

Impact of COVID-19 on the European Market Report

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Chapter 1 Trade overview

Europe is a huge trading partner for the US in many different sectors, this can be evidenced by the fact that if the EU countries together were a single market, it would rank as the number one export market for the US (2018). These US exports of goods to the EU in 2018 were \$318.6bn, which was up 12.5% from the same point in the previous year. Top European countries for US exports include the United Kingdom, Germany, and the Netherlands. In regard to imports, if the EU countries were to form a single market, it would rank as the second largest supplier of imports to the US (2018). These US imports of goods from the EU countries in 2018 totaled \$487.9bn, which is a 12.5% increase from the same point in the previous year.

Top European countries for importing to the US were Germany, the United Kingdom and Italy. The US goods trade deficit with the EU countries was \$169.3bn in 2018, which was a 11.8% increase from 2017. There is a healthy European investment into the US also with the EU investment in the US being eight times higher than the amount of EU investment in China and India together. Total US investment in the EU is three times higher than the total US investment in all of Asia, this shows a good trade relationship between Europe and the US.

Virginia and Europe Trade Overview

The state of Virginia has a good trade relationship with the main European markets, this can be evidenced by the fact that there are four European countries in the top 10 trade partners for Virginia. These countries are the United Kingdom, Germany, Belgium, Netherlands and Italy and these countries contributed \$2.79bn in value in the year 2019. Virginia enjoys a successful export market with the EU countries, with exports from the state to Europe totaling \$10.13bn.

Figure 1 Trade Balances



Table 1 European connections – exports and imports to the USA

Top European Partner	Export (\$)	Export (%)	Import (\$)	Import (%)	Balance
United Kingdom	\$1,058,585,932	5.77%	\$772,709,143	2.63%	\$285,876,789
Germany	\$1,053,698,641	5.74%	\$2,000,313,829	6.81%	-\$946,615,188
Netherlands	\$677,768,427	3.69%	\$216,842,233	0.74%	\$460,926,194
Belgium	\$581,521,221	3.17%	\$147,947,627	0.50%	\$433,573,594
Italy	\$321,457,882	1.75%	\$1,013,394,254	3.45%	-\$691,936,372

The total value of the exported goods from Virginia to the EU was \$266bn. The top goods exports from Virginia to the EU were as follows: Mining and Minerals (\$739.7m), Rubber (\$249.9m), Aerospace Products (\$239m), Paper products (\$215.1m) and Electrical Equipment (\$210.6m). The total value of the exported services from Virginia to the EU was \$187bn. The top services exported from Virginia to the EU were as follows; Professional, Scientific and Technical Services (\$3.5bn), Information Services (\$757.98m), Travel (\$667.6m), Transport-Freight (\$582.8m) and Royalties & Licensing Fees (\$509m).

Europe has invested a total of \$67.2bn in the State of Virginia and have created over 97,000 jobs in the state from EU investment. There have also been over 56,000 jobs created due to trade between Virginia and the EU. It can be seen that Europe and the State of Virginia have a mutual benefit from a successful trade and investment relationship and could be an indicator of further trade of similar or increased trade and investment in the future.

American companies enjoy a low trade tariff of under 3% which is beneficial for international trade with Europe. In order to further facilitate trade between the EU and the US, the Transatlantic Economic council was created in 2007 and brings together members of the European commission and US Cabinet with the aim of providing a forum in which economic issues can be discussed and settling trade disputes.

EU-US Trade Relationship

The European Union is a Political and Economic Union that was formed to promote bilateral trade, in addition to the free movement of capital and labor among member countries, through the establishment of a customs union and a harmonized regulatory system.

The European Union consists of 27 Member Countries, 19 of which have adopted the Euro as its national currency, forming a monetary union. There is currently no fiscal union in place, and countries are free to implement their own judicial system.

The Transatlantic Trade and Investment Partnership (TTIP) is a proposed trade agreement between the European Union and the United States, with the aim of promoting trade and multilateral economic growth.

The TTIP negotiations were launched in 2013 and ended without conclusion at the end of 2016. A Council decision of 15 April 2019 states that the negotiating directives for the TTIP are obsolete and no longer relevant.

An economic analysis conducted by the European Commission confirms that the EU and the US would stand to gain considerably from eliminating the remaining tariffs on all industrial goods. This could increase EU exports of industrial goods to the US by 8% and US exports to the EU by 9% by 2033, which corresponds to respectively \$30bn and \$29 bn in EU and US exports. Significantly, it would give transatlantic companies of all sizes a comparative advantage, lower costs in integrated supply chains, thereby also supporting their capacity to compete globally. The EU-US economic relationship is amongst the deepest in the world with relatively low barriers and strong investment links. Total two-way trade in goods reached an all-time high of \$712bn in 2017. Taking trade in services, investments and profit flows into account, it is clear that the EU-US trade relationship is a fair one between equals, with the US reaching a small total surplus of \$13 bn in 2017.

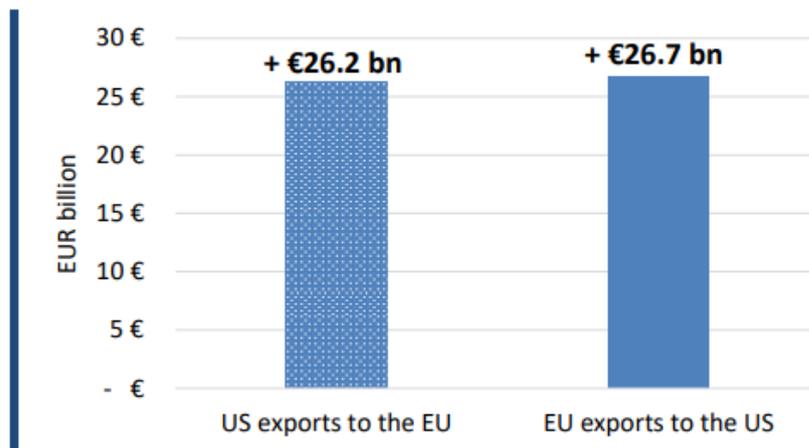
The EU and the US have identified considerable and easily achievable economic gains in the area of industrial goods. This category - which makes up the bulk of EU-US trade in goods - includes everything from machinery, chemicals and metals to clothes and footwear - areas where the EU is often a world market leader. The US is the main destination worldwide of EU industrial goods with over one fifth of all EU exports going to the US. Imports from the US represent almost 15% of all EU imports of industrial goods, second only to imports from China. In general, the import duties that the EU and the US apply to each other's imports of industrial goods are amongst the lowest in the world, averaging, 3.8% for the US.

Smaller companies stand to gain the most from the parallel talks on cutting the costs of assessing whether a product meets EU and US standards. Removing the need for double testing makes these conformity assessments easier and cost effective for businesses on both sides of the Atlantic without lowering safety standards or necessary quality assurances for

consumers. Potential areas for closer cooperation include machinery and telecoms equipment.

The economic analysis predicts that exports of industrial products could grow significantly if industrial duties on both sides of the Atlantic were eliminated: US exports to the EU would see an increase of \$29.5 bn billion (+9%) by 2033.

Figure 2 European analysis on the trade benefits of removing tariffs



Source: European Commission, Directorate-General for Trade

UK-US Trade relationship

As of 1 February 2020, the United Kingdom is no longer part of the European Union. This has a significant impact on trade relations with EU and US.

In July 2017, U.S. Trade Representative Robert Lighthizer and the International Trade Secretary, Dr. Liam Fox, established the US-UK Trade and Investment Working Group. The Working Group was established to provide commercial continuity for UK and US businesses, workers, and consumers as the UK leaves the European Union and to explore ways to strengthen trade and investment ties. This work includes laying the groundwork for a potential future free trade agreement once the UK has formally exited the European Union.

As part of the US-UK Trade and Investment Working Group, the United States and the United Kingdom have signed agreements on specific products listed below. These products are currently covered by existing agreements the United States maintains with the European Union, which have covered trade with the UK by virtue of its membership in the EU. These new US-UK agreements will ensure that there is no disruption in trade of these specific products between the United States and the UK when the UK leaves the EU.

- US-UK Agreement on Trade in Wine
- US-UK Agreement on Mutual Recognition of Certain Distilled Spirits/Spirits Drinks
- Agreement on Mutual Recognition Between the US-UK
- Agreement Between the US-UK on the Mutual Recognition of Certificates of Conformity for Marine Equipment

The potential impact of a UK-US Free trade agreement (FTA) evidence suggests that FTAs can reduce the costs of trade and investment by eliminating tariffs and reducing non-tariff measures and regulatory restrictions to services trade. As the final details of the negotiated FTA are not yet known, ahead of negotiations the modelling is based on two plausible scenarios representing different depths of an agreement. Scenario 1 represents substantial tariff liberalisation and a 25% reduction in the levels of actionable non-tariff measures affecting goods trade and regulatory restrictions affecting services trade between the UK and the US. Scenario 2 represents a deeper trade agreement, with full tariff liberalisation and a 50% reduction in actionable non-tariff measures and regulatory restrictions to services.

Chapter 2 Sector Focus

Aerospace and Defense

The Aerospace and Defense industry is one of the largest and most important industries in Europe and was a global leader in the market in 2018. The total turnover in the sector in 2018 was €246bn (\$276bn), this total was spread across different sectors which make up the industry. The top performing sub-sectors in the industry by percentage of total turnover were: Civil Aeronautics (51.5%), Military Aeronautics (18.3%), Land (14.8%), Naval (10.1%), Civil Space (4.5%) and Military Space (0.5%). This varied array of sub-sectors shows the strength of the industry as a whole and the diversified product and service base that Europe's Aerospace industry offers. The industry also had a sales growth rate which amounted to 8% compared to the previous year showing growth in the demand for the sectors products and services. In 2018, the sector also sustained its leading role in exports, amounting to €145bn (\$163.3bn) with top exports in the sector being Civil Aeronautics (67%), Military Aeronautics (15%) and Land & Naval (21%). The sector generated a positive net trade balance with the UK because of the sectors performance in exports.

Figure 3 *Aerospace and Defense turnover and employment growth*

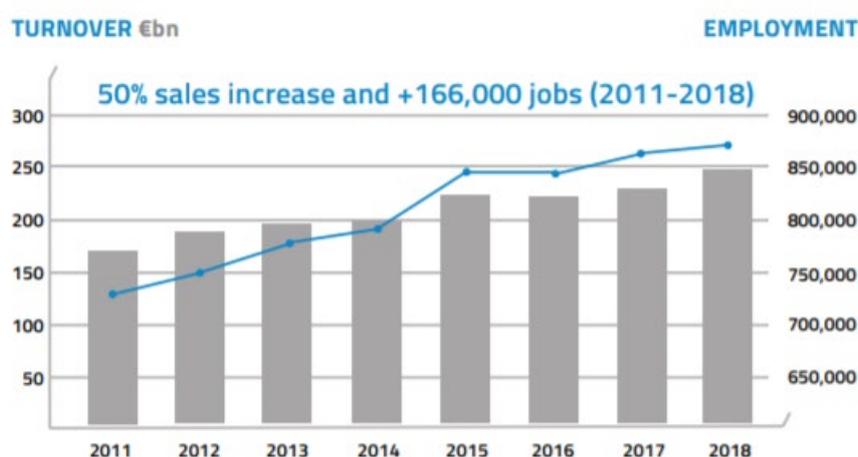


Figure 4: *Increase of sales and employment in European Aerospace and Defence industry*

Employment in this sector in Europe is also high with 370,000 highly skilled employees working across different sub-sectors with the employment coming in Aeronautics (64%), Land & Naval (31%) and Space (5%). Europe is also home to some of the largest companies in the Global Aerospace and Defense industry including BAE Systems, Rolls Royce, and Thales. It is also home to the world's second largest manufacturer in the sector, Airbus, which had a revenue of around €63bn (\$70.9bn) in 2018, with just under €18bn (\$20bn) of this generated in Europe. This indicates that the European Aerospace and Defense sector was a highly

attractive sector to enter into and trade with due to the Revenues made in the Sector and the Major Players based there.

The Aerospace and Defense sector in Europe and Globally has been greatly affected by the COVID-19 crisis with daily international flights having dropped 87% since January, with numbers in January being 39000 whereas in March it had dropped to under 5000 Flights. More than 60% of the worlds commercial airlines have also been grounded because of the pandemic which adds further strain on the sector. Aircraft being grounded can cause a huge impact of the industry as can be evidenced with Boeing when they had to ground their fleet of 737 Max Single aisle aircraft in 2019, US economic growth stalled as a result of one single model of aircraft.

The International Air Transport Association (IATA), which is the industry's trade body, has stated how close to 25m jobs in both the Aerospace and Aviation sectors are at risk if Governments do not step in to help struggling companies with lifelines. Some airlines have gained substantial debt in a bid to survive the crisis so they may not also survive without extra government assistance once the crisis subsides, they may also have to lower production in order to repay debts gained during the pandemic. This can be evidenced by Boeing who halted production at its facilities for nearly three weeks to implement safety measures and have also slashed their aircraft production rate by a third in the Month of April.

Due to the huge negative impact the Aerospace and Defense industry has encountered in regard to the COVID-19 pandemic, the future for the sector does not look hugely reassuring. Many of the industries major players have been hit hard and may have to make huge changes to survive the future before they can think about investing again. Rob Morris of Ascend by Cirium, an aviation consultancy, has stated how to return to the level of traffic enjoyed in 2019 it would require nearly 100% of compound growth on the forecast for 2020 and that "Achieving that growth even over the next two years seems extremely optimistic", which suggests that it will take more than the next year to return to an industry 'normal'.

Another senior industry executive from Belgian firm Sonaca, Bernard Delvaux, has stated how it is becoming more and more clear that there will be a significant impact not just on 2020, but on 2021 and 2022 and that they will need to reduce the size of their operations quickly. Brian Burrige, the Chief Executive of the Royal Aeronautical society states how he believes that the airline ecosystem will be 50% smaller, this will be due to reasons such the huge cuts in levels of production and demand, possible supplier bankruptcy due to the industries highly regulated supply chain many smaller suppliers may not have the capacity to stay afloat.

Another negative outlook for the future is on the aftersales services provided for aircraft, this is a major stream of profit for aircraft and engine manufacturers such as Rolls-Royce and GE. Under the scenario that has been put forward by the IATA, up to 7000 aircraft may be surplus to requirements by the end of the year, which is a huge number of assets which cannot be used which will inevitably increase costs and lower profit. A key aspect of a company that may be able to survive the pandemic and possibly come out of it with some value growth will be

an organization which puts a focus on gaining a technological lead on competitors, so when the market returns to full capacity then a company would be ahead of its competitors.

Life Sciences

In the last decade, the innovation in health technology – medicines, medical devices, diagnostic technologies and increasingly, digital health – have revolutionized healthcare, transforming the way people organize healthcare systems as well as deliver and manage treatments. At the same time, it has been seen an increasing use of integrated treatment options that combine these technologies, offering significant benefits to patients and helping to maximize healthcare system efficiency and resources.

Key trends in healthcare and innovation in health technology:

- Socio-economic: demographic (changing epidemiology, patient expectations and behaviour) and economic trends (overall health of public finances)
- Technology: digital health, emergence of personalized medicine, data sharing
- Policy-related: regulatory changes affecting the industry with respects to approval, access, pricing and reimbursement or market diffusion

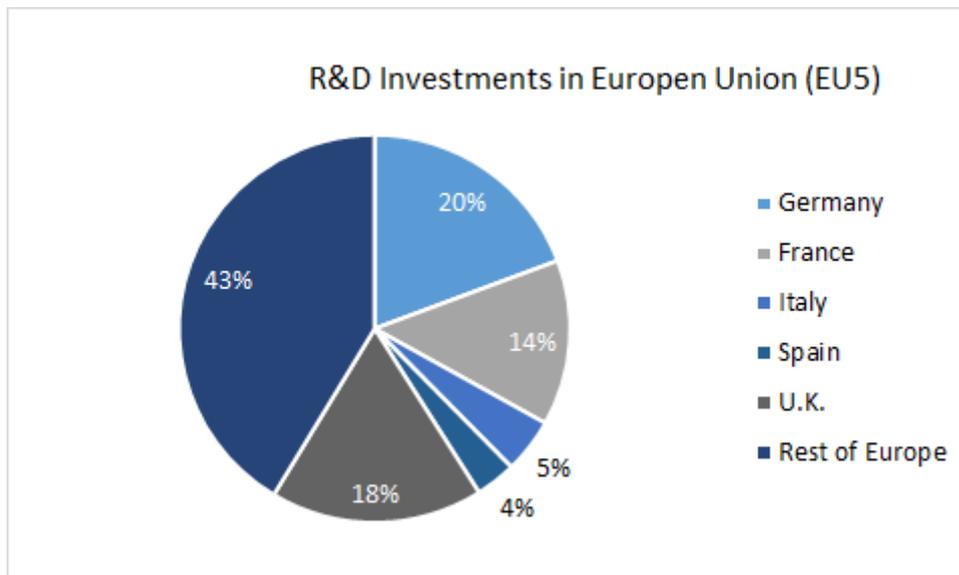
Pharmaceutical

The European Pharmaceutical industry is a global leader and today's European citizens can expect to live up to 30 years longer than they did a century ago due to the major advancements in biopharmaceutical research, complimented by smaller steps have allowed for reductions in mortality for example reduction in the amount of HIV/AIDS related deaths. The world pharmaceutical market was worth an estimated \$998.2bn, with Europe accounting for total of 23.2% (\$231.5bn) from the global market value. The major European countries for Market value were Germany (\$36.8bn), France (\$32.1bn) and Italy (\$30.4bn)

In terms of exports, Europe's total value of exports in 2018 was €396bn (\$448.7bn), with the top exporting countries in Europe were Germany (\$85.1bn), Switzerland (\$75.1bn) and Belgium (\$45bn). These totals show Europe's proficiency in the export of Pharmaceuticals globally with some of the world's biggest players situated in countries such as Germany and Belgium. In terms of imports, Europe's total value of imports in 2018 was €294.6bn (\$333.8bn), with the top importing countries being Germany (\$52.9bn), Belgium (\$36.9bn) and the United Kingdom (\$33.7bn). Some of the top exported products were in the categories of Pharmaceutical products, Telecommunication & Sounds and Power generating equipment and Machinery. The United States were both Europe' top export and import partner, with 34.3% of exports and 37.4% of imports from Europe going to the US, this shows the existing relationship between Europe and the US and the successful nature of this relationship.

Employment in the sector is also high within Europe, with over 760,000 employees working in pharmaceuticals which shows a large highly skilled talent base in which companies can utilize. The top employing countries in Europe for Pharmaceuticals were Germany who employ over 117000 people and France who employed over 98000 people. In Terms of Research and Development, the Pharmaceutical industry in Europe invested an estimated €35.2bn (\$40bn) with an average market growth of 4.4% for the total European Market. Below is a graph which shows the European countries which invested most heavily into R&D.

Figure 5 R&D investments in the European Union



The COVID-19 pandemic has disrupted supply chains worldwide in many different industries and pharmaceuticals are no exception. A paper prepared for the EU pharmaceutical committee suggested that as much as 90% of active pharmaceutical ingredients (APIs) for generic medicines were sourced from China and India. This shows Europe's reliance on being able to source products from these two markets and if that is not possible then they will not be able to produce some basic drugs like Paracetamol.

A lot of European pharmaceutical companies are changing their focus to tackle to COVID-19 crisis to find a vaccine and in order to produce more effective tests for the virus. Some of the Major players have almost entirely switched focus towards COVID-19, for example French company Sanofi will leverage their previous development work for the SARS vaccine in the hope that it may unlock a fast path to developing a COVID-19 vaccine and the British company GlaxoSmithKline making their established pandemic vaccine adjuvant platform technology available to enhance the development of a vaccine against COVID-19.

The negative aspect for the Pharmaceutical industry in Europe is that a huge percentage of the generic medicines and APIs that are used in Europe to produce medicines have to come from China or India, showing the need for some reshoring off production and a localizing of supply chains. Positive aspects of this are the US's majority percentage of the imports and exports of Pharmaceuticals showing a successful and continued relationship for trade and the industry's ability to switch production capabilities to search for a Coronavirus vaccine shows resilience in a pandemic.

Medical Technology

The European Medical Devices market is a vital market to the European economy and the total medical technologies market is valued at approximately €115bn (\$130bn) in 2017. The European MedTech market is the second largest in the world based upon manufacturer prices and second only to the US, with Europe having control of 27% whereas the US has around 43% of market share. The share between different European countries is shown on the diagram below.

Figure 6 European Medical Technologies market share



The size and importance of the European Medical Devices market can be evidenced by the employment rates, the industry directly employs more than 675,000 people across the various markets. Germany (200,000) has the highest number of people employed in the MedTech sector, while the highest number of MedTech employees per capita can be found in Ireland (38,000) and Switzerland (58,500). The number of Medical Technologies companies in Europe also reiterates the size and importance with around 27,000 companies active in the sector. In 2017, more than 13,000 patent applications were filed with the European Patent Office (EPO) in the MedTech sector and for comparison around 6300 applications were filed in the pharmaceutical field which shows the innovation within the MedTech sector. Expenditure on healthcare in Europe averages at approx. 10% of GDP, out of this total around 7.2% is attributed to Medical Technologies.

The Medical Devices sector within Europe has been greatly affected by Covid-19 in that their supply chains have changed and the focus on production has shifted away from the 'norm'. There have also been changes to procedures and regulations in the sector with a postponement of the EU Medical Device Regulation (MDR) which was initially planned to be implemented on May 26th, this is to allow the industry and Notified Bodies to focus on the pandemic and put all their efforts into combatting coronavirus. There have also been a temporary rules relaxation around a CE mark for PPE and related medical devices to supply countries that urgently need these pieces of equipment. The European Commission has

temporarily made the export of certain medical devices like PPE and other related protective equipment subject to authorization, this could provide a problem for medical device companies which are subject to a contract and are obliged to supply devices outside of the EU. The Medical Device Industry within Europe is under tremendous pressure to innovate and deliver due to the current pandemic, and the European Commission and related European and National bodies have been proactively making decisions to aid the industry and the population to help alleviate the virus.

ICT

The ICT market in Europe is extremely varied with different markets having expertise in a wide range of activities related to the sector including Automated Intelligence (AI), Cyber-Security and Robotics. In 2015, the ICT sector in the EU's value added amounted to €581bn (\$657bn) which was 5.2% more than the same period for the previous year. In the past five years, the capital invest in European technology has increased by 124% reaching \$34.3bn of capital invested for 2019, this has increased 39% from 2018 to 2019. Some of the sectors biggest organizations also call Europe home with companies such as Spotify, which is valued at over \$16 billion, along with Trivago and Klarna having their base in Europe showing the proficiency of the continent in the industry. The ICT Industry is further expected to become a key development sector, as 30% of enterprises with 1,000 or more employees are currently using AI-powered security solutions with this number expected to grow to more than 60% by 2020.

Cyber-Security

The growing significance of cyber-security in today's industries and population as a whole looks set to continue with both the number of connected internet devices and the date these devices generate set to increase. According to a survey completed by PWC, the total number of security incidents detected by respondents climbed by 48% over the number from two years previous. This shows the need for cyber-security innovations and products that can continue to protect data from attacks. The European cyber-security industry market of products and services which aim to protect people and organisations from data breaches was worth \$22bn in 2016. There are over 60,000 companies which employ over a million people in the European ICT market spectrum with these employees spread across the wide variety of sub-sectors, this shows the importance of this industry to the European Economy. As a single Market, the EU would be the largest market in the world for Cyber-Security which reiterates the importance of cyber-security in Europe.

There is a continued importance placed on the European Cyber-Security market in Government within Europe and this can be evidenced by the government segment having a projected 25% market share in the Cyber Security market by 2025 due to the large scale financial impact a cyber-attack would have on a Government. The Europe Cyber Security Market is expected to grow to \$35.53 billion by 2019, which had an expected CAGR of 7.2% for the 2014-2019 period.

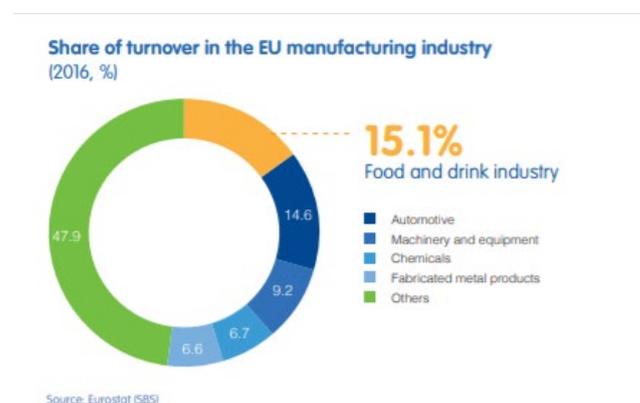
Due to the COVID-19 pandemic, there has been a major increase in the number of employees that are now working from home and off their own laptops or else company laptops. Unfortunately, due to this it has increased the amount of cyber-attacks on companies and its individuals. The French Defence group Thales, which also offers cyber-security solutions, has announced they have seen a jump in cyber-attacks at their surveillance centre for Global hacking activity and have stated how the amount of attacks in Europe are increasing— making their systems more important than ever. This however provides opportunities for Cyber-Security in Europe as they are now more in demand than ever, for example French company CybelAngel which scans all layers of the internet, including the Dark Web, to spot leaked

company documents secured a funding round in February. The Vice President of Product Strategy, Camille Charadeau, has stated how demand has risen sharply due to the coronavirus pandemic.

Food and Drinks

The Food and Drink industry within Europe is one of the most vital and varied industries within the European economy and is the largest manufacturing sector in the EU by turnover and value added. The total Turnover of the Food and Drink industry in 2017 was €1.19bn (\$1.34bn), which is a 6.7% increase from the figure in 2016 which was €1.11bn (\$1.26bn) which shows a continued growth in the sector. Within the single market, the food and drink industry and involved companies sell 91% of products to the single market which shows a focus on providing the products to the EU countries. From the total EU gross value added the Food and Drink industry contributes 2.1%, with a 12.3% share of food and drink value added in manufacturing.

Figure 7 European Food and Drink Industry



The Food and Drink industry in the EU employs 4.72 million people and is the largest Manufacturing employer in the union and compared to other manufacturing sectors, the EU food and drink industry is a stable employer and key job provider. There are over 290,000 companies active in the sector within Europe and these companies together contribute over €2.9bn (\$3.27bn) in Research and Development. These companies export a total of €110bn worth of food products to the rest of the world and import a total of €74bn of food products, these exports account for 19% of the total EU share of global exports. The top five sub-sectors within the industry are Bakery and Farinaceous Products, Meat Products, Dairy Products, Drinks and the 'various food products' category. These sectors together account for three quarters of the total turnover and more than 80% of the total number of employed people and companies.

The Coronavirus has had an impact on the Food and Drink industry within Europe and has affected supply chains within the sector. Due to lockdown measures taken by different countries many Restaurants, Cafes and bars had to close which would have put both those businesses and their suppliers at risk of not surviving the pandemic. A statement released and signed by trade associations which represent the various food traders, farmers and the European Food and Drink industry stated that there have been delays and disruption at

different country borders for the delivery of certain agricultural and manufactured products as well as packaging materials. There are many employees and products that change over different borders within Europe and with countries shutting down internal borders there is the possibility of a shortage of workers and problems for the supply chains of the industry.

There may be a more positive future ahead for the industry than many had feared at the beginning of the pandemic with plans across Europe to reopen Restaurants and Cafes as open-air venues for the foreseeable future. This gives businesses an opportunity to resume trading to an extent and with manufacturing facilities beginning to open, for example Dutch food processor Vion have re-opened a meat plant that had seen more than 100 staff test positive for Covid-19, it suggests the food and drink industry may rise from the pandemic quicker than expected. Another food group, Arla Foods, has seen its foodservice sales rise by 30% in Denmark due to the reopening of canteens, restaurants, and cafes after having previously been shut down due to the virus. There have also been rises in the sales to grocery-retail customers for example Northern Irish based Mash Direct has seen sales rise in this category in the early weeks of lockdowns in the UK & Ireland and have now launched a direct-to-consumer service which may become a permanent part of the business. Across Europe, many drinks companies have made the switch to delivering their products to consumers directly and there has also been a European Beer Platform created with the aim of supporting smaller and more localized breweries through the pandemic.

Consumption of alcohol at home has increased with the closure of bars and restaurants throughout Europe. Some UK wine merchants have reported a 400% rise in sales and increased demand is paving the way for new products and innovation in this sector.

The coronavirus pandemic has brought hygiene to the forefront of people's minds, and the food industry is a key part of this. From food and beverage testing to packaging, food safety is an area that is predicted to become increasingly more important to consumers and producers.

Even amidst the fake cures for COVID-19, the health food and natural products industry is experiencing a growth in demand as people seek to boost their immune system and generally become healthier. Areas such as CBD products are particularly pertinent as long-term opportunities.

Consumer's confidence to leave their house to buy food has dropped. The increased efficiency and choice of food delivery services, from ready-to-cook meal boxes to groceries has made this an appealing proposition both during and post-crisis. More companies than ever are offering a direct-to-consumer service.

Sustainability was a growing trend before COVID-19 and has picked up pace in the months following the outbreak. Tangible, positive effects on the environment can be seen and it is predicted that the popularity of sustainable farming and plant-based diets will continue to grow.

Automotive

The European Union (EU) is the world's leading producer of motor vehicles. The automotive industry is one of the most significant contributors to the economy of the European Union. The presence of vast base of the automotive industry in the European Union has contributed largely to the prosperity of Europe.

The automotive industry in European Union is the largest provider of employment to people in Europe. The industry employs the largest number highly skilled labors and is a key driver of the Europe's innovation and knowledge.

The European automotive industry accounts for attracting largest foreign investment in R & D (Research and Development). The major highlight of the European Union automotive industry is that the sector is one of the leading contributors to the GDP (Gross Domestic Product). The industry also accounts for the largest export of Europe; this is one sector where Europe exports more than it imports.

The automotive sector is amongst the largest, most competitive, and most internationalised of all industries, with high barriers to entry. It is also a classic example of a producer driven commodity chain. It is characterised by integrated production systems that comprise highly specialised, segment-specific, vertically organised transnational companies. The industry has a high intensity in technology, capital, and skills and is logistically demanding due to lean manufacturing and the system of just-in-time parts delivery. The structure of the automotive supply chain is often compared to a pyramid. These tiered supply chains are very common due to the very complex end-product and the multiple components and sub-assemblies it consists of, which have to comply with stringent quality, manufacturing and business standards. On top are the Original Equipment Manufacturer (OEMs) referred to as companies that make the final product for the consumer market (e.g. Audi, BMW, Daimler, VW). Tier 1 companies are directly supplying OEMs with major vehicle systems (such as drivetrain, infotainment, motor units) and are themselves supported by Tier 2 companies (supplying components such as vehicle control units, battery management systems). Therefore, in a typical supply chain OEMs are supplied by Tier 1, which are themselves supported by Tier 2, which are supported by Tier 3 and so forth. Tier is a common terminology in the automotive industry and refers to major suppliers of parts. The automotive aftermarket and aftersales sector is a complex, robust and highly competitive market that provides the support network for Europe's millions of cars, vans, trucks and buses. The automotive aftermarket's multi-faceted and diverse segments cover the whole repair, maintenance and service spectrum from parts supply to fitment and servicing.⁸ Vehicle manufacturers are not dominant players in aftermarket maintenance over the lifetime of the average vehicle. Here SME's comprise the mainstay of total aftermarket services.

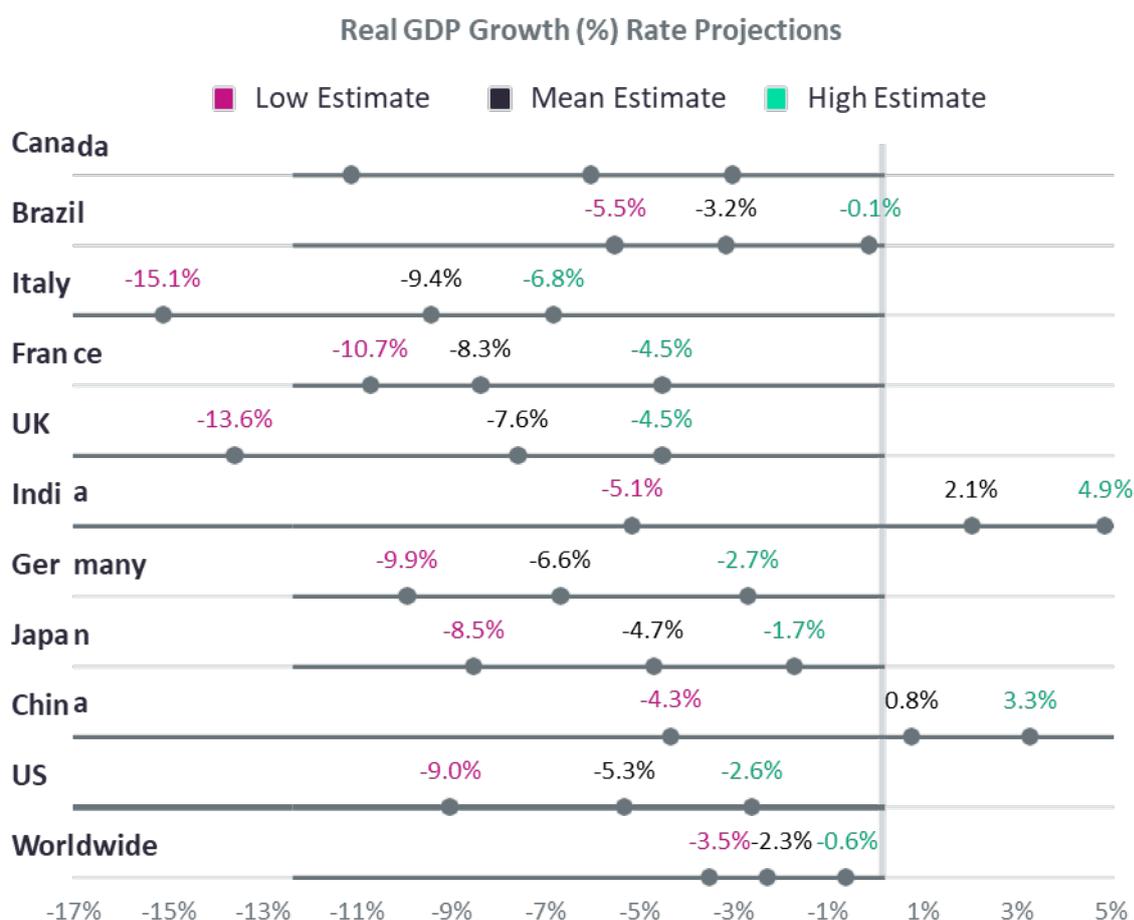
The impact of the COVID-19 crisis on the European automobile industry is severe. Both the production and sales of motor vehicles have come to a sudden halt in most of Europe and other regions in the world. European demand increasingly collapsed in March 2020, in particular due to the measures to contain COVID-19. On the basis of available information, it can be assumed that new registrations in Europe in March fell by about 50% compared to the previous year. For March, France reports a 72% drop in new registrations, which means that only one week of sales was actually registered in that month. The future effects of the crisis will depend strongly on the duration of the measures. In Italy and Spain severely affected pandemic countries, new registrations in March fell by 85% and 69% respectively, as expected. So far, relatively early withdrawals of protective measures have been communicated. The UK delayed government measures (e.g. school closures) lead to an overall later decline in demand (April:- 40%, May:-20%) followed by a slow recovery in Q2.

The car production Europe will be affected in the longer term by disruption of value chains. European production showed the first effects of the corona crisis at the beginning of March in Northern Italy, quickly followed by disruptions in Bavaria (Webasto, Brose). From 16 March onwards, a synchronized shutdown of vehicle production in Western Europe set in, correspondingly also at Tier 1 suppliers. Suppliers at other levels do not have sufficient market power to enforce closures and are faced with unchanged high costs. Short-term: Based on available information production is expected to fall by about 35% in March compared to 2019, and to literally be at a complete standstill at the beginning of April. Medium-term: Due to dramatic pandemic effects, Italy decreed the closure of all factories on 22 March after FCA had already stopped vehicle production, as well as in Spain. UK: Delayed policy measures lead to a delayed but all the stronger impact on production and logistics.

Chapter 3 Covid 19 and the European Business Environment

Irrespective of case handling, the impact of Covid 19 on European economies has been dramatic. The real GDP decline is estimated to be significant in most EU countries with global trade declining by 30% and Foreign Direct Investment seeing a further decline of between 30 – 40%. Overall, it is anticipated that European economies will experience market sizing similar to 2007 as opposed to more recent years. The optimism for a V shaped recovery however remains strong as demand is expected to be pent up demand for goods and services however some sectors will never return to the same strength.

Figure 8 Real GDP Growth Projections

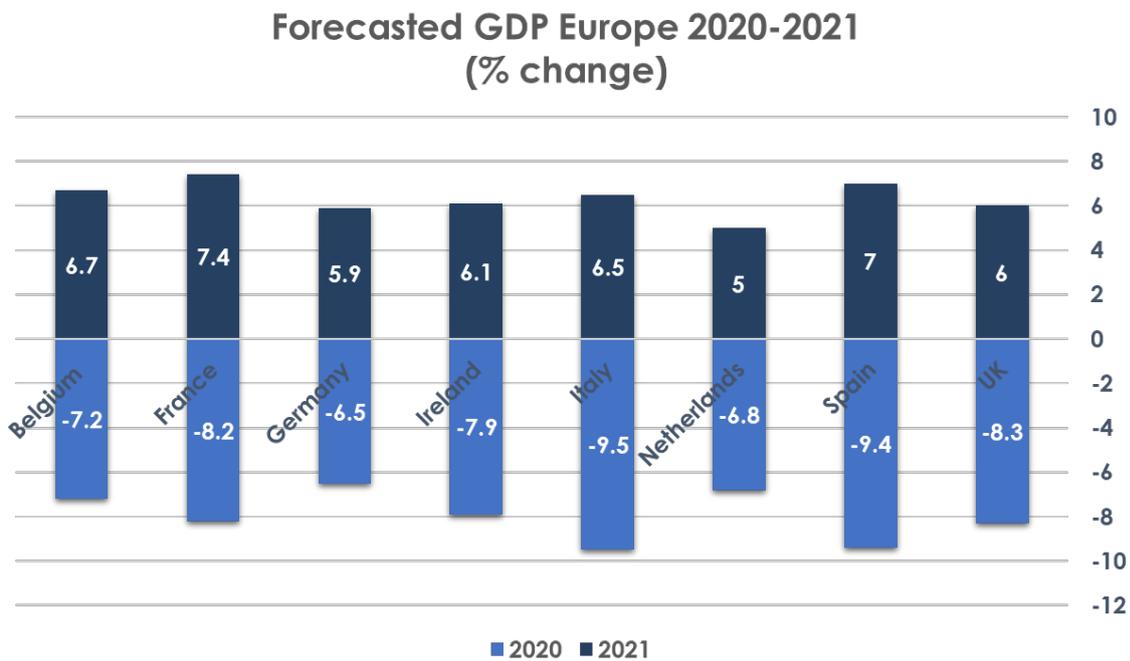


Source: GlobalData Analysis; National Statistics Office; The World Bank; Broker Estimates; BBC; Twitter; Reuters

Europe was the continent most affected by the coronavirus pandemic initially, with disruption to supply chains, labour forces and key sectors throughout the region. Government's have reacted differently but with the end goal of protecting business and economies. This, however, has also presented it's own set of opportunities as a necessity for innovation and diversification move to the fore and furthermore most European economies are opening up gradually (outside of the UK) and showing signs of growth.

Most economies in Europe will rebound correctly with perhaps the greatest health warning being on the UK economy where growth may be slower than anticipated.

Figure 9 Signs of a V shaped recovery



Irrespective of this growth, we do not expect the economy to rebound equally in all sectors.

Figure 10 Which sectors are vulnerable to complete change

	2019 Growth global, %	2019 Growth Europe, %	Employment in Europe, '000 persons	Supply Chain Disruption	Remote working feasibility	Demand change during coronavirus	Overall Assessment
Food & Beverage	27.05	57.14	1,998.70	High	Limited	High increase	Low threats
Manufacturing (including Advanced Manufacturing)	3.30	17.10	32,948.83	Medium	None	Decrease	At Risk
Defence	70.00	57.14	14,916.68	Low	Limited	Increase	Low threats
Financial Services	17.70	50.20	5,881.75	Low	Possible	Increase	Low threats
Media/Creative Industries	5.80	-0.60	4,303.68	Medium	Limited	Increase	Low threats
Life Sciences	42.30	12.20	2,501.21	Medium	Limited	High increase	Low threats
Consumer & Retail	15.60	4.10	29,421.60	High	Limited	Decrease	At Risk
Biotech (including AgriTech)	38.60	45.70	871.41	Medium	Limited	Increase	Low threats
Automotive	-23.90	-24.20	2,657.83	High	None	Decrease	At Risk
Enviro-Tech	31.10	34.50	142.4	Medium	Limited	No change	Low threats
Renewable Energy	64.60	107.10	521.4	Medium	Possible	No change	Low threats

We believe that Food & beverage, life sciences, financial services and innovative industries will have a long and sustained possibility of success whereas other industries may struggle in the medium term. To this end, we have devised roadmaps per sector showing how the industries in Europe may overcome short term challenges and what the opportunities may be. These will be outlined in the next chapter.

In summary however, our analysis indicates that the following subsectors across industries are exhibiting signs of growth (e.g. increased customer orders, increased stock price, new funding etc.) and these are outlined below:

Figure 11 Sub-sectors showing strong levels of growth in Europe due to Covid 19



Chapter 4 The Opportunities Arising

COVID-19 has had an unprecedented impact on business and people on a global, regional and individual scale. Each market and industry have been presented with their own set of opportunities and challenges, many of which are new and some of which have been amplified.

Europe was the continent that was initially most affected by the coronavirus pandemic, with disruption to supply chains, labour forces and key sectors throughout the region. Governments have reacted differently but with the end goal of protecting business and economies. This, however, has also presented its own set of opportunities as a necessity for innovation and diversification move to the fore.

COVID-19 has caused some short-term opportunities and challenges that cut across sectors and markets that will shape the future on how to do business.

Opportunities:

Diversification – COVID-19 has opened up opportunities for companies to expand into new sectors and diversify their offering particularly into medical technology and PPE.

Innovation – With business disrupted like never before, innovation has become crucial to companies' ability to seize opportunities and adapt to integrate tech into existing systems and processes.

Sustainability – A reduction in travel and a need to stabilize supply chains has brought the question of sustainability even more to the forefront of government and public minds.

Starting Again – In spite of the numerous challenges, there has never been such an opportunity to rethink strategy and reinvent.

On the other hand, the challenges that the EU is facing are:

Labor Force – Numerous industries have been severely affected by lockdown across Europe with people unable to go to work causing labor shortages.

Supply Chains – The interconnectivity and globalised nature of supply chains has caused widespread disruption throughout Europe as the movement of goods has become more difficult.

Travel – Business travel has taken a big hit as airlines drastically reduce services or ground fleets and borders close.

Economic Constraints – The unprecedented nature of COVID-19 has caused economic shocks not seen in recent times with many businesses struggling to stay afloat and government assistance not accessible to all.

Industry value chains and opportunities

In the following diagrams we highlight how we currently believe that individual sector value chains will evolve in the next 5 years post the Covid 19 disruption. The evolution of these value chains will offer opportunities for companies to engage directly with European sectors.

Figure 12 Manufacturing Value chains over the next 5 years

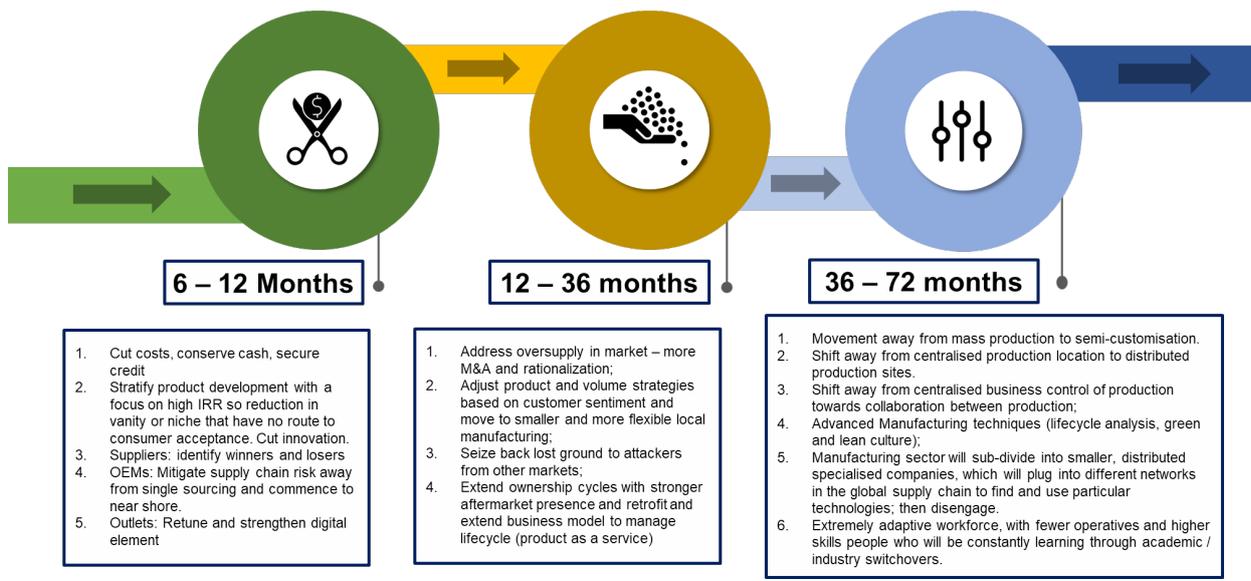


Figure 13 Banking Value chains over the next five years

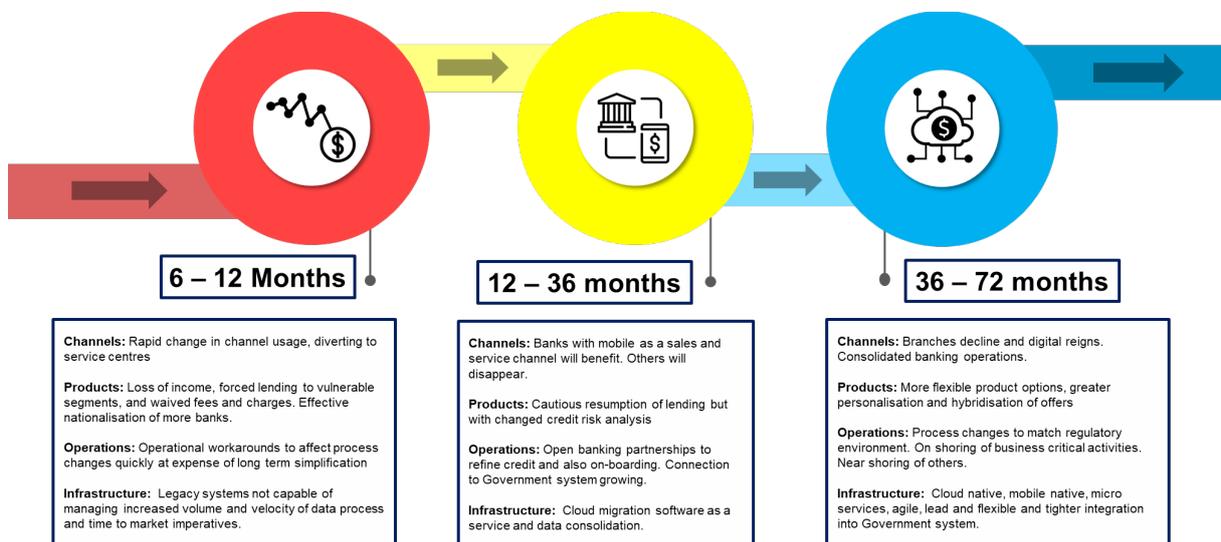


Figure 14 Automotive Value chains over the next five years

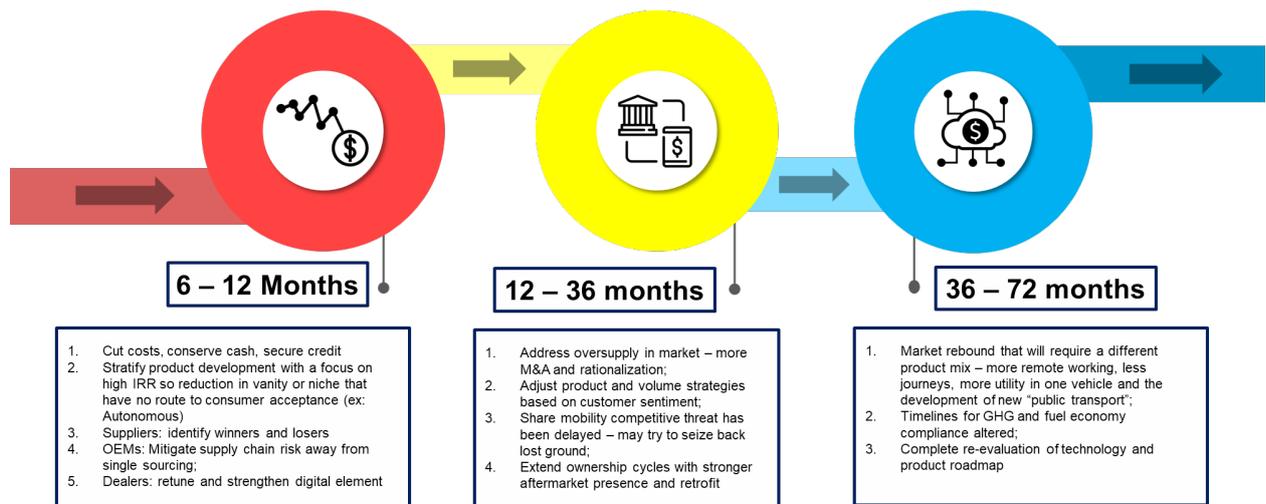


Figure 15 Food Service Value Chains over the next five years

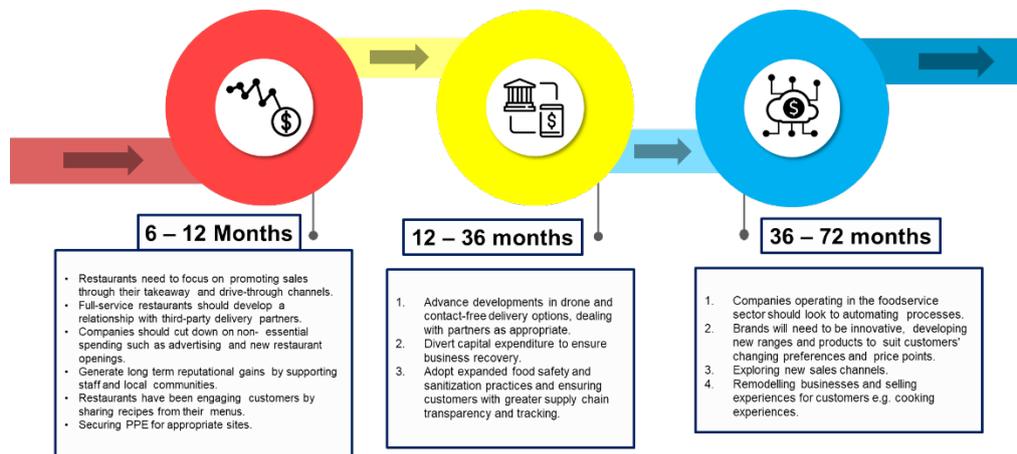


Figure 16 Lifesciences Value Chain over the next five years

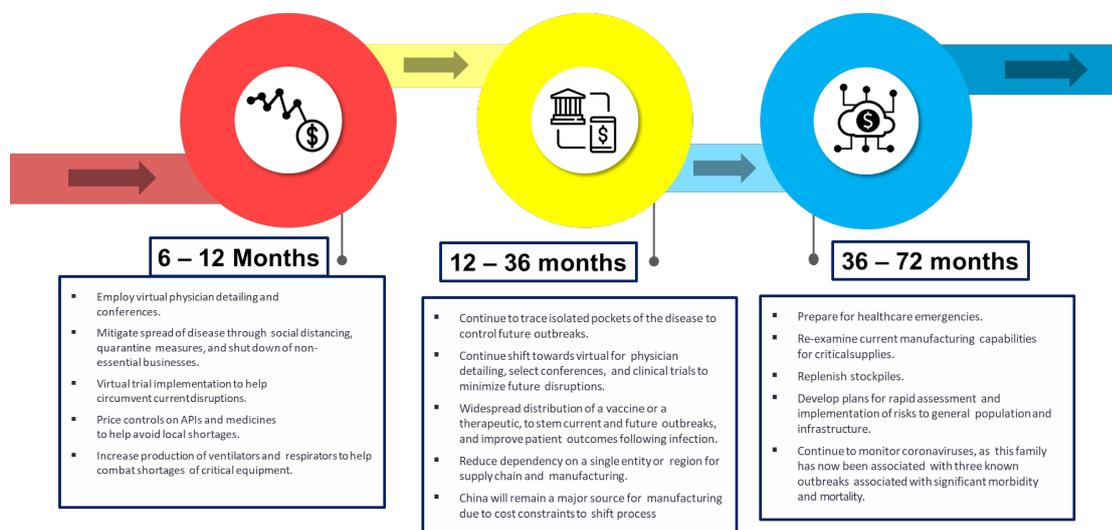


Figure 17 Medical Technologies over the next five years

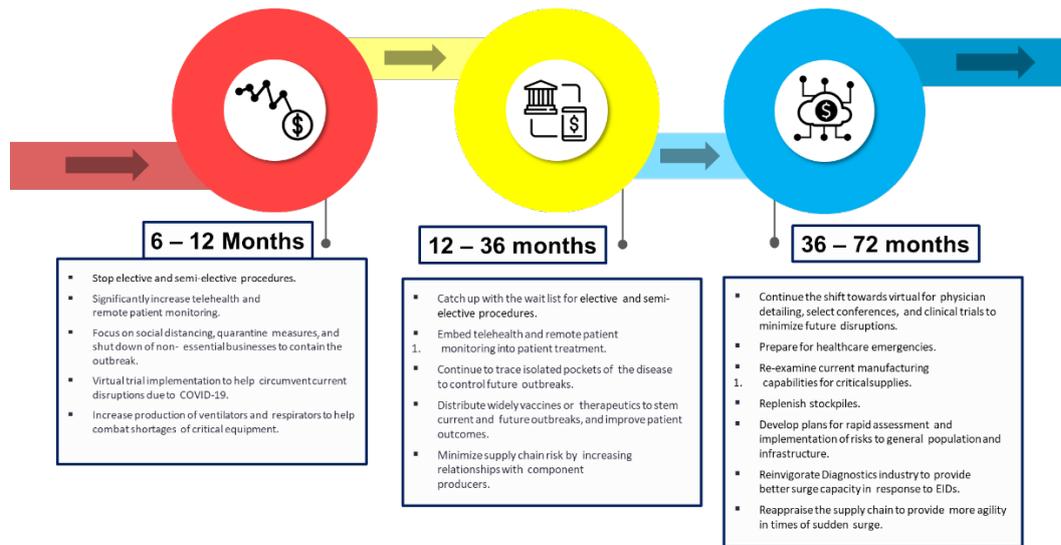
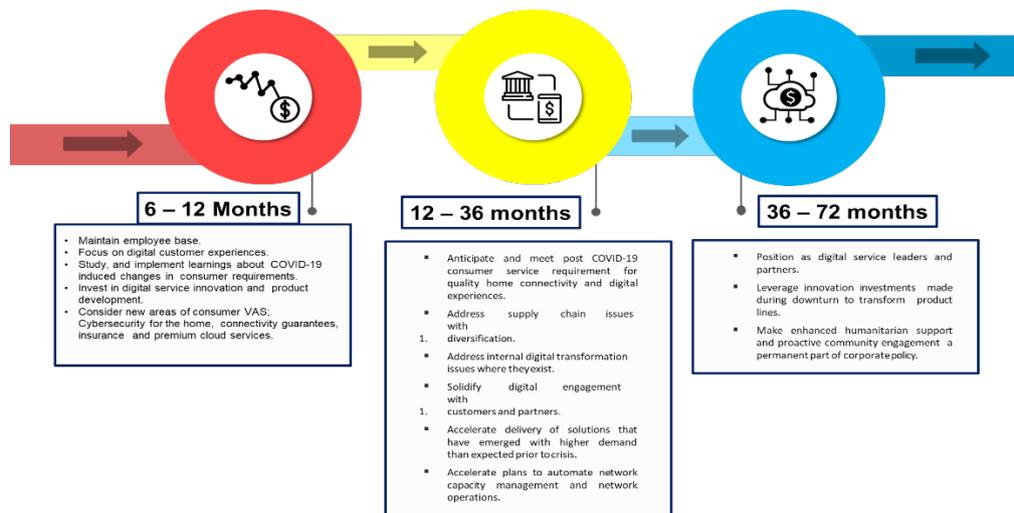


Figure 18 Telecommunications over the next five years



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