was imperative for the Norwegian company to create special floating structures that were durable and easy for installers to work on.

Ocean Sun created a thin, polymer membrane that prevented the breaking of waves and salt-water intrusion while being sturdy enough to support silicon solar modules. However, trying to model how the membrane would perform in real life conditions proved to be challenging for the company’s leaders.

“The hydro-elastic performance of the membrane was hard to mathematically model. Very early, the conclusion from professors was that it needed to be built to see how it would perform,” Dr Børge Bjørneklett, Chief Technology Office at Ocean Sun detailed. “So, we decided to build a prototype and placed it in the fjords for a year. This allowed us to get a better idea of how it would hold up.”

The membrane provided a similar effect to that of oil on troubled water, according to Dr Bjørneklett. The prototypes ended up being successful even if the firm didn’t quite know what to expect.

“We were very surprised with the results. People were able to walk on this membrane that is only one millimetre thick,” Dr Bjørneklett said. “That is because of the surface tension, which completely changes with no breaking of waves. It was quite a sensation to view.

When you look and see people walk on the membrane, it leaves quite an impression.”

This innovation was an important step in the development of Ocean Sun’s floating solar solution. It meant installation and maintenance of the solar panels could be completed quickly and safely.

“Having this ability to walk on the structure is important during installation. The solar modules need to be installed at a high speed,” Dr Bjørneklett added. “It was a big revelation to us when we saw how the membrane responded. We initially thought we would need to distribute the load, but this was not the case.”

While the technology behind the membrane is remarkable to see, the power generation behind offshore floating solar is what will make the difference. The technology allows for large-scale solar developments on oceans, lakes and reservoirs.

Floating solar solves a few key problems with traditional solutions. While the renewable energy source will be extremely important, land-based generation options can be challenging, especially in places like Southeast Asia.
“The land area for traditional solar solutions is scarce. The land for the best solutions has already been taken,” Dr Bjørneklett said. “You need to open up new areas and new surfaces for solar power systems. Bodies of water are a good place for this.”

Research from the UN found that nearly half of the world’s population lives within 200 kilometres of coastline. Meanwhile, 20 of the world’s megacities, metropolitan areas with more than 10 million residents, are costal. Floating solar can benefit these areas.

For large cities, floating solar can be placed closer to cities than land-based solar power systems meaning less energy is lost during transport. Smaller cities in coastal areas, such as archipelagos, can also benefit from using the technology.

While many areas in places such as the Philippines and Indonesia don’t have a large enough land area for a solar plant, floating solar can provide them with a chance to utilise renewable energy. Many islands in Southeast Asia are still reliant on fossil fuel power generation, which can be both expensive and harmful.

“The technology allows us to build for less cost than land-based solar and with a better yield thanks to the water cooling,” Dr Bjørneklett said. “When implemented it can give access to cheap, renewable energy to new parts of the globe where it may not currently be available such as Southeast Asia. In the archipelagos, it can be hard to create the space needed for land-based solar despite these areas wanting to utilise the energy source.”

Since the technology is not a one-size-fits-all solution, it can easily support a remote fishing village or a large city.

“The Ocean Sun solution allows for the usage of solar power on bodies of waters in a way that wasn’t possible in the past,” he stated. “The solution is also scalable. This means it can be used to provide sufficient renewable energy to different areas to suit all types of demands.”

In addition to the testing in Norway, the company has also set up a test bed on waters just off Pulau Ubin, an island in northeast Singapore. This is Ocean Sun’s benchmark study with air-cooled modules. It is the company’s first opportunity to see how the technology performs in equatorial waters. Areas in the lower latitudes reap the greatest benefits from floating solar technology.

“There is enormous interest in Ocean Sun all across the globe. The interest is everywhere plus or minus 40 degrees of the equator,” Dr Bjørneklett noted.

A cheaper, Flexible Alternative

Floating solar is a relatively new industry, but the progress has been impressive. Dr Bjørneklett, along with Ocean Sun co-founder Dr Øyvind Christian Rohn, started the company in 2016 to exploit Dr Bjørneklett’s patent application. Shortly after, Dr Arnt Emil Ingulstad made the first important investment and also joined the management team. Later they received a grant from Innovation Norway and together with a Norwegian industry consortium consisting of Bergen Kommunale Kraftselskap, Norsk Hydro, REC Solar, Leroy Seafood and Grieg Seafood they were able to build the first prototype.

“I was in the photo voltaic business at REC Solar managing the design of the module. When REC Solar moved to Singapore in 2011, I left the company and went on to work in the oil and gas industry, building large hydro elastic structures stretching from the blow out preventor up to the floating rig used in ultra-deep-water drilling,” he explained.

These experiences have served Dr Bjørneklett well at Ocean Sun. Dr Rohn also had experience with business administration in the oil and gas industry and the pair saw great potential for floating solar as an alternative to the oil sector in which they were working in.

“When we started Ocean Sun, there was almost no one else in the floating solar industry,” Dr Bjørneklett said. “I was most concerned about the cost on a dollar per watt basis. We tried to create the simplest and lowest cost solution to carry the solar PV panels in order to make it effective.”

Floating solar also has another key advantage when compared to land based generation. Since the panels are located on top of water, this provides natural cooling that makes production more efficient.

“The primary advantage of the Ocean Sun solution is the direct cooling of the solar PV panels,” Dr Bjørneklett stated. Another benefit is the total amount of polymers going into the structure. Our competitors aren’t able to match this.”

It is not just out at sea where Ocean Sun’s floating solar solution can be effective. The technology is also being touted as a way to improve efficiency at hydroelectric dams.

“Hydroelectric dams can suffer from water evaporation and this can be a problem. With the Ocean Sun solution, you can use solar power during the day and then switch turbines during the night to save potential energy,” Dr Bjørneklett pointed out.

The potential of Ocean Sun and floating solar could provide a massive boost to the renewable energy sector in Southeast Asia. At the moment, the company is focusing on its progress.

“We are looking to expand and continue to develop the product. We want to keep progressing the project and build larger demonstration units,” Dr Bjørneklett concluded. “We are up to six people now and are growing rapidly.”

Left: A thin, one millimetre thick polymer membrane makes it possible for installers to walk on the Ocean Sun solar solution.
Geothermal is one of the cleanest energy sources available in the world.

**Geothermal Powered Future**

Even at a young age, Mr Audun Hassel, CEO & Inventor at Nova Terra, understood the world had an energy problem. Finding a solution to the air pollution created by power plants burning fossil fuels has been driving him ever since.

“I was about 12 years old when I realised that our global energy problem, is one of the greatest problems of humanity,” Mr Hassel recalls. “So, I decided I wanted to solve the world’s energy problem. Maybe it was a childish idea, but it triggered something deep inside, I just knew that was something I wanted to do. It wasn’t a straight path, but now, 28 years later, I have developed several solutions to these energy problems.”

He has worked on tidal power in the past, but it is his latest work in geothermal energy production with Nova Terra that could prove to be a gamechanger. The green-energy company came up with technology that greatly increases power production of new and existing geothermal plants. The Nova Terra solution also makes geothermal energy production profitable outside of current hotspots, something once thought of as impossible.

“The experts thought it was too good to be true and there had to be an error somewhere. We went to the Institute For Energy Technology and simulated our thermodynamic process in two different simulation programs. The reports clearly showed our thermodynamic process works far better than any comparable thermodynamic process,” Mr Hassel explains. “Not only could it more than double the electricity output of geothermal power plants, it can use far lower temperatures, starting from 60 Celsius. The plants of today need at least 120 Celsius to be profitable.”

Traditional geothermal power plants take up a huge footprint and are located in hotspots far away from where the power is needed. This means long and costly power transmission lines, which are harmful to the environment, are required. And this doesn’t even begin to factor in the costs involved with building geothermal power plants.

“Current geothermal power plants have high investment costs and take at least five years to build. The hotspot areas are risky with earthquakes, high-pressure steam pockets, mineral scaling and a corrosive environment,” Mr Hassel states. “However, once they are built, they produce a steady supply of electricity for decades without any fuel costs or pollution. If the interest on the investment capital is low, geothermal power becomes very profitable.”

Understanding both the risks and upsides of current geothermal power plants, Mr Hassel and the team at Nova Terra wanted to find a solution that eliminated the challenges while keeping the clean power geothermal generates. Eventually, Mr Hassel would come up with what would become the core of Nova Terra’s geothermal technology.

“The idea came to me after staring at a thermodynamic diagram for almost a week. I did not know if I would find anything, but suddenly I had that ‘Eureka’ moment,” Mr Hassel details. “As the new...
geothermal technology can use far lower temperatures, it can exploit geothermal resources even outside of geothermal hotspots. The economically exploitable geothermal resource potential increases by more than 1,000 percent."

Nova Terra believes the technology could eventually allow many countries to become self-sufficient using geothermal energy. The new thermodynamic process the company utilises requires a well with a depth of two to four kilometres where the water is hot, but not enough for traditional geothermal power production. Nova Terra’s technology uses hot water from this reservoir to create steam to run through the power producing turbines.

And unlike current geothermal power plants, which Mr Hassel compares to the appearance to chemical plants, Nova Terra has a different setup. The firm is able to set up small mass-produced plants where the power is needed. Additionally, the plants themselves feature a design that makes them less of an eyesore than current plants.

“Our plants are prefabricated standardised plants. Once the serial production and setup of plants is streamlined, plants can be set up within three months,” Mr Hassel says. “The power plants provide low power transfer costs and high supply security, two features not always possible with traditional geothermal power plants.”

The technology can also benefit existing geothermal power plants where well temperature may have dropped. This is a cost saving alternative to drilling new wells to find the water temperatures required to generate electricity.

“We can take old wells that are not producing sufficient temperature and use them to generate clean, high-temperature steam, which can be fed into existing turbines,” Mr Hassel notes. “This saves money on both drilling and turbine costs and can be highly profitable projects.”

Asia’s power solution?
In a bit of irony, the Nova Terra power plants don’t work all that well in Norway. According to Mr Hassel, the heat is too deep into the ground and it becomes too expensive to drill. The power produced would also have to compete with cheap hydropower that is currently available. Instead, the Norwegian company has turned its attention to Asia.

“We are currently focusing on big markets and where our technology can have the most positive impact in the shortest time. Southeast Asia is a wonderful area with the greatest geothermal resource potential in the world,” Mr Hassel states.

Indonesia, in particular, is an interesting country for geothermal power production. It is the fourth most populated country in the world with 261 million inhabitants. The Indonesia government is targeting 100 percent electrification by 2020. It contains the best geothermal resource potential in the world making it an ideal place for Nova Terra to enter.

“We recently had a promising meeting with PLN, the governmental energy company of Indonesia, and showed them how Indonesia can be self-sufficient with cheap geothermal power,” Mr Hassel reports. “We proposed an ambitious goal of setting up our new mass produced geothermal power plants, producing 30,000 megawatts of clean and affordable electricity by 2025.”

The company’s geothermal technology is now developed and proven. It now is on the lookout for a country to build its first pilot plant. Talks are advancing with Indonesia, but there are also other opportunities Nova Terra is exploring.

“We have recently joined forces with Jacobsen Elektro, a Norwegian company that builds power plants in Asia and Africa. We are currently looking into geothermal opportunities in Myanmar, Bangladesh and Tanzania,” Mr Hassel says. “Within five years we plan to establish a mass production facility of geothermal power plants and to be rolling out a series of plants in at least one country.”

Nova Terra is confident in the benefits of its technology, especially in Asia where their power plants will not have any trouble providing significant return on investment during the lifecycle.

“In many Asian countries, such as Indonesia and Japan, the payback is a few years and the plants will pay themselves back many times over during their lifetime. That is in addition to producing the cheapest, cleanest and most reliable power there is,” Mr Hassel says.

It would be possible for Nova Terra to sell this technology to a large firm, but it doesn’t want to head down that path. Instead, it is dedicated to a more altruistic approach that all began with Mr Hassel’s childhood desire to eliminate the world’s energy problem.

“Nova Terra is a small company with great ideas, which we want to share with the world. To avoid selling out and losing the control of the technology, we have decided to accept donations,” Mr Hassel proclaims. “This support enables us to share our technology with all. It also means we can avoid putting the technology in the hands of a multinational company, which traditionally focuses more on maximised profit than sharing and compassionate action.”

Above left: The Nova Terra solution can be placed where the power is needed and thus avoids expensive power transfers. The electric production costs is as low as USD 0.02/kWh. Above: Nova Terra geothermal power plants are prefabricated and can be installed close to where energy is needed.
As the steam of the 2018 Winter Olympics dissipates, we take a look at what the Games might mean for economic growth and political stability going forward.

Olympic Optimism

SOFIE LISBY

There was no end to the celebrations in July 2011 as Seoul won their decade-long bid to host the 2018 Winter Olympics. The initial response was swift and tangible. Shares in casino and resort operations and construction firms soared.

A study by the Hyundai Research Institute had found that hosting the 2018 Games would inject WON 67 trillion (USD 60.7 billion) into the South Korean economy through investment, spending, and spin-off consumption, including WON21 trillion from direct benefits such as investment in social overhead capital and a boom in the tourism industry, as well as WON 43 trillion from indirect ones over the next ten years. Some of the country’s largest conglomerates such as Korean Air Lines and Samsung had been fervent supporters of the bid.

The promise of the Olympics

The initial response was swift and tangible. Shares in casino and resort operations and construction firms soared, with Reuters reporting double digit spikes in the shares of several companies. The shares of Seunghwa Premium Construction Co surged to its daily limit of 15 percent on expectations that the builder would win the contract to build a highway from the capital Seoul to PyeongChang. Hyundae Cement also rose 15 percent on the day the announcement was made, and casino operator Kangwon Land rose 9.5 percent on the Seoul stock exchange.

The optimism could be felt even into early this year; the Korean stock market index (KOSPI) hit a new high of 2,589.19 in January 2018.

At the time of winning the bid to host the Olympics, many in South Korea saw the 2018 Winter Games as a chance to propel the country into a modern high-tech power and strengthen the national brand, much like the 1988 Seoul Olympics has been stored in the national narrative as a marker of the emergence of South Korea as an Asian powerhouse, and helped propel the success of companies like Samsung and LG.

Then came the costs. According to a report by the Council on Foreign Relations, South Korea spent USD 13 billion on hosting the 2018 Winter Olympics, nearly double the projected USD7 billion budget. Budget runs are the norm rather than the exception in the history of the Olympics, and countries often take on enormous debts to finance the event.

“As the cost of hosting Olympics keeps escalating, it becomes even more difficult for cities to realise positive returns from the events,” Abhineet Kaul, a director for public sector and government practice consulting at Frost & Sullivan was quoted by CNBC. “Most of the host cities have taken on unaffordable debt to fund the infrastructure development, and the financial returns have not justified the investment. This has led to cities cutting public spending to service their debt or the vicious cycle to borrow more to retire old debt.”

The cost of hosting the Olympic Games has deterred countries from applying, and the IOC made the unprecedented decision last year to announce the venues for two summer games at the same time (Paris will host the 2024 Olympics and Los Angeles the 2028 Olympics) after all other candidates pulled out.

Sluggish domestic spending

South Korea has seen sluggish
domestic spending in the past couple of years. However, the preparation leading up to the Games saw the creation of more social overhead capital which was aimed at stimulating consumption and the creating jobs. In fact, at the beginning of the year, the Bank of Korea (BOK) raised its economic growth forecast to 3 percent, from its earlier forecast of 2.9 percent. Chang Min, the BOK’s director general for research bureau told reporters that the PyeongChang Olympics was expected to boost private consumption by 0.1 percentage points during the first quarter of the year.

Tourism is one of the sectors expected to benefit from the Olympics in the short and medium term. The Games were expected to attract 2 million more foreign tourists this year than last year, and help put the mountainous rural province of Gangwon on the map for future travellers.

A large portion of the USD 13 billion investment has gone into infrastructure projects linking the sparsely populated province to Seoul, as well as constructing new hotels and venues, and the investment has, at least in the short term been an economic boon for the region. According to a BOK report last year, economic growth in Gangwon outpaced that of the country for the region. According to a BOK report last year, economic growth in Gangwon outpaced that of the country for the region.

A long-term view

Not everyone shares the optimism. Many are concerned that the economic benefits will become very short-lived without sustained tourism growth. Robert A. Baade, an economics professor at Lake Forest College in Illinois who has studied Olympics economics, told The Wall Street Journal that the various economic impact studies produced by South Korean think tanks “may well significantly exaggerate the economic impact the games will provide. For them to make the argument that if you don’t get the immediate pay-off, the country will experience long-term benefits such as tourism. You’ve got to look at that very carefully.”

There is already indication that optimism about the effects of the Olympics should be kept in check. According to ForwardKeys, a Spain-based global analyser of international air travel, inbound flight bookings rose 15.4 percent year-over-year in February but fell 24.9 percent in March. Pointing to possible reasons for the decline, the company noted the impact of geo-political issues with China and North Korea on the tourism industry in Korea. According to a BOK report last year, economic growth in Gangwon outpaced that of the country for the region.

The beginning of a new era?

There have been positive outcomes as well. One of the more significant developments in the lead-up to the Olympics was the surprising announcement that North Korea would send athletes and a delegation South Korea to participate in the Games. The decision was by many seen as a pivot for bilateral relations between the two countries. “The Olympic Games has been a critical juncture that has changed the countries. “The Olympic Games has been a critical juncture that has changed the

According to Hyun-wook, a scholar at Korea National Diplomatic Academy told The Globe and Mail.

According to Hyun-wook, the Olympic Games have made “South Korean people feel that the North and South are one national identity.” Indeed, sixty-five percent of those surveyed by the Korea Society Opinion Institute believe the Olympics will improve inter-Korean relations. Furthermore, a RealMeter survey showed that 61.5 percent of people supported an inter-Korean summit.

Shares in a number of companies in South Korea’s biggest industries, such as electronics and construction, have rallied as a result of improving relations between the South and the North, and in anticipation of a historic meeting between US President Donald Trump and North Korean leader Kim Jung Un. Prior to the summit in April 2018 between South Korean President Moon Jae-In, shares in Hyundai Engineering and Construction shot up about 28 percent to WON 57,700, their highest level in three years.

Marcus Noland, executive vice president and director of studies at the Peterson Institute for International Economics, told the CNBC that the South Korean economy has been relatively immune to concerns about security threats from the North. Now South Korean businesses are bracing themselves for a potential opening of the North Korean economy.

“We expect the construction sector would immediately benefit from an urgent need for power plants and infrastructure in North Korea, if the economy opens,” Sungmee Park, an analyst at Citibank Financial Times. “In the longer term, we also expect opportunities in the housing, commercial buildings and plants for the 25 million population of North Korea.”

Is this the beginning of reunification? It won’t happen anytime soon, say experts. If it were, however, it would come with huge economic promises for both countries: according to the CNBC, in 2015 the Korea Institute for International Economic Policy, a government think-tank, estimated that a unified Korea could generate an USD 8.7 trillion economy by 2055, 1.7 times the projected size of South Korea alone.

Above left: The joint Korean team at the 2018 PyeongChang Winter Olympic Games Opening Ceremony. Above: South Korean soldiers standing guard at the JSA between the blue buildings. View from the south. To the rear, three-story Panmunjag hall in North Korea.

Facts

■ The estimated costs of the PyeongChang Winter Olympics was five times less than the 2014 Sochi Olympics, the costliest ever.

■ To avoid any potential confusion with North Korea’s capital, Pyongyang, the PyeongChang resort - which is just 50 miles south of the demilitarized zone that separates the two countries - has changed its name for the Games, by capitalizing the “C.”

■ In total, 23 venues, split between PyeongChang and neighbouring Gangneung, were used during the 17 days of the Games. Six new venues were built and additional venues were renovated for the Games.

Source: CNN
Together these states also bring in 22% of India’s GDP with Maharashtra being the financial and business centre of the country. Over half of Norwegian companies in India are headquartered in the state.

According to Ms Ollestad, business opportunities are specifically ripe in the maritime, marine and energy sectors in both renewables and oil and gas. Most Norwegian companies in the jurisdiction are active in these areas, but new opportunities in other sectors also dawn.

“There is a revolution taking place in maritime infrastructure at the moment”, says Ms Ollestad. Ports and inland waterways are being built or about to be built very soon. “The Indian government is focusing more on India as a maritime nation. Prime Minister Modi met with the Norwegian Prime Minister Erna Solberg in Stockholm and suggested that we strengthen our cooperation and work together on ocean issues.”

And digitisation also creates new opportunities in maritime like in other sectors. One opportunity arising fast is green shipping.

On 6 December 2017, the Norwegian embassy organised a seminar addressing green transportation. The Norwegian Ambassador to India, Mr Nils Ragnar Kamsvåg recently stated on the embassy’s website that over one-third of all new cars sold in Norway are electric vehicles. Valuable lessons for India and Indian companies may be drawn from understanding customer behaviour in such a market. We also have state of the
to name a few,” states Ms Ollestad.

Economically speaking India is becoming massively more important for the rest of the world. According to The World in 2050 by PWC, India is on track to become the second biggest economy on the planet after China.

The World Bank’s Global Economic Prospects states that “After conceding its position as the fastest growing major economy to China for a year in 2017, India is likely to reclaim the position in 2018, with growth expected to accelerate to 7.3% in the year.”

For that to happen though, the World Bank states that reform and a more balanced growth across sectors are needed. So far, “India’s growth has been well diversified, but the pace of growth acceleration has differed across sectors. The acceleration of value added has been fastest in services, followed by industry, and there has been no evident pattern of acceleration in agriculture.”

Mr Junaid Ahmad, World Bank Country Director in India, recently stated on World Bank’s website that “India’s long-term growth has become more steady, stable, diversified and resilient. In the long-run, for higher growth to be sustainable and inclusive, India needs to use land and water, which are increasingly becoming scarce resources, more productively, make growth more inclusive, and strengthen its public sector to meet the challenges of a fast growing, globalizing and increasingly middle-class economy.”

Ms Ollestad agrees with the World Bank’s assessment of inclusion as an important factor for long-term development. “In India, I have seen some of the most intelligent women with many of them in higher positions, both in the government and corporate. However, what is still surprising is that overall women’s participation in the workforce remains low. In fact, women’s participation in India’s workforce is lower than that of Pakistan and Bangladesh.”

One way to achieve gender participation and maintain growth numbers year after year is technology. According to PWC in the report Future of India - the Winning Leap, technology can be a major booster for development. It allows for leapfrogging earlier stages and jump right to the latest in technology. PWC’s analysis of key sectors such as education, healthcare, agriculture, financial services, power, manufacturing, retail, urbanisation, digital and physical connectivity suggests that new solutions are necessary in each sector. These Winning Leap solutions will enable sectoral growth with a fraction of the resources to attain desired outcomes.” PWC finds.

If India is able to harness leapfrogging technologies, PWC says that, “a sixth of humanity, with the intellect, energy and creativity of a young nation is poised to grow rapidly”.

Ms Ollestad recently saw this first hand when visiting SEWA, the Self Employed Women’s Association in Ahmedabad. “SEWA is a well-known NGO, working for women’s welfare in the unorganised sectors. I was particularly impressed with the women associated with the NGO, embracing technology to manage their businesses.”

The challenge of a country like India, Ms Ollestad finds, is its complexity and sheer size. “India is a huge country and you need the right contacts, so it helps that I have been here before,” Ms Ollestad adds.

The Consulate General in Mumbai was established in 2015 to strengthen Indo-Norwegian cooperation. “Our primary goal is to support these interests, particularly within the seafood, maritime and oil & gas sectors,” says Ms Ollestad.

An example of such efforts is an upcoming meeting in Gujarat. “Gujarat is an important state for Norwegian businesses, especially in maritime and oil and gas sectors. The state’s new port policy along with Centre’s Sagarmala’s initiatives, Gujarat offers significant opportunities in shipbuilding, maritime skilling, naval defence and LNG infrastructure.”

“Working with state governments and other agencies within our jurisdiction has been positive,” says Ms Ollestad. “The focus of the Consulate General in Mumbai, which is India’s financial centre, is on business matters. Kolkata and Chennai have Honorary Consul Generals and they promote Norwegian interests in their patch. We assist the consulates on issues regarding seamen affairs. It is relevant to mention that Indians constitute the second largest group of seafarers on Norwegian ships.”

Basically, “we are here to open doors and use all traditional diplomatic tools to assist bigger and smaller companies,” says Ms Ollestad. “Mumbai, Mumbai specifically, is of interest for many Norwegian companies since many banks and private oil & gas companies are based there.”

Ms Ollestad speaks highly of the city that houses so many Norwegian companies. “Mumbai is a vibrant, open and liberal city. It’s really a progressive hub. If anything has changed in the time I have been away is that there is now an even more assertive middle class. Recently, many people attended the clean-up of Versova beach in Mumbai. I see the growing middle class in India becoming more assertive. Issues around smart cities, environment protection, clean technologies and green initiatives are getting centre space in public discourse.”
The impressive Norwegian Seafood Dinner 2018 was held on 9 March 2018 in Singapore. With a full ballroom, the Seafood Dinner in Singapore is evidently still a popular and important networking event within the Norwegian community and their invited guests.

The Norwegian Business Association (Singapore) and The Royal Norwegian Embassy co-hosted the annual Norwegian Seafood Dinner at Fairmont Ballroom, Raffles City Convention Center. As previous years, all the seafood was especially flown in from Norway and prepared by globally acclaimed Norwegian and Singaporean chefs. Chef Frank Næsheim, again, made sure the party could enjoy a delicious seafood buffet spread with some 100 courses.
1. NBAS President Leo O. Stornes with the winner of the 2018 NBAS Award, Andreas Sohmen-Pao, Chairman of BW Group and the NBAS Vice President Sigrid M. Schrødter Teig.

3. Singapore’s Minister Sam Tan Chin Siong, Minister of State, Ministry of Foreign Affairs & Ministry of Social and Family Development and Norway’s Ambassador to Singapore, H.E. Ms Anita Nergaard are greeted by the NBAS Board represented by Telenor’s Håkon Bruaset Kjel.

8. Norway’s Ambassador to Singapore, H.E. Ms Anita Nergaard delivering her opening speech.

9. Norwegian restaurant FISK was a major contributor to the event. Here Executive Chef at FISK Markus Dybwad.

10. NBAS Executive Director Silje Kalsaaas thanking the sponsors for supporting the 2018 Seafood Dinner.

11. Head organiser of the event and owner of FISK and Snorre Foods, Frank Næsheim thanking participating chefs, among them Pink Fish’s Geir Skeie.
What Lurks Beneath

NORWAY-ASIA BUSINESS REVIEW  ISSUE 2 2018

What these sea dwellers lack in looks, however, they more than make up in their chemical and biological composition. In traditional Chinese medicine alone, they are believed to have healing properties and are commonly used to treat a wide range of ailments, such as arthritis and even cancer.

Sea cucumbers also have a very healthy nutritional profile due to being high in protein and very low in fat. Eaten in China and other Southeast Asian countries as delicacies for centuries, they are appreciated for their soft texture, dietary and medicinal properties.

The current commercial exploitation of sea cucumbers, coupled with rising demand from Asia, however, leaves some industry experts worried, calling for more sustainable sourcing, in order to avoid extinction of certain species.

One of the companies heeding this call is EIR of Norway, a premium seafood and technology startup based in Stavanger. It was founded during Ocean Space, an accelerator focusing on the maritime industry, hosted by X2 Labs in October 2017. It is now in the process of setting up an end-to-end value chain from the Norwegian coastline to Asian high-end clientele. The initial product series in aimed to serve the global USD 2.5 billion market for sea cucumber, with strong growth expected to come from other premium seafood products and digital services.

“There were over 250 applicants that were vetted for the programme, with the aim of forming as diverse teams as possible. I personally didn’t go through the process as I had found out about it via Facebook. Equipped with nothing more than the time and date, I took my chances and showed up on the first day, asking whether there was any chance to take part in this great opportunity,” Ms Vicky Green Samuelsen, EIR of Norway’s CEO and founder reminisces.

The Brazilian/Texan CEO has extensive leadership experience in leading major capital projects in the oil & gas industry. The rest of the founding team consists of Torgeir Hausken, Monireh Ataei, Christianne Fenes, and Bjørn Bejar Fjærli, each of them adding vast international networks and experience from diverse backgrounds in law, oil & gas, geology and maritime.

“One of the things that X2 Labs really focused on was to seek unique market opportunities. At least on my team, nobody had joined the programme with this preconceived idea of a fantastic product, so we had to meet with a lot of different industries from offshore wind to fisheries and other maritime sectors.” Ms Green Samuelsen says.

Eventually, the team came across an article by Margareth Kjerstad, a senior bioeconomy and value chains researcher in Norway, who claimed to have been receiving daily calls from China, who were looking to buy Norwegian sea cucumbers. The team called her up and confirmed that this was indeed still an opportunity which no one thus far had tapped. Based on that phone call, the product-market fit had been made and EIR of Norway was conceptualised.

“From that point onwards, our main goal was to make sure we could lock down the entire value chain, from the fisherman all the way to the end customer. After a few iterations of this, the pieces started to fall into place, and at the end of the accelerator we were able to pitch our idea to a panel of investors, in order to raise the necessary capital to establish the company and take it to market.”

The Norwegian Seafood Council recently unveiled its ambitious plan to dramatically ramp up seafood exports to China, expecting the trade to be worth USD 1.45 billion by 2025.

“The plan is based on Chinese consumers’ preference for Norwegian seafood, coupled with projected growth in second- and third-tier cities in China,” said the Norwegian Seafood Council’s director for the Chinese mainland and Hong Kong, Mr Sigmund Bjørgo, at a news conference in Beijing.

The council, which comes under the country’s Ministry of Trade, Industry and Fisheries, said it aims to increase the consumption of salmon, arctic cod and other common species, but also to establish a firm foothold in China for species including sea cucumber, blue mussels, mackerel and cold water shrimp – many of which are currently waiting for approval on the new species import list between China and Norway.

In the meantime, EIR of Norway
Sandberg and Norway Connect’s General Manager for Malaysia, Ms Joanne Oo with a product sample.

X2 Labs Reaching for the Sky

HENRI VIRALT

The group’s overarching values are tied around having a unique combination of people, programs and partners that can drive fast-based growth, with the end goal of taking Norway to a post-oil & gas future and pinning it as a global hub for innovation and entrepreneurship.

“X2 Labs is a Norwegian startup accelerator and venture builder. Our mission is to reinvent entrepreneurship in order to build better, more agile and successful startups. We launched our own minimum viable product (MVP) in late 2016 and have since then run four programs with nearly 50 teams. Our programs cover smart cities, digital tourism, aquaculture and ocean space—all of which have been marked by our research as industries of the future,” says CEO & Co-Founder, Christian Rangen.

The accelerator itself comprises four weeks of intense onsite work in teams, with up to 19 hours a day of endlessly revising and pitching their ideas to investors and partners. At the end of the validation process, a handful of teams are selected to become actual startups.

X2 Labs works on a statistical model where they expect to accelerate 1-2 startups per batch in any given program. To date, X2 Labs has accelerated 15 startups, but their current goal is to launch at minimum 50 new companies, thereby making them one of the largest and most ambitious entrepreneurship programs in the Nordics.

“Norway’s future lies in the ocean space. Renewable energy, autonomous shipping, drones, aquaculture, advanced technologies and new business models; all of it is built on generations of maritime knowledge and culture. For us, the ‘Ocean Space’ program, in its broadest sense, was a natural fit. We were able to attract government bodies and corporate partners from across the landscape, including Statoil, Atea and Cisco among others.”

Out of all the teams that participated in the Ocean Space program, Mr Rangen consider EIR of Norway to be the runaway success. “They have found a massive market opportunity with a solid route to market and their team has learned to execute very, very fast. So far, they have raised two small rounds of capital, all of it happening in under six months. EIR are consistently hitting every milestone in their project plan. They are definitely going to go far.”

As for X2 Labs, at the moment Mr Rangen is concentrating on two phases in sequential order: first, fostering and scaling their top nine portfolio companies, which he says includes a very hands-on approach to fundraising, securing investors, building the teams and testing the business models. The second phase is to work on planning the next three programs for the accelerator.

“We are very excited to announce that they will all be built around the ocean space, ocean tech and aquaculture sectors. We can’t wait to get started. The official launch dates are not made public yet, but new information will be released in the near future.”

Facts

- Sea Cucumbers (Holothuroidea) are omnivores invertebrates living in the wild from 5 to 20 years. Average size is 20 cm by 200 cm
- Sea cucumbers are nocturnal creatures (active during the night)
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Stavanger-based X2 is a family of companies focused on developing, launching and scaling new business ventures in a wide array of industries across the globe.
Has Filipino strongman and president Rodrigo Duterte cured the “Sick Man of Asia”?

Dutertenomics

For years, the Philippines has lagged behind many of its Southeast Asian neighbours in terms of economic growth and poverty reduction, earning it the label “Sick Man of Asia.”

However, since the early 2010s the country has broken out of its mediocre growth patterns to become amongst the fastest growing nations in Asia.

The country’s economic growth reached the 6 percent mark in July 2015 and has not gone lower than that since. Growth was sustained at an average of 6.7 percent for 2017, a rate The World Bank expects to continue for 2018 and 2019. GDP grew at an annualised rate of 6.9 percent for the third and fourth quarter of 2017. The results were ahead of economists’ consensus forecasts and made the Philippines one of Asia’s best-performing economies for the period, just behind Vietnam but slightly ahead of China, according to Financial Times.

Growth has been propped up by exceptionally low interest rates. The central bank has kept interest rates at a record low but experts warn that the bank may have to tighten policy as currency weakness adds to pressure on inflation. The peso dropped to an 11-year low in 2017 and is the worst performing unit in Asia. So far this year, it has dropped about 3.5 percent against the dollar, also the worst in Asia, according to ABS-CBN News.

Furthermore, growth has been relatively shallow, and, some argue, non-inclusive. Unemployment remains high, as do poverty rates. Travel just short distances outside of Manila and the differences to the glitzy skyscrapers of Makati, the central business district of the capital, seem worlds away. As anyone who has spent hours in Manila’s rush hour traffic can attest, there are obvious infrastructure woes as well.

Dutertenomics

Although economic reform started long before the election of president Rodrigo Duterte, there is no denying the effects of his presidency on the economy, most notably the “Build, Build, Build” programme, dubbed “Dutertenomics.” The programme will see the Philippines embark on an ambitious USD180 billion infrastructure spending spree over the next decade, taking up an estimated 5 percent of the GDP and aimed at transforming the economy.

More than 70 large scale projects have been identified as part of the programme, including six airports, nine railways, three rapid bus transits, 32 roads and bridges and four seaports. The
larger objective is to bring down the cost of production, improve rural incomes, encourage countryside investments, improve the movement of goods and people, and create millions of jobs.

In the planning are also four energy facilities to help ensure low-cost and stable power supply, water resource and flood control facilities to protect vulnerable communities, and several redevelopment programmes that will help meet the needs of an increasingly urban population.

Making new friends
Where does Duterte find USD 10 billion for infrastructure projects? The president has been overtly critical of western countries, including long-time ally United States, and has withdrawn from a number of international treaties, including the Rome Statute, the treaty that established the International Criminal Court.

Instead, he has turned to China, working to normalise relations after years of heated and open disputes over South China Sea sovereignty. As a result, China has pledged USD 7.3 billion in infrastructure investments. In October last year, Duterte signed a raft of bilateral agreements with China and Russia, and announced that he would invite a Chinese company to run a third big entrant to the Philippines’ duopoly-controlled telecoms market, according to Forbes.

Attracting foreign direct investment
High on Duterte’s agenda is a push to attract more foreign investment, which has been flagging. According to Financial Times, cumulative net FDI inflows fell 5 percent to USD 5.1 billion in the first eight months of 2017, from USD 5.4 billion the previous year.

Corporate tax reforms have reduced the tax burden on smaller companies but at the same time have removed tax privileges long enjoyed by inward investors, especially in the business process outsourcing sector.

“For long, foreign investors were lured not only by the relatively cheap and highly skilled labour in the Philippines, but also tax holidays offered in new boom sectors as well as affordable office rent and real estate costs,” wrote Richard Heydarian, a Manila-based academic write in Nikkei Asian Review. “Now, these attractions are under question, as the government raises operating costs by slashing tax privileges and levies new taxes on real estate. New taxes on the growth sector such as business process outsourcing has put off some foreign investors. In particular, this has hit American companies, which have been a leading source of investments in the Philippines throughout history.”

During Duterte’s first year in office from mid-2016 to mid-2017, American investments dropped by 62 percent from 2016 to a 13-year low of PHP 8.36 billion (USD 160 million) in 2017. South Korean investment in the Philippines collapsed by as much as 93 percent in the same period, from a high of PHP 11.8 billion in 2016 to only PHP 7.32 million in 2017, as South Korean investors looked elsewhere, especially to Vietnam.

In November 2017, Duterte announced a directive to government agencies to start to scrap or ease barriers that foreigners face in various business and employment sectors in order to pursue stronger economic growth, create fairness and to enable partnerships to develop.

According to Reuters, the directive covered eight areas, including construction and repairs for government-funded projects, private recruitment for both domestic and overseas employment, teaching at higher education levels, as well as processing and “trading except retailing” of rice and corn.

Human rights violations
It is not just the tax reforms that are keeping foreign investors away. Duterte is facing a threat of rising Islamist rebellion in the country’s south, and his war on drugs, which has killed 3,800 drug suspects in 14 months, has been condemned by human rights groups and many foreign leaders. The country is currently looking at reinstating the death penalty for drug-related crimes.

In September 2017, credit ratings agency Moody’s Investors Service, although reaffirming the country’s investment-grade credit rating, pointed towards Duterte’s domestic conflicts a rising risk to the economy. “The re-emergence of conflict in the southern Philippines, as well as the Duterte administration’s focus on the eradication of illegal drugs, represents a rising but unlikely risk of a deterioration in economic performance and institutional strength,” the credit ratings agency said.

“A worsening of the Islamist insurgency in Mindanao ... could lead to an expansion of martial law, undermine both foreign and domestic business confidence, and disrupt economic activity in other parts of the country,” it added.

Manila’s business community, however, remains positive, partly due to the appointment of a number of high profile technocrats such as former Asian Development Bank economic Ernesto Pernia, and Benjamin Diokno, a respected economist and veteran policymaker, in key policy positions.

“Right now is a great time to invest,” Ebb Hinchliffe, executive director of the American Chamber of Commerce to the Philippines, told Financial Times. “This government is pro-business — just don’t listen to the president, listen at the cabinet level.”

Left: President Rodrigo Duterte delivering his first State of the Nation Address at the Batasang Pambansa with Senate President Aquilino Pimentel III and House Speaker Pantaleon Alvarez on July 25, 2016

Facts
- The Philippines is battling a widening trade deficit, with debt servicing putting a strain on the economy.
- The trade deficit ballooned to USD 4.02 billion in December, a record for any month, from USD 2.67 billion in November.
- Exports grew 6.6 percent to USD 4.06 billion in November 2017 from the same period in 2016. Imports rose 10.5 percent to USD 8.74 billion during the same comparable period, the Philippine Statistics Authority state.
- The full-year gap in 2017 was USD 29.8 billion, from USD 26.7 billion in 2016.
- The unemployment rate was 1.5 percent to USD 4.06 billion in November 2017 from the same period in 2016. imports rose 10.5 percent to USD 8.74 billion during the same comparable period, the Philippine Statistics Authority state.
Manufacturing a quality collection requires trust, patience, knowledge, experience and a lot of diplomacy.

They say, behind every great designer, there is a great manufacturer.

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The Graphs

In order to give the readers an understanding of where the Asian countries are in their development, we have assembled an overview of various indicators for Norway, USA and the most important South and Southeast Asian markets. The graphs in the two right columns are the result. Countries are listed by their two-letter ISO 3166-1 code. The data is assembled from a number of sources. See below for a full list.

Basic Figures Norway (2017)
GDP Growth 2017 1.9%
GDP Growth 2018 projected 2.0%
Export Growth 2017 0.8%
Export Growth 2018 projected 1.9%
Trade Balance NOK 176.1 bil
Current Account Balance NOK 35.0 bil
International Reserves (April) NOK 542.3 bil
Unemployment 4.2%
Corporate Income Tax 28%
Value Added Tax 25%

Norway’s Top 10 Exports 2017

<table>
<thead>
<tr>
<th>Product</th>
<th>Percentage</th>
<th>Value NOK bill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum</td>
<td>31.5%</td>
<td>271,462</td>
</tr>
<tr>
<td>Gas</td>
<td>25.9%</td>
<td>222,562</td>
</tr>
<tr>
<td>Fish</td>
<td>10.7%</td>
<td>92,241</td>
</tr>
<tr>
<td>Engineering products</td>
<td>9.3%</td>
<td>81,920</td>
</tr>
<tr>
<td>Chemicals</td>
<td>6.4%</td>
<td>54,689</td>
</tr>
<tr>
<td>Non-ferrous metals</td>
<td>5.5%</td>
<td>47,293</td>
</tr>
<tr>
<td>Raw materials</td>
<td>4.2%</td>
<td>16,566</td>
</tr>
<tr>
<td>Scientific instruments</td>
<td>1.2%</td>
<td>10,298</td>
</tr>
<tr>
<td>Iron and steel</td>
<td>1.7%</td>
<td>15,065</td>
</tr>
<tr>
<td>Others</td>
<td>10.8%</td>
<td>92,851</td>
</tr>
<tr>
<td>Total (+14.5% vs 2016)</td>
<td></td>
<td>860,692</td>
</tr>
</tbody>
</table>

Geography
Geographic Area: 385,199 sq. km
Highest peak: Galdhopiggen 2,469 m
Inland water areas: 16,360 sq. km
Coastline: 25,148 km

Demographics 2017
Population Norway: 5,3 mill
Population Oslo: 875,000
Life expectancy M/F NO: 84/84
Inhabitants per sq. km land area: 14.4
Population Growth: 0.84%

Sources:
Wikipedia/IMF; GDP growth; Wikipedia/CIA Facebook; Global Competitiveness; World Economic Forum; Inflation 2017; CIA: Ease of Doing Business and Days to Start a Business; World Bank: Corruption; Transparency International; Democracy Index; Economist Intelligence Unit; Mobile Telephone Penetration: World Bank; Electric Consumption: International Energy Agency Basic Figures, Norway: Statistics Norway. Data was downloaded from sources on 27 May 2018.
Norwegian Chambers of Commerce and Business Associations are established in most major Asian countries. The organisations work to create venues and channels for exchanging and sharing information, to improve local business conditions and opportunities for Norwegian companies and to increase trade between their respective host countries and Norway.

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