

The New Norm of Manufacturing

How To Combat the Complexity of Shifting
Supply Chains Out of China

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Executive Summary



Manufacturing, particularly within the tech and electronics industry, is moving away from a China-focused, cost-centric model, and towards a more diversified, regionalised strategy with a much stronger focus on resilience and agility. This change is driven by geo-political development such as the US/China trade war alongside increasing labour costs that have combined to make China a less attractive manufacturing base. Black swan events such as COVID-19 have served to validate this approach with manufacturers quickly realising the risk of having too lean a supply chain.

As a result, approaches such as China +1 and nearshoring have emerged as key strategies in building more resilient supply chains that are able to respond more quickly to world events and fluctuating demand. According to a survey by research firm Gartner, 33% of supply chain leaders have moved sourcing and manufacturing out of China or planned to do so by 2023¹ with increasing tariff costs cited as the primary reason for this shift as well as supply chain resilience and moving closer to consumers. At the same time, new emerging markets are establishing themselves as key destinations for products, encouraging manufacturers to shift supply chains accordingly to accommodate new consumers.

Thus, a new norm is being established; one in which manufacturing supply chains are increasingly more complex and fragmented with multiple sources, routes, and destinations, and businesses need to consider how best to navigate this brave new world.



Key Learnings

- China +1 and nearshoring models will become the new norm as manufacturers look to diversify their supply chains and reduce their reliance on China.
- In this new norm, supply chains will be significantly more complex and fragmented accelerating a need for globally integrated logistics and sophisticated flows of data and tracking.
- However, China will continue to be a key global manufacturing centre due to its advanced infrastructure, relatively low labour costs, and the prevalence of suppliers central to the needs of electronics manufacturing.
- Countries such as Vietnam and Mexico, and regions such as Eastern Europe will become key new locations for manufacturing. However, businesses will face difficult challenges due to less mature infrastructure and because many component parts will still need to be imported from China.
- While emerging markets represent huge opportunities, this will add to the complexity of supply chains and businesses need to establish “feet on the ground” knowledge to ensure cost-effective delivery to market.

¹ <https://www.gartner.com/en/newsroom/press-releases/2020-06-24-gartner-survey-reveals-33-percent-of-supply-chain-leaders-moved-business-out-of-china-or-plan-to-by-2023>

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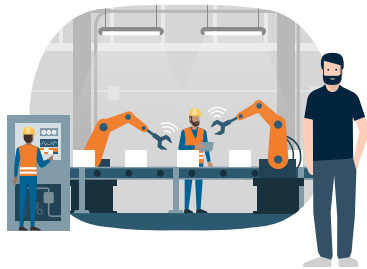
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China + 1 Strategies

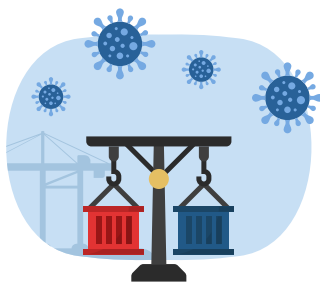
While over the past two decades, China has been an ideal manufacturing base for global tech companies, a gradual increase in labour wages coupled with the impact of the US/China trade war has seen it become a less attractive option for businesses. This trend has only been accelerated by events such as COVID-19 with businesses increasingly concerned over how resilient their supply chains are to global or regional disruptions.

In response, a growing number of companies are adopting a China +1 strategy that aims to mitigate these risks by establishing additional manufacturing centres outside China.

- 1 Peter is the owner of a company selling laptops. Because of low labour costs and skilled labour force in China, a few of the manufacturing centres are located there.



- 2 However, the continuously rising labour wages over the past 2 decades and uncertain events (such as the recent trade war and COVID-19) have reduced the attractiveness of China as a manufacturing location.



- 3 As a result, Peter recently decided to establish additional manufacturing centres in Vietnam to mitigate risks.



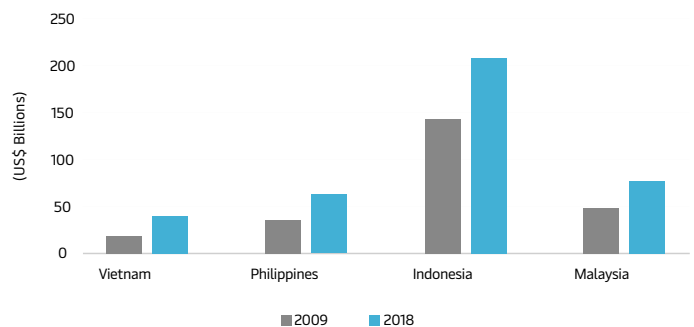
As evidenced by the Gartner survey, this shift has already begun and we expect it to continue growing with an increasing number of businesses looking for additional manufacturing options outside of China. This will create a new norm for the manufacturing industry that replaces the Sino-centric approach that has dominated global supply chains for much of the 21st century.

In theory, China +1 gives businesses additional flexibility to scale up or down production in China in the event of global or regional supply chain distribution, by shifting additional manufacturing to an alternative location. At the same time, this also makes it possible to reduce labour costs and avoid trade-war-induced tariffs and costly legislation.

Popular destinations include Vietnam, the Philippines, Indonesia, and other South-East Asian countries which are experiencing a significant increase in manufacturing output alongside government-backed initiatives to make manufacturing more attractive to global businesses.

For many countries, Vietnam will be the most likely destination for establishing bases and where we expect to see the biggest growth. In 2018, Vietnamese manufacturing output grew from US\$15 billion in 2010 to almost US\$40 billion in 2018, while the country's electronics sector alone grew by a 14% CAGR over 2012-2017.² At the same time, labour costs are also considerably cheaper making it an attractive prospect for manufacturers. Between 2010 and 2019, average annual manufacturing salaries in China rose 155% to approximately US\$12,000. By comparison, annual salaries in Vietnam and the Philippines are just US\$6,300 and US\$7,500 respectively.³

Electronics Industry Manufacturing Output 2009 vs 2018



² <https://www.euromonitor.com/top-10-countries-to-drive-global-electronics-production-over-2017-2025/report>

³ <http://www.salaryexplorer.com>

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Challenges

In order to take full advantage of the flexibility that a China +1 strategy affords, companies need to maintain a high level of visibility over the supply chain in order to scale up or down production effectively. Adding additional production centres necessarily adds additional layers of complexity to the supply chain that need to be managed accordingly. This challenge is compounded by a relatively less evolved supply chain ecosystem in target China +1 countries compared to China.

China has one of the world's most extensive supply chain ecosystems with an advanced infrastructure to support it. As the world's largest consumer electronics producer, China has more than five times the electronics suppliers based in Japan⁴ and a manufacturing output over the past five years that is some six times greater than the rest of South-East Asia combined.⁵ This means that China can manufacture most products with a smaller number of suppliers and shorter supply chains, minimal shipping, and less customs friction. Moreover, even if businesses move a substantial share of tech and electronic manufacturing, Chinese suppliers will still be responsible for a significant share of upstream component parts.

By comparison, infrastructure in popular China +1 locations is also far less established, resulting in higher logistical costs, longer lead-times, more complexity, and a corresponding loss of visibility.



"Many of the factors that made China the manufacturing base for so long are still there; skilled but relatively cheap workforce, highly advanced infrastructure, a dense collection of suppliers - when looking outside of China, you have to ask whether a new location can tick all the same boxes and, if not, how you are going to set up your supply chain to compensate."

Tom Harris

Head of Technology and Electronics, Greater China
Maersk

⁴ <https://intrepidsourcing.com/industry-reports/consumer-electronics-industry-report/>

⁵ <https://data.worldbank.org/indicator/NV.IND.MANF.CD>

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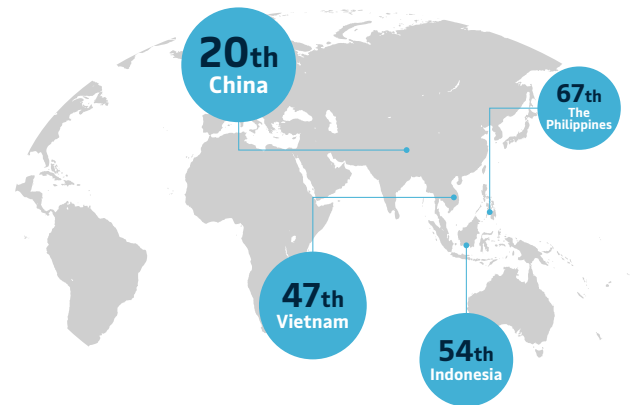
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Furthermore, China maintains a comparatively skilled labour force of manufacturing workers close to 150 million and, despite rising, labour costs are still considerably lower than most other countries. Thus, the size and education of any potential workforce will also be a crucial factor in establishing alternative manufacturing sites outside China.

The reality is that, in adopting a China +1 strategy, businesses are going to have to sacrifice at least some of the benefits that have made China such an attractive manufacturing base for the past two decades.

In weighing up the cost of transitioning to a China +1 strategy, businesses need to consider not only how an additional manufacturing base will need to be incorporated into their logistics, but also how operating in a comparatively less mature landscape will impact supply chain complexity and visibility overall.

LPI Infrastructure, Global Rankings 2018 – The World Bank



Case Study: Pivoting Around the Trade War

For one leading Chinese electronics manufacturer, the US is a critical market representing 80% of their revenue. However, ongoing trade tensions had resulted in a 20% drop in volume, causing them to reassess their traditional model. Instead of producing finished goods in China and sending them directly to the US market, they wanted to increase the resilience and flexibility of their supply chain by utilising existing overseas plants in Vietnam, Poland, and Mexico as secondary production and assembly sites. However, while their team had a good knowledge of the infrastructure at these locations, they weren't sure how best to bring them into their supply chain in the most cost-effective manner and they approached Maersk to help find a solution.

We worked closely with their team to understand exactly what their needs were and designed brand new competitive supply chains that could bring their overseas sites into play. In this new model, raw materials and knockdown kits will be sent from China to four different locations where the finished goods are then assembled before being delivered direct to the US market. This enables the manufacturer to quickly shift a significant amount of production outside of China without having to worry about losing control of costs. As a result, their supply chains are expected to be much more flexible and diversified, making them considerably more resilient for the future.

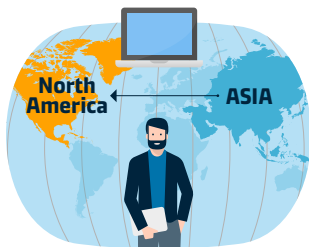
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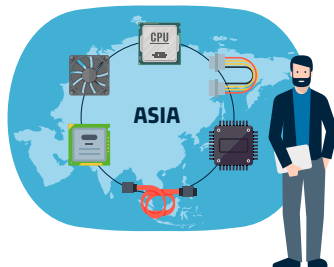
Nearshoring and Late-localisation

Nearshoring is a strategy that shifts late-stage assembly processes to a location closer to the destination market. While China +1 shifts a proportion of overall manufacturing to another location, nearshoring shifts a part of the manufacturing *process*. For example, a company building laptops for the North American market might shift the final assembly of their product to a site in Mexico, reducing lead time for US consumers. Similarly, late-localisation or late-customisation will apply final customisation to a product, for example installing a language-specific operating system on a laptop, or changing a product to meet a specific customer choice at the point of purchase, for example a customer orders a grey fridge instead of a white fridge.

- 1 Peter wants to expand his products to the US market.



- 2 Because of the skilled labour force and lower costs, upstream components still come from Asia and upstream manufacturing still happens in Asia.



- 3 To accommodate special customer needs in different markets and reduce lead time, Peter moved the assembly point to Mexico, which is closer to the destination market.



Again, this indicates a significant shift away from a China-dominated model. According to McKinsey & Co, intraregional share of global goods trade has increased by 2.7% since 2013 with this trend most notable among computers and electronic goods as well as in the automotive industry.⁶ We expect to see a considerable increase in the number of manufacturers developing nearshoring strategies with Mexico and Eastern Europe becoming increasingly important locations for accessing North American and Western European markets respectively.

While certainly the trade war and events like COVID-19 have also been relevant triggers, the rise of nearshoring strategies is part of a long-term geopolitical trend towards regionalisation. From a logistics perspective, however, this is also being driven by a need for the increased agility that comes with fulfilling orders closer to market. Nearshoring gives companies greater control over production processes and allows them to closely integrate multiple suppliers for just-in-time delivery. This means they can be more responsive to sudden changes in consumer demand, as has been the case with COVID-19.

In today's market, tech goods have a shorter shelf-life driving a need for faster delivery times while the rise of omnichannel retail and e-commerce have led to increased consumer expectations regarding lead times. Nearshoring allows manufacturers to be much more agile in meeting those expectations. Although component parts still need to be transported, once assembled, the cost and time to market for finished goods can be considerably reduced.

At the same time, nearshoring often comes with fewer cultural discrepancies and language barriers, similar time zones, and lower travel costs, meaning company headquarters can be more responsive to problems with production than they can be with bases on the other side of the world.

⁶ <https://www.mckinsey.com/-/media/McKinsey/Featured%20Insights/Innovation/Globalization%20in%20transition%20The%20future%20of%20trade%20and%20value%20chains/MGI-Globalization%20in%20transition-The-future-of-trade-and-value-chains-Full-report.ashx>

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"Tech supply chain complexity really lies upstream of manufacturing where it is a very competitive market. Businesses need to be fully aware of where all the components are originating and be able to track them effectively."

Mikael Povlsen

Global Head of Technology & Electronics
Maersk

Challenges

Similar to China +1 strategies, nearshoring and late-localisation add additional layers of complexity to an already complex supply chain. For last-minute assembly to be effective, all components need to be in place at the right time.

Tech manufacturing supply chains need to keep goods moving and reduce the amount of time they spend in warehouses along routes. While delays with a China-based manufacturing centre can be handled comparatively more easily by having nearby access to multiple suppliers, in a nearshoring scenario, multiple suppliers are considerably further away from the assembly point, making logistics a much more delicate balance.

In addition, although nearshoring can reduce problems with cultural differences, this is not always the case, especially if a nearshoring strategy is investing in a region or country for the first time. Different regulations and different landscapes will again require entirely new knowledge sets. And, as with China +1, it is vital that companies assess how mature the infrastructure is in these new production centres.



Case Study: Streamlining a Nearshoring Solution

Driven by the fact that 76% of their total sales revenue was concentrated in the US and Europe, a leading TV manufacturer had decided to adopt a nearshoring strategy to get closer to market and meet rising demand.

However, their supply chains were struggling to keep up with the movement of goods between production and assembly centres in China, Poland, the UK, Korea, and India and as a result, revenue was being impacted and logistics costs were escalating. Finally, after several unsuccessful countermeasures, the customer reached out to us for a solution that would simplify their supply chain, curb logistics cost and support their growth plans.

We studied their supply chain and implemented a three-tiered plan to streamline their logistics and maximise the benefit of their nearshoring strategy. Key to this was shifting export volumes shipped from Hong Kong port to Yantian port where we established a consolidation hub converting LCL (Less than Container Load) shipments to FCL (Full Container Load). This made the entire supply chain much more efficient as well as significantly reducing airfreight costs, saving our customer an expected US\$300,000 a year.

In the later phases, the focus will shift to an export distribution centre/ VMI setup to substantially improve control over inventory, quality and lead times.

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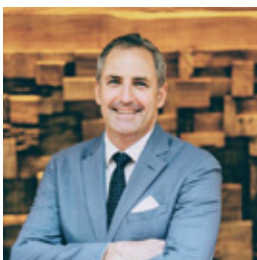
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Accessing New Markets

While locations at the manufacturing end of the supply chain are changing, so too are destination markets. With mature markets becoming increasingly oversaturated, coupled with rising affluence in emerging economies, regions such as Africa, South America, Eastern Europe, and the Indian sub-continent are becoming increasingly attractive markets for manufacturers.

In the 21st century, consumer spending in India has increased an astonishing 441% while in Kenya and Nigeria, it has risen an even more astounding 622% and 976% respectively.⁷ In 2020, there are an estimated 2.3 billion middle-class consumers in emerging economies, and according to McKinsey & Co, annual consumption in emerging markets will reach US\$30 trillion by 2025 representing “the biggest growth opportunity in the history of capitalism”.⁸

As such, we expect to see a substantial increase in the movement of goods to these markets, most notably India. At the same time, and as nearshoring grows as a viable strategic option, it is likely that businesses will look to establish manufacturing and/or assembly plants in destination markets. These plants will uniquely serve those markets, as a strategy to overcome some of the challenges posed by importing from external sources.



“To enter an entirely new market is an expensive investment. In order to truly maximise the opportunity from emerging economies, manufacturers need to do their due diligence and get feet on the ground knowledge on how those markets operate in terms of supply chains.”

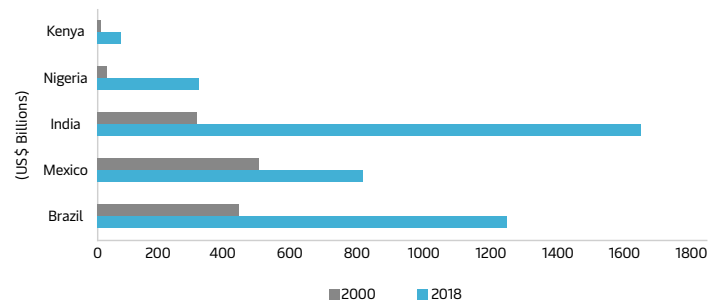
Rickard Heiss

Head of Supply Chain Products, Asia Pacific
Maersk

⁷ <https://www.macrotrends.net>

⁸ https://www.mckinsey.com/-/media/mckinsey/business%20functions/strategy%20and%20corporate%20finance/our%20insights/winning%20the%2030%20trillion%20decathlon%20going%20for%20gold%20in%20emerging%20markets/emc_decathlon.aspx

Consumer Spending 2000 vs 2018



Challenges

Developing efficient inbound flows of cargo into new markets can pose significant challenges and businesses cannot expect their logistics to operate in the same way as existing markets.

Without expert, on-the-ground knowledge, businesses face a loss of overall visibility and a resulting loss in agility and increased risk. This includes not only cultural and language barriers, but also hidden costs related to unfamiliar regulations and tax laws. In India, for example, every province cargo passes through might have their own tax depending on the method of transport used, drastically increasing logistics costs for the unwary.

Similarly, the maturity of infrastructure needs to be assessed in new markets to ascertain the most cost-effective route to market for products. As already noted, the level of infrastructure varies wildly from country to country and will have a considerable impact on lead times.

Safety and security can also be bigger concerns in emerging economies than they are in mature market and businesses will need to evaluate the risks involved in maintaining large-scale distribution centres with a sizable inventory at any one time. Nonetheless, manufacturers still need to have inventory within or close to market and, as such will need to work with partners who can provide secure warehousing locations.

In some cases, nearshoring or similar strategies may be a viable option. For example, building a manufacturing centre in India to exclusively service the Indian market is becoming a popular choice for tech manufacturers, and one we expect to see growth in the future. While challenges with outbound/inbound cargo flows from India make it a less attractive option for China +1 strategies, a well-planned supply chain solely for delivery and distribution within the country is more feasible and cost-effective than importing finished goods.

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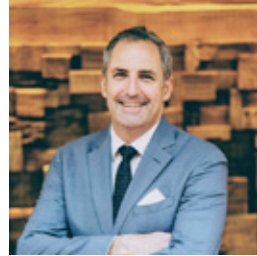
Solutions

Manufacturing is shifting away from a China-focused, cost-driven model towards a more diversified, supply chain with alternative manufacturing points, closer to market assembly centres, and new destination markets. This new norm will inevitably be more complex and businesses need to explore effective strategies to reduce or mitigate that new complexity. As Tom Harris puts it “if you can reduce the complexity, you can reduce your cost”.

Key to achieving this will be maintaining a high level of visibility over supply chains and businesses are advised to focus not only on the flow of physical goods but also on the flow of information. Utilising sophisticated data tools to keep track of goods is one of the best solutions for maintaining visibility across multiple suppliers, manufacturing centres, and destinations and we expect investment in data tools and digital solutions to become a priority for manufacturers.

Importantly, when establishing supply chains inbound or outbound from new regions, businesses need to conduct their due diligence. In this situation, it is vital to have feet on the ground experience of new markets in order to understand how they operate, the limitations in infrastructure, and any hidden costs. This will significantly increase the demand for integrated logistics partners that have the sort of global reach which mirrors the diversity and reach of a manufacturer’s new supply chain structure.

Integrated and asset-owning logistics partners, that are able to support end to end logistics supply chain solutions, will enable businesses to implement strategies that will necessarily increase the complexity.



“In the new norm of manufacturing logistics, businesses need to keep their finger on the pulse of what is happening in their supply chain. This is where data, and being able to leverage that data, plays an enormous role and so this is where we are seeing huge investments in the manufacturing supply chain.”

Rickard Heiss

Head of Supply Chain Products, Asia Pacific
Maersk



“As complexity rises in terms of both supplier origins and destination markets, this needs to be compensated with a corresponding reduction of complexity in other aspects of the supply chain. For instance, one key trend we are seeing is a move towards a smaller number of logistics partners that provide integrated solutions.”

Mikael Povlsen

Global Head of Technology and Electronics
Maersk

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Businesses pursuing China +1 or nearshoring, or looking to expand into new destination markets, are advised to review their current supply chains and explore which partners are best suited to seamlessly integrate new locations without multiplying the number of entities they need to work with.

The emphasis should be on logistics partners that;

- Can facilitate end-to-end integrated logistics to reduce the number of handoffs and minimise complications.
- Have as wide as possible global presence, and certainly a presence in the regions they are targeting.
- Are asset-owning in at least some of the expected routes, to increase the speed and efficiency of shipments.
- Utilise advanced data tools that can maintain information flows and increase visibility.
- Are long-term partners able to evolve and grow as business needs change.

Stay Ahead of the Trends



To learn more about how Maersk can help you navigate these trends, get in touch with one of our experts directly.

1. Reach out to our Tech & Electronics supply chain experts around Asia-Pacific:

- Tom Harris (China, Taiwan, Hong Kong SAR): tom.harris@maersk.com
- Jason Park (Korea, Japan): jason.park@maersk.com
- Hean Chun Goh (Thailand, Malaysia, Singapore): hean.chun.goh@maersk.com
- Phuong Ngo (Vietnam): phuong.ngo@maersk.com

Or, if you already have a dedicated Maersk contact, get in touch with them directly.

2. Learn more about what supply chain solutions we offer for the Tech & Electronics industry:

<https://www.maersk.com/solutions/tech-electronics>

3. Read some of our customer case studies: <https://www.maersk.com/news/category/case-studies>

4. Contact your local office: <https://www.maersk.com/local-information>

ALL THE WAY

