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Foresight: Ocean Industries in Singapore

Possible future scenarios

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Background:
High-end economic scenarios for Singapore

Background: COVID-19 in Singapore

- **A brief overview:** On 7 February Singapore's Disease Outbreak Response Condition (DORSCON) was raised from yellow to orange. With DORSCON Orange the response was intensified, and large scale events were cancelled. For the next months, Singapore was successful at containing the spread through contact tracing and quarantining and most citizens, schools and businesses could continue more or less as before. WHO praised Singapore, and it was seen as a near-exemplary response in this period.

- From April, the virus spread in Singapore's migrant workers population. More than 300 000 workers from countries such as India and Bangladesh, live in dorms around the island. These workers are an integral part of Singapore's economy, taking up work as builders, labourers, cleaners etc**.** By May 22, Singapore's total cases were up to 30 000 cases, primarily in the migrant dorms.

- **Circuit Breaker:** On 3 April, Singapore announced the so-called 'Circuit Breaker' (CB) to go into effect from April 8. The CB is effectively a lock-down, where the population is only allowed to exit their homes for grocery shopping and exercise. Offices, shops, restaurants, sports facilities etc closed. The CB is in place till June 1

- **Travel restrictions:** Furthermore, travel restrictions have been put in place since March 23. Currently only Singapore citizens and permanent residents can enter Singapore. Foreigners holding ICA-issued long-term passes, must obtain permission from the relevant agency before they can enter Singapore.

- **Support measures:** Between 18 February and 6 April, the Singaporean government launched three support budgets, amounting to SGD 60 million (12 % of Singapore's GDP).
- Measures under the budgets included wage support schemes, measures to help businesses, and government supported loans. The government has also put in place a "legal circuit breaker" with the COVID-19 (Temporary Measures) Act to provide relief for businesses that are unable to fulfil their contracts due to COVID-19 related events. The act covers contracts entered into before March 25 2020, and will initially be in place for 6 months.

Looking Forward – A Three Phased Re-Opening

- On May 19, the authorities announced a three-phased approach to safely reopen the country from 2 June.

- **Phase 1 – Safe Re-opening:** Besides the essential businesses that are already operating, most manufacturing companies can resume work. Those who can work from home, should continue to do so. Retail outlets, personal services and F&B dine-in will not re-open. Pre-schools to gradually reopen. Continue to leave home only for essential activities.

- **Phase 2 Safe-Transition:** If transmission rates remain low, Singapore will move to Phase 2. More businesses, starting with F&B dine-in, retail stores, gyms will gradually reopen. Those who can work from home should continue to do so. Social activities resumed in small groups. Will continue to ease measures until Singapore reaches a new normal, in Phase 3.

- **Phase 3** – **Safe Nation** In this phase gatherings (business, social, cultural, religious) will have resumed, with limits to gathering sizes. Phase 3 will be the new normal until a vaccine or efficient treatment is in place.

- **Timeline of re-opening:** Singapore authorities will monitor infection rates in phase 1, and infection rates will have to remain low and stable for "a few weeks" before moving to Phase 2. According to Health Minister Gan Kim Yong: "We will need to, by and large, observe two periods of incubation - each period of incubation is 14 days. So minimally we will have to look at 28 days before we think about additional relaxation". As such, Phase 2 will earliest start in July 2020. Re-opening of borders will happen gradually, separately from the timing of the three phases as it depends on the global situation.

Geopolitical/geoeconomical considerations

- The global pandemic is pushing the pre-existing deterioration of the US-China relationship. The geopolitical situation is important to bear in mind as it will influence global and regional value chains. Furthermore, Singapore is in a special position, in the heart of Asia, with both the US and China as two of its most important partners and will have to navigate the tensions carefully. The situation provides not only challenges, but also opportunities for Singapore and South East Asia.

- **The US** is Singapore's largest foreign investor, and a trusted partner in matters of security. According to experts, it is possible that as US-China decoupling increases, more American tech firms will relocate from China and Taiwan to Singapore.

- **China** is Singapore's largest trading partner, and Singapore is the top foreign investor in China (Enterprise Singapore 2020). As a regional hub, Singapore has an important role in China's BRI project. Currently, one-third of all Chinese outwards investments to BRI projects are flowing through Singapore (Enterprise Singapore 2020). The bilateral relationship has been deepened through the government-to-government projects China-Singapore Suzhou Industrial Park (SIP), Sino-Singapore Tianjin Eco-City (SSTEC) and China-Singapore (Chongqing) Connectivity Initiative (CCI). If China opts for massive infrastructure spending in the post-pandemic recovery, it is likely to open opportunities for Singaporean businesses

- The pandemic has intensified US-China decoupling and plans to reduce dependence on China in global value chains. On May 14th President Trump said the US could "cut off the whole relationship" with China. In Japan, a fund to assist Japanese firms to relocate from China is part of Abe's response package to COVID-19. Even before the pandemic, overseas production was moving to ASEAN. Singapore is enjoying the benefits of its longstanding status as a regional hub, knowledge centre and capacity builder and is likely to benefit from increased activity in ASEAN.

Fast recovery (V-curve)

Full lockdown ends by summer

Global travel resumes

New outbreaks seen as less likely

Social distancing is phased out over summer

World trade may see changes & GVC debate

Some changes in workforce

Consumer behaviour unchanged

Oil prices rebound

Government supports status-quo

Possible drivers:

- **Widespread antibody testing reveals large part of the population already had virus (so are immune)**
- **Vaccine developed and enters mass production sooner than thought**
- **Forthcoming research suggests that immunity prove long-lasting**

Short overview:

In Singapore a fast recovery could be a scenario where the phased reopening goes without backlashes, measures are effective, and the virus is under control. Following China, rest of Asia and the rest of the world will have a quick return to near normality, and the global travel will resume within 3-months.

Some sectors are hit hard by the lockdown. However, the government is intent on rescuing all struggling companies and will not "use" the occasion to consolidate industries or force industries to transition. Government measures like guarantees, liquidity support and short-time work schemes foster a quick and strong rebound. We may see a deep, but quick recession, and the global economy will get back to near pre-Covid-19 levels where supply chains starts to recover. In this scenario, consumers will regain their confidence, and we won't see a big change in behaviour.

However, some significant changes may take place.
The crisis lead to acceleration in innovation and technological leapfrogging. New online business models will change many industries.

Also work force may look different for several reasons. Technological developments and automatization may change the way we work. Furthermore, Singapore's work force consists of more than 1 million foreigners. The "migrant workers" worst affected in the case of Singapore, are important for Singapore's economic competitiveness. A discussion regarding Singapore's migrant workers can be expected.

The crisis also exposed weaknesses in global value chains (GVCs), and how clustered they are in China. Accelerated already existing dynamics and debates.

Oil prices rebound.

Forward to a new world (U/W-curve)

Full lock down ends by +/- summer (varies by country)

World trade changes

Global travel remains restricted

Workforce changes

Social distancing remains a feature for 12 months

Consumer behaviour is changed

New outbreaks seen as managable

Oil prices fluctuate

Government supports innovative companies

Possible drivers:

- **Widespread testing gives better data on possible winter outbreak**
- **Better contact tracing helps manage another outbreak without full lockdowns**
- **Progress made on vaccine by year-end, but will not be widely available until late 2021**
- **Critical care surge capacity increases. Certain drugs available to help reduce time in hospital**

Short overview:

A protracted, U-shaped recovery, assumes that the lockdowns eventually manage to flatten the curve, although not entirely. In Singapore, the phased re-opening is slow, and it takes up to 6-12 months to reach the third 'Safe Nation phase'. Crisis management is more experienced than in Spring 2020 and containment measures could be more tailor-made. Sectors and regions are affected differently.

Global travel remains restrictive, but a combination of vaccine development, more widespread testing capacity and higher surge capacity within critical healthcare services, means full lockdowns can be largely avoided if the virus spreads again.

This scenario leads to significant changes. As the length of the lockdown is more than a year, there will be more fundamental changes to both consumer behavior, work force and world trade. Most countries will experience a more severe contraction of economic activity than during the financial crisis and will put more emphasis on self-reliability. Trade patterns will be affected by more protectionism, nationalism/regionalism. As we see a decoupling from China, Singapore may experience both challenges (as China's biggest investor), and opportunities as more production may be moved to Southeast Asia where Singapore's role as a knowledge hub and capacity builder can create new opportunities.

Virtual life becomes the norm for both people and businesses, and the 'fourth industrial revolution' accelerates.

Government will allow inefficient segments/industries to consolidate and will support innovative companies that show an ability and willingness to change and restructure. Increased focus on digital technology, sustainability and autonomy – will see a 'green tech' revolution and a restructuring of supply chain. Some sectors will experience huge opportunities in this shift. As an innovation-centre, with many free trade agreements, and good governance Singapore is in a good position in this shift.

The recovery is slow but gradual and includes changes to how we live our lives and do business. As a result, the economic recovery will be u-shaped. Under the assumption that the virus the virus is back under control by April 2021 and economies, as well as societies, begin to return to normality we will have a w-shaped recovery.

Long-lasting (L-Curve)

Full lock down remain largely in place

World trade is changed

Global travel remains restrictive

Consumer behavior is restricted

Social distancing remains a feature

Work force is restricted

New outbreaks seen as not managable

Oil prices remain low

Inefficient government intervention

Possible drivers:

- Countries unable to test all people displaying Covid-19 symptoms
- Antibody testing not rolled out to masses. Limited visibility on % of population that is now immune
- Vaccine unavailable to the masses for 12-18 months
- Immunity is found to be short-lived and/or virus shows signs of mutating

Short overview:

To give a sense of how the worst-case scenario for the global economy might look, we assume here that the lockdown measures last until the end of the year. Public health-responses fail to control future outbreaks of the virus for an extended period of time (e.g. until a vaccine is developed). Financial systems break down, and fiscal stimulus packages fail to boost the economy. The impacts are unprecedented in recent history.

Emerging Asian economies suffer both from the direct impact of lockdown measures, but also the accelerating risk aversion in financial markets, as investors shift ever more of their portfolios into “safe” assets. Singapore as a trade hub sees GDP contract with more than 10%.

We witness a de-globalisation that results in shorter supply chains and isolationism. Healthcare systems are under severe stress. Oil prices will remain low and trading patterns are affected substantially with protective measures. Singapore will increase its focus on self-reliance.

The technological advances are significant. Less privacy, as it is obligatory to share data with government.

Borders will remain largely closed. In Singapore, global talent, university students and specialists are not able to enter the country for a long period of time. Companies are only able to hire locally and have to rely on digital meetings and local expertise.

We're assuming that things return to normal from Q2 2021. 2020 would go down in history books as the year with most severe recessions ever, seeing most economies shrinking at double-digit rates for the year as a whole. The rebound in 2021 would be relatively muted and it would take until 2023 before most economies have returned to their pre-crisis levels.

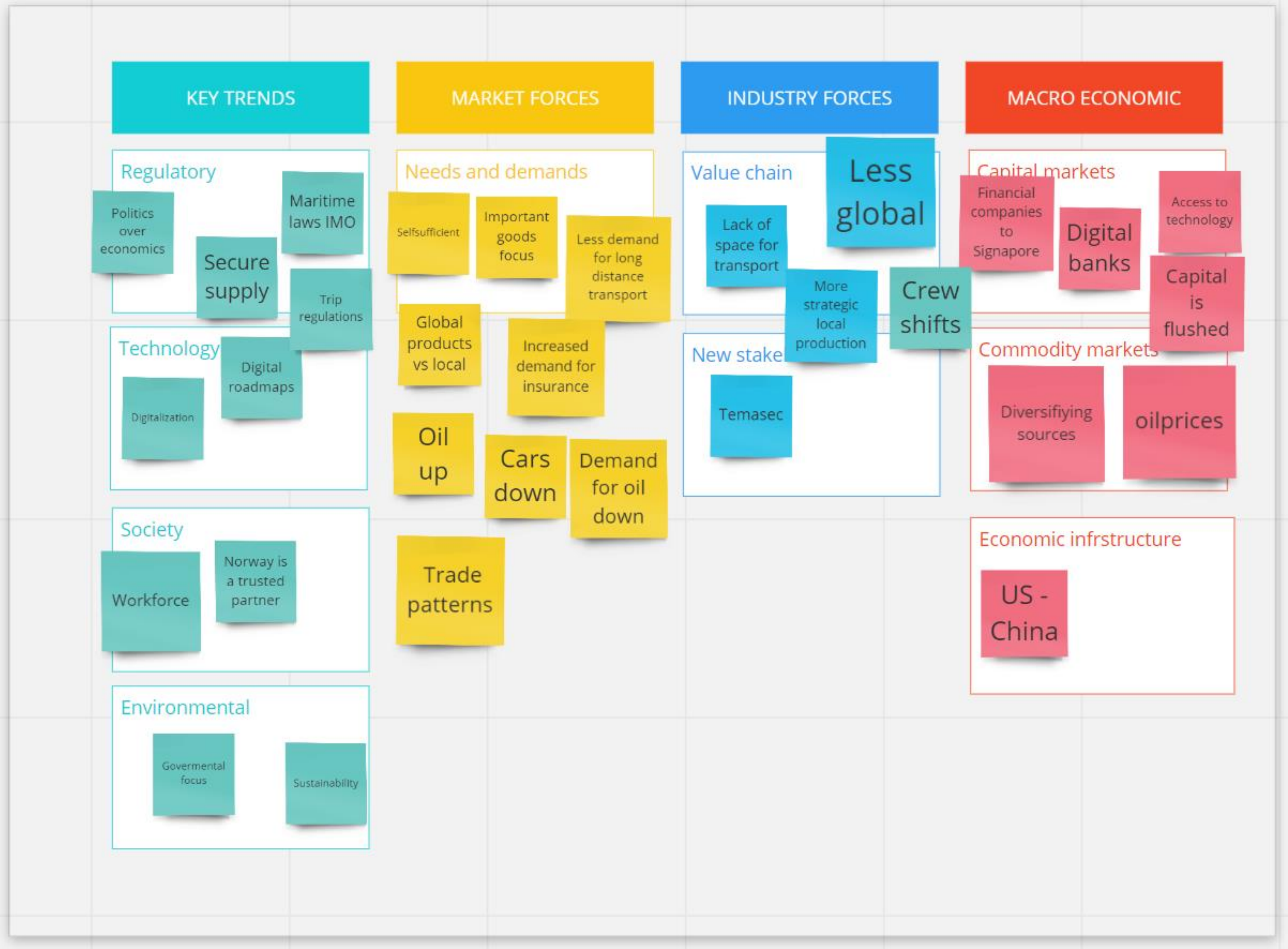
Taks 1: The project ambition

•Context: Ocean industry

•Scope: Singapore

•«The project will examine how the ocean industry might develop in Signapore in light of the Covid-19 and other externalties that might have implications for future opportunities and threats for Norwegian companies. The reult will be used to explore different business models for IN Singapore»

Task 2: Categorizing results from assignment one



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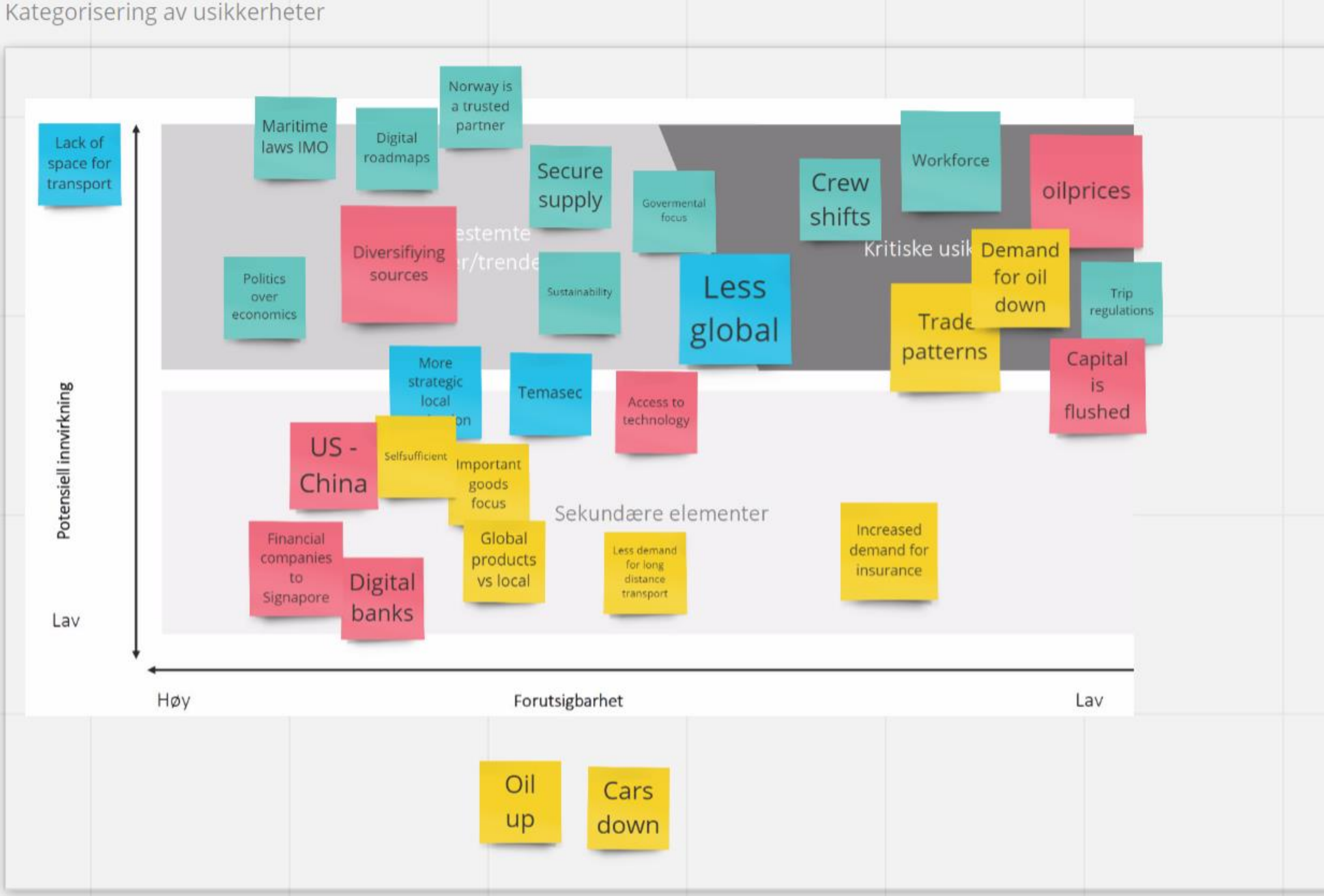
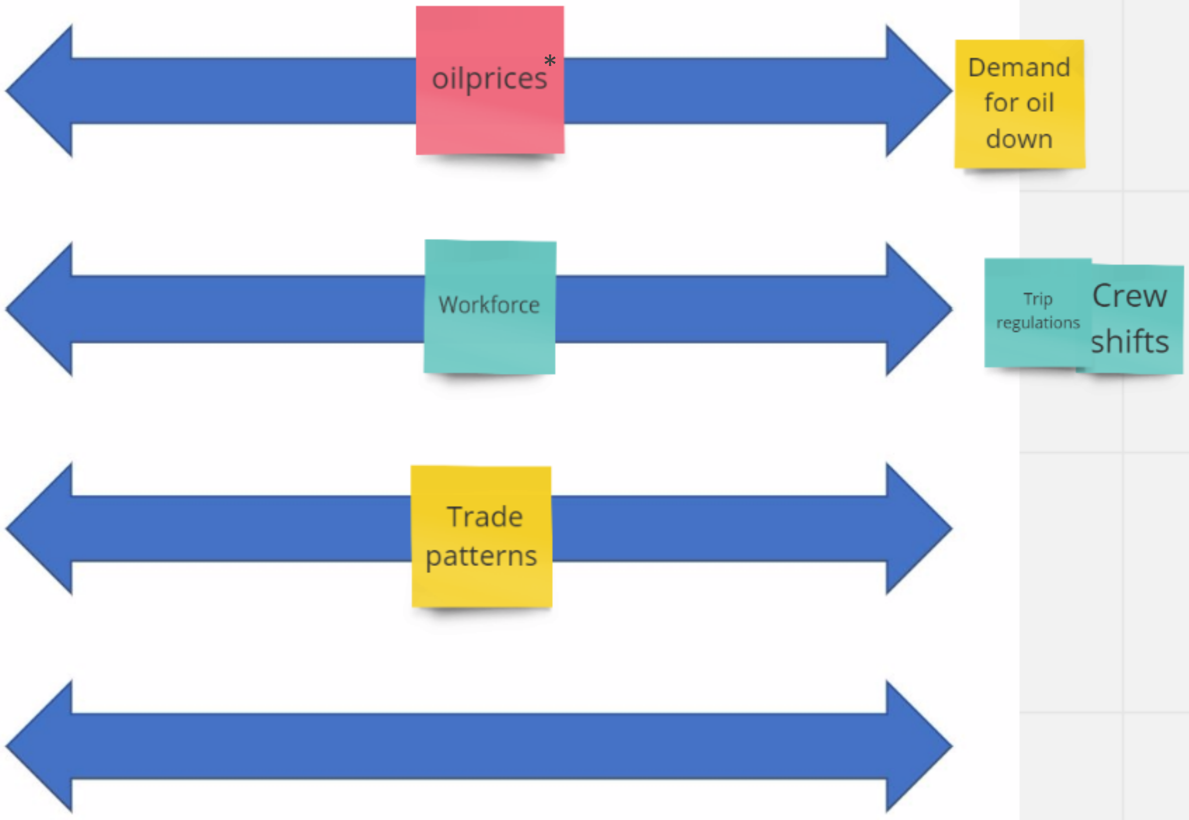
Task 3: Handling risk



Task 4: scenario axis

Results:
- Global trading patterns
- Workforce changes



* The oil price follows the general market trends – although important, it is less interesting

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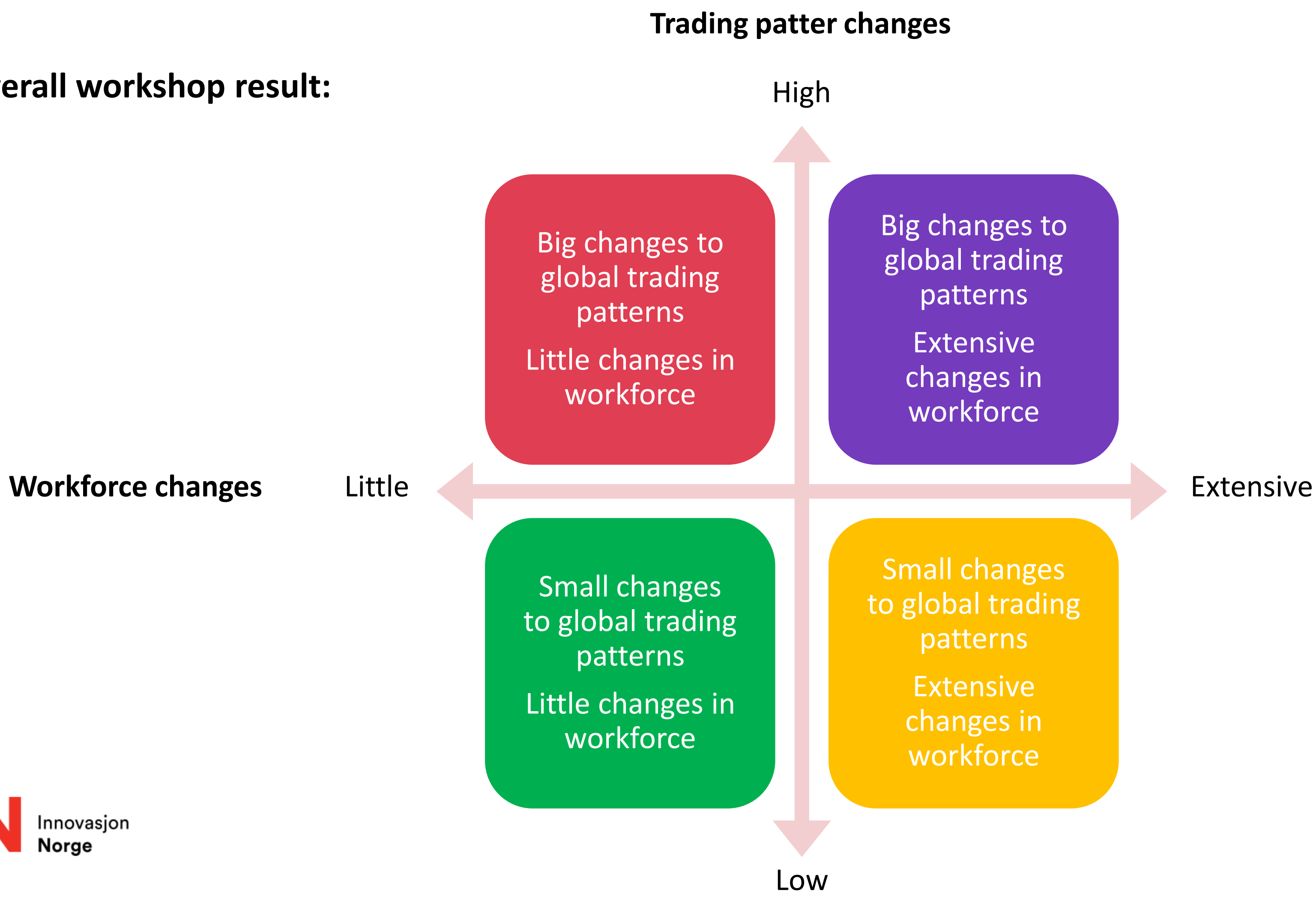
Overall workshop result:



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Mixing the global economy scenarios with the industry scenarios

	Big changes to global trading patterns Little changes in workforce	Big changes to global trading patterns Extensive changes in workforce	Small changes to global trading patterns Little changes in workforce	Small changes to global trading patterns Extensive changes in workforce
The V-curve	✗	✗	✗	✗
The U-curve	✗	✗	✓	✗
The L-curve	✗	✓	✗	✗

- To avoid having too many scenarios, we chose to focus on the U- and L-curves (V-curve not relevant).
- To accentuate the differences better, we chose to develop two scenarios with opposing characteristics.
- Although interlinked, we chose to look at offshore and maritime, respectively.

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Industry scenarios

Maritime in 2023: L-curve scenario – big impact on workforce, big impact on trade patterns

Causes (for L-curve)

- July 2020: the re-elected government bends to increasing pressure from the shipping industry to relax immigration constraints for ship crew and services personnel, but during Q3/Q4 2020: several waves of COVID19 surges; government imposes new lockdowns and severe immigration bans for mariners.
- At the same time, at the election on July 10^{th} 2020, having gained som additional political power the opposition parties force through reforms to improve the working conditions and minimum salary for yard and maritime services foreign workers.
- 2020 and 2021: While Singapore keeps its port effectively unavailable for ship crew transfer, other ports including Port Klang (Malaysia), Jakarta and Ho Chi Minh take the opportunity to relax immigration bans. Shipping companies, ship owners, ships services companies and brokers moves their business out of Singapore.
- At the same period, global sustained economic depression, trade wars between US and China, anti-globalism and focus on self-reliance has led to substantially reduced trade through Malacca straights and demand for port services in Singapore.

Effects for Singapore

- The overall maritime industry in Singapore contracts from 7% of GDP to 3.5%, driven by reduction of activity and revenues, exodus of international shipping and ship management companies.
- The higher salaries puts pressure on the compatibility of the yards, leading to consolidation and bankruptcies The few remaining yards are undergoing significant transformation to high-tech and highly specialized yards. The yard industry is reduced to 50%, specializing on ocean energy projects in Taiwan (offshore wind, electricity substations), deep-sea mining vessels and subsea installations and large scale aquaculture installations.
- The maritime financial ecosystems maintains in Singapore, since political unrest offers in e.g. Hong Kong is no relocation option.
- The overall result is significantly reduced, but much sharpened and tech-driven maritime industry with more specialized workforce; higher percentage of Singaporean and higher educated PRs.
- After 3 years of significant slimming of all aspect of the maritime industry, Singapore has started recovery as a highly digitalized, automated and decarbonized port and maritime centre of Asia, and is regaining it's former position as a leading maritime capital of the world.

Effects for Norwegian business

- Norwegian maritime companies engaged in port operations and ship services was forced to scale down, and some shut down business.
- In 2021 the Norwegian Maritime Cluster was established to support Singapore's maritime industry in its digital and sustainability transformation.
- Although the Norwegian maritime community also was significantly reduced in 2022and 2023, the remining Cluster was in end of 2013 again growing with high-tech, high-quality companies and services.

Maritime in 2023: U-curve scenario – little impact on workforce, little impact on trade patterns

Causes (for U-curve)

- The COVID situation for the guest workers was finally brought under control by Q3 2020, and most travel restrictions to countries of origin of yeard, maritime services and crews were lifted by end of year.
- The election in July 2020 was, by and large, a solid win for the incumbent PAP, which saw no reason to change work or salary conditions for guest workers – except more mandatory health checks and sanitary conditions ad the dorms.
- The narrow win of Biden in November 2020, and despite Trumps refusal to leave office, changed US policy vs globalism and slowly mended the damages imposed by the Trump administration. Global trade pattern remained more or less the same, even enhanced by strong economic bounce back in Asia and Europe. The port of Singapore remained even more relevant as a trading and services/bunker hub.
- Higher focus on environmental sustainability triggered higher demands for more advanced and specialized vessels, of which the Singapore yards took advantage of.

Effects for Singapore

- The overall maritime industry in Singapore regained its contribution to national GDP, growing slowly to 10% by 2023 as economies rebounds and retail trade boomed. Port operation and innovative digital products, innovative (low carbon) ship design and new ocean technologies were the main driver for continued growth.
- The continued low salary level for yard and services maintained Singapore yard's competitiveness. Trusts from sustainability and digital transformation led to significant consolidation and merger of companies that were not able to transform.

Effects for Norwegian business

- The Norwegian maritime community in Singapore established the Norwegian Maritime Cluster in 2021 to align Norwegian companies to take advantage of the digital transformation of Singapore maritime industry.
- New companies, start-ups and growth companies took advantage of the growing markets on ocean energy; aquaculture and deep sea mining in Southeast Asia with base in Singapore.

Offshore 2023: L-curve scenario – big impact on workforce, big impact on trade patterns

Causes (for L-curve)

- Massive delays in projects executions and new regulations imposed because of COVID-19 restrictions had impacted the supply of foreign skilled workforce where Singapore is heavily dependent for the offshore industry.
- The weakness in oil demand has been compounded further by the weakness of the global economy. In addition, the trade war between China and US has increased uncertainty for businesses and disruptions to supply chains.
- Trade patterns will also change as supply chains shift and countries try to reshore more production at home or move closer to home base.
- Depressed global demand and reduced Capex spending and investments by oil majors had impacted the demand for new projects impacting demand for offshore workforce.
- Coronavirus has also exposed existing weak spots in other adjacent offshore sector like LNG. Consumption has slumped in an already vastly oversupplied market that is reliant on archaic pricing mechanisms, hampering efforts to rebalance supply and demand.

Effects for Singapore (for L-curve)

- In offshore and several industries, bankruptcies and layoffs will rise. Companies minimise permanent headcount and turn to more contract workers for short-term projects.
- it is almost certain that the current economic model—one that relies heavily on migrant workers for growth and development—had been rethought and the promotion of technology to promote productivity within the offshore industry.
- Singaporean yards faced strong competition in new orders as they continue to get a smaller share of the pie with intense competition from Chinese and Korean yards. In the global production unit construction market, where Chinese yards are currently involved stands at about 70 per cent of floating production storage and offloading units (FPSOs) due for delivery in 2019-23, an increase from a market share of below 20 per cent in 2001-18.
- Despite the support from Singapore government, many offshore players will likely be operating well below capacity and the industry expects more merger and acquisition and restructuring in the offshore sector with the potential to help consolidation.

Effects for Norwegian businesses (for L-curve)

- Norwegian suppliers will need to scale down its operations in Singapore and reinforce its strategic presence nearer the market that it serves.
- Increased local competition. There is a rise in protectionism, at least in the near term, as countries move to protect favoured industries from competition amid deepening recessions and job losses.
- According to Equinor, its total procurements increased from NOK 141.7 billion to NOK 161.6 billion from 2018 to 2019. This expected to be averaging about NOK 140 billion for the next 3 years. This is related to the high project activity, increased exploration, and new fields in production in the company.
- Norwegian suppliers will need to respond to the competitive market to rethink how to achieve overall cost efficiency, collaborate with key service partners in local markets and workers for installation or maintenance operations at short notice.

Offshore in 2023: U-curve scenario – little impact on workforce, little impact on trade patterns

Causes (for U-curve)

- The Covid-19 situation in Singapore is well under control with the dormitory foreign workers are gradually be put back on track after testing and isolated. Singapore has put in place a rigorous plan to avoid a possible spike in Covid-19 cases.
- In post covid-19, the blueprint launched by the government had gathered momentum to lift the marine and offshore engineering (M&OE) sector out of the doldrums. The sector is expected to add 1,500 new jobs and contribute S$5.8 billion to Singapore's gross domestic product (GDP) by 2025 through its Industry Transformation Map (ITM).
- Despite a global economy that is both volatile and uncertain, a growing population with higher standards of living needs more energy. At the same time, the industry must also deliver on the need for a more sustainable energy future.

Effects for Singapore (for U-curve)

- The positive impetus as an outcome of the government's efforts that pledged about $67bn (£53bn), or nearly 20% of Singapore's GDP, in stimulus measures to support businesses and households had stimulated local economy back to normalisation.
- The return of long term confidence as Singapore has become one of the leading offshore wealth management hubs globally, and its role is expected to strengthen as Asia-Pacific continues to be the fastest-growing region for high-net worth individual (HNWI) population and wealth.
- More focus on bidding high quality offshore projects as Singapore had invested about $107 million to set up the Technology Centre for Offshore and Marine Singapore to integrate public research and industry expertise to develop innovative concepts and infrastructure for marine and offshore operations.
- Better training and Increased work productivity of the workforce reinforced Singapore's competitive edge as a leading oil and gas engineering hub.

Effects for Norwegian businesses (for U-curve)

- Norwegian offshore cluster has been successful and expanding into global markets with advanced and robust technologies. But cost levels are rising, and profitability levels are challenged. There is a need to develop more cost-effective solutions for improving overall efficiency of the industry.
- The new reality in the industry also opens for new ways of organising the value chain, creating a network of specialised partners that can provide real-time support and give advice in emergency situations during operations.
- For Norwegian companies to further accelerate the pace of adoption of digital technologies, automation and its ability to respond to a complex supply chains and support efficient resource optimisation.