



Covid-19: Impact on Chemicals Industry

Prevention and mitigation mechanisms

April 2020

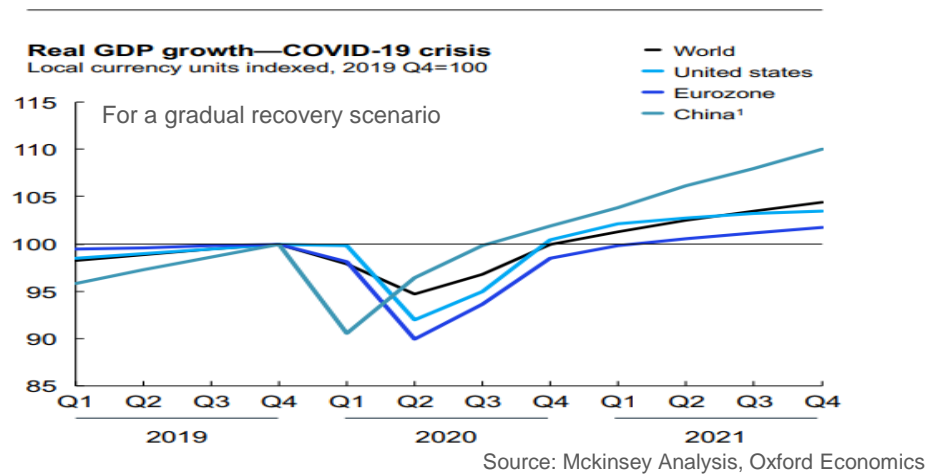


Demand-supply Shock Across Chemicals Markets

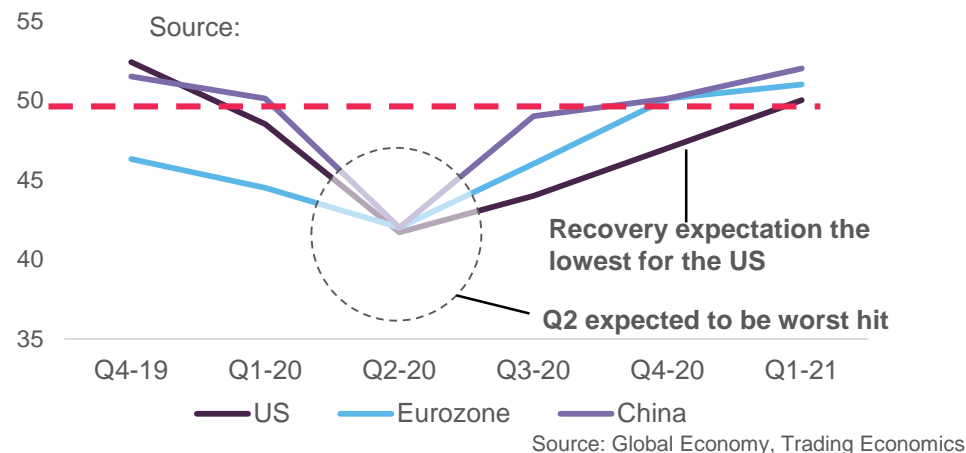
The dampening impact of COVID-19 is expected to continue in Q2 2020. The most optimistic GDP turnaround estimate, to pre-Covid-19 levels, is 4–6 quarters.

Global View

Real GDP Scenario Analysis

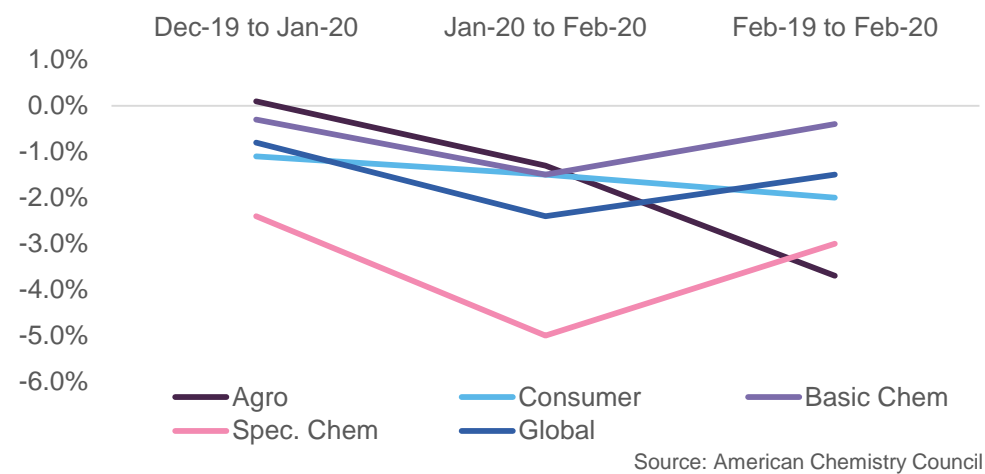


Purchasing Managers' Index (Q4 19 to Q1 21)

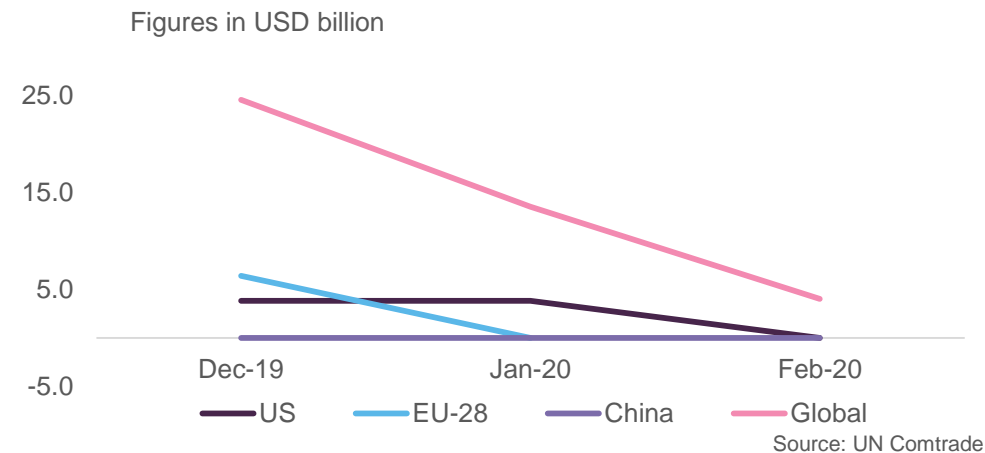


Sector View - Chemicals

Global Chemicals Production Index*



Global Chemicals Exports – Dec-19 to Feb-20, USD billion



- ✓ The chemicals industry remains stagnant due to slowing demand from key sectors, such as automotive and construction.
- ✓ Europe's PMI index hovered at around the mid-40s since 2019, with key chemicals producing nations, especially Germany, touching unprecedented lows of ~40. China and the US are expected to see a sharp fall to almost 40 by Q2 2020.
- ✓ Headline chemicals production was negative 1.5 percent Y-o-Y for Feb-20.
- ✓ As of Feb 20, chemicals industry capacity utilization reached record lows of 79.3 percent, considerably lower than the long-term average of 86.5 percent (in 1987-2017); it has gone below 80 percent for the first time since the 2008 crisis..
- ✓ There have been no exports from China since Dec 19; the US stopped exports in Feb 20 and the EU 28 region plunged to zero exports in Jan 20

End-use Industry Behavior Directly Impacts Chemicals Industry

Areas experiencing Covid-19 major impact

Force Majeure

Halting of production plants is the most persistent challenge being faced by the sector, especially with regard to products that are being continuously demanded by end-users (such as producers of personal health and household products).

Demand Supply Imbalance

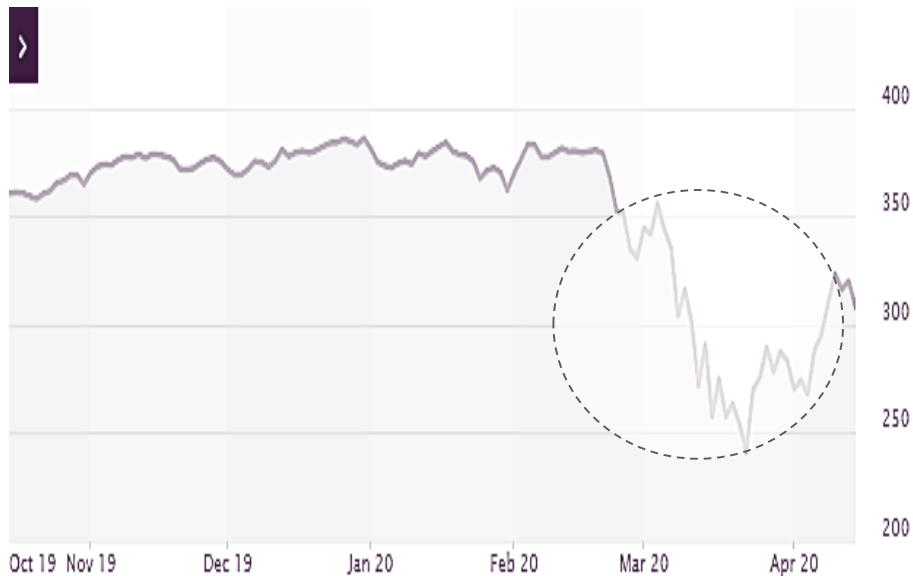
Some industries such as automotive and aerospace, have experienced a severe COVID-19 impact. Their production has gone down, lowering demand for the chemicals required for manufacturing. This has resulted in lower capacity utilization and cost pressure for chemical sector companies.

Global Supply Chain Disruptions

Overdependence on China for raw materials has adversely affected the industry. Rather than depending on global supply chain partners, the chemicals industry is looking for alternatives, such as local suppliers, as well as digital supply chain platforms.

S&P 500 Sector Indices (6M, Oct-19 to Apr-20) – Chemicals & Materials Indices Mirror End-use Industry Indices

Chemicals and Materials Indices



S&P 500 Materials Index (Oct-19 to April-20)

End Industry Indices



S&P 500 Automobiles & Components Index (Oct-19 to April-20)



S&P 500 Healthcare Index (Oct-19 to April-20)



S&P 500 Agriculture Index (Oct-19 to April-20)



S&P 500 Industrials Index* (Oct-19 to April-20*)














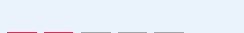




Industrials include Aerospace & Defense, Agricultural & Farm Machinery, Air Freight & Logistics, Airlines, Building Products, Construction & Engineering, Construction Machinery & Heavy Trucks, Diversified Support Services, Electrical Components & Equipment, Environmental & Facilities Services, Human Resource & Employment Services, Industrial Conglomerates, Industrial Machinery, Railroads, Research & Consulting Services, Trading Companies & Distributors and Trucking

3 Sources: S&P 500, MarketWatch, Evalueserve Analysis

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End-use Industry Snapshot – Challenging Times Ahead for Discretionary Sectors

Key end-users and their current positioning during the crisis			
End Users	Impact Rating	Key Impact Dynamics	Key Initiatives by End Industry Players
 Automotive & Transportation	Low  High	<ul style="list-style-type: none"> - Assembly plant closures and disruption in Chinese parts exports have resulted in large scale manufacturing interruptions and decrease in overall sales volume - Lack of sufficient labor is also one of the challenges the industry is facing owing to the current pandemic situation. Demand is expected to have a staggered recovery. 	<ul style="list-style-type: none"> - BMW is set to produce protective masks in the wake of COVID-19 - Ford and GM are making thousands of ventilators
 Healthcare	Low  High	<ul style="list-style-type: none"> - Positive impact of Covid-19. Sales of protective gears and drugs (and related fine chemicals throughout the value chain) on the rise 	<ul style="list-style-type: none"> - More and more end-use companies are entering the healthcare sector to tap opportunities created by the crisis
 Electronics & Electricals	Low  High	<ul style="list-style-type: none"> - Shortages of materials, components and finished goods along with low demand from the consumer end is expected to have drastic impact on the industry in the long run 	<ul style="list-style-type: none"> - Flex, a contract manufacturer that makes computers for Apple, is starting ventilator assembly to take advantage of increasing demand
 Aerospace	Low  High	<ul style="list-style-type: none"> - Disruption in production and near-zero demand, along with short-term concerns about cash flow and liquidity, is having a cascading effect throughout the industry 	<ul style="list-style-type: none"> - Boeing delivered its first batch of reusable 3D-printed face shields made from thermoplastic films supplied by Solvay
 Construction	Low  High	<ul style="list-style-type: none"> - Drop in demand, caused by a steep decline in public sector and commercial construction, along with shortage of contractors, has led to delays and freezing of ongoing projects - The DIY segment is maintaining stability in these times. 	<ul style="list-style-type: none"> - Various construction companies as an initiative are converting their training schools into isolation centres along with providing facilities to be used as temporary hospitals
 Consumer Goods	Low  High	<ul style="list-style-type: none"> - Overall, this sector is performing well owing to the essential/ day-to-day nature of products - Disrupted supply chain and rapid shift in consumer behavior & demand is going to have short term negative impact on the industry - E-commerce adoption is growing and playing a pivotal role in distribution of essential goods 	<ul style="list-style-type: none"> - Unilever has joined a consortium that will make ventilators for UK hospitals - Beiersdorf has converted its manufacturing plant to produce hand sanitizers
 Agriculture	Low  High	<ul style="list-style-type: none"> - Minimum disruption so far as food supply is considered an essential service - Supply chain and trade disruptions, along with diminished supply of raw materials, is expected to create a negative impact - Mitigation measures are being implemented by respective governments 	<ul style="list-style-type: none"> - UPL has redirected its manufacturing power to produce sanitizers and disinfectants. The company is also working with personal protective equipment (PPE) manufacturers to supply to local hospitals and municipalities
 Metals & Mining	Low  High	<ul style="list-style-type: none"> - Steep decline in demand from key end-use sectors, such as construction, paper, textiles, and steel, has led to mining companies operating at limited capacity as well as stock piling - Forced lockdowns have reduced their scale of operations 	<ul style="list-style-type: none"> - ArcelorMittal to develop 3D printed ventilator prototype
 Packaging	Low  High	<ul style="list-style-type: none"> - Overall performance positive due to links with essential goods manufacturers (consumer, medical, etc.) - Companies are moving away their sourcing and supply chain base from China - Manufacturing disruptions are becoming common, as many companies are heavily reliant on China for production; they are also facing logistics challenges 	<ul style="list-style-type: none"> - Companies such as Amcor and Tetra Pack are taking precautionary measures at their sites, as they continue providing essential services - Packaging companies are taking initiatives to highlight measures that can prevent the spread of COVID-19

Expected Scenario of The Journey Ahead – Realistic Recovery Timeline of Q2/ Q3 2021

A combination of factors, including COVID-19 containment situation, end-use market recovery, and oil dynamics, could impact the recovery path

Covid-19 Scenario	Oil Market Behavior	End Industry Behavior	Expected Chemicals Industry Recovery Timeline	Expected Key Dynamic
Fast recovery – Opening of economy by Q2 2020	Recovery by Q4 2020 <ul style="list-style-type: none"> Inventory pressures decrease Prices start to stabilize 	Q4 2020 – Auto, aerospace, construction, metals & mining, and electronics start partial recovery Q3 2020 – Consumer goods, agriculture, and packaging start full recovery	Q1 2021	<ul style="list-style-type: none"> Best case for chemicals Accurate demand planning will lead to supply-demand balance and price realization Ideal for organic growth path
Gradual recovery – Opening of economy by Q3 2020	Recovery by Q1 2021 <ul style="list-style-type: none"> Inventory pressures decrease Prices start to stabilize 	Q1 2021 – Auto, aerospace, construction, metals & mining, and electronics start partial recovery Q4 2020 – Consumer goods, agriculture, and packaging start full recovery	Q2 2021	<ul style="list-style-type: none"> Increasing pressure on capacity utilization and maintaining mark-ups Increased focus on portfolio management Need to de-bottleneck supply chain network
Partial recovery – Partial opening of economy by Q3 2020, with COVID-19 relapses	Recovery by Q1 / Q2 2021 <ul style="list-style-type: none"> Price fluctuations Majors look for portfolio optimization / divestment 	Q2 2021 – Auto, aerospace, construction, metals & mining, and electronics start partial recovery Q4 2020 – Consumer goods, agriculture, and packaging start full recovery	Q2 / Q3 2021*	<ul style="list-style-type: none"> Volatile situation due to uncertainties in demand and fluctuating raw material prices Need for business model excellence Need to de-bottleneck supply chain network
Slow recovery – Opening of economy extended till Q4 2020 / Q1 2021	Recovery by Q3/ Q4 2021 <ul style="list-style-type: none"> Oversupply prevents full price recovery increased focus on downstream portfolio 	Q3 / Q4 2021 – Auto, aerospace, construction, metals & mining, and electronics start partial recovery Q4 2020 – Consumer goods, agriculture, and packaging start full recovery	Q4 2021 / Q1 2022	<ul style="list-style-type: none"> Deep impact Liquidity issues leading to increased M&A / further consolidation in the industry

* Evalueserve expects this scenario to be the most-likely outcome

How to Tackle The Situation...

A systematic 3-step framework “MITIGATE” | “SUSTAIN” | “GROW”

MITIGATE

How to weather the current crisis?

- Enforce covid-19 health safety measures
- Understand customer demand
- Focus on portfolio optimization
- Focus on flexible production lines in line with demand dynamics
- Tackle supply chain network blocks

SUSTAIN

How to maintain stability in the near term?

- Identify demand hot-spots based on re-bounce expectations
- Plan production ramp-up and inventory management
- Focus on business model and key account management in line with value chain reforms
- Devise optimal investment to return strategy
- Re-balance pricing strategy – standard vs. customization
- Be cost competitive

GROW

How to achieve growth in the mid-to-long term?

- Conduct post-mortem assessment and scenario analyses to be prepared for future situations
- Conduct internal capability check w.r.t. required change management measures
- Chart out necessary cost transformation measures
- Channelize cash towards ‘high return’ investment buckets
- Re-initiate ideation cycle and innovation engine with a goal towards “disruptive innovation” and “value-based pricing” to mitigate long term elasticity threats

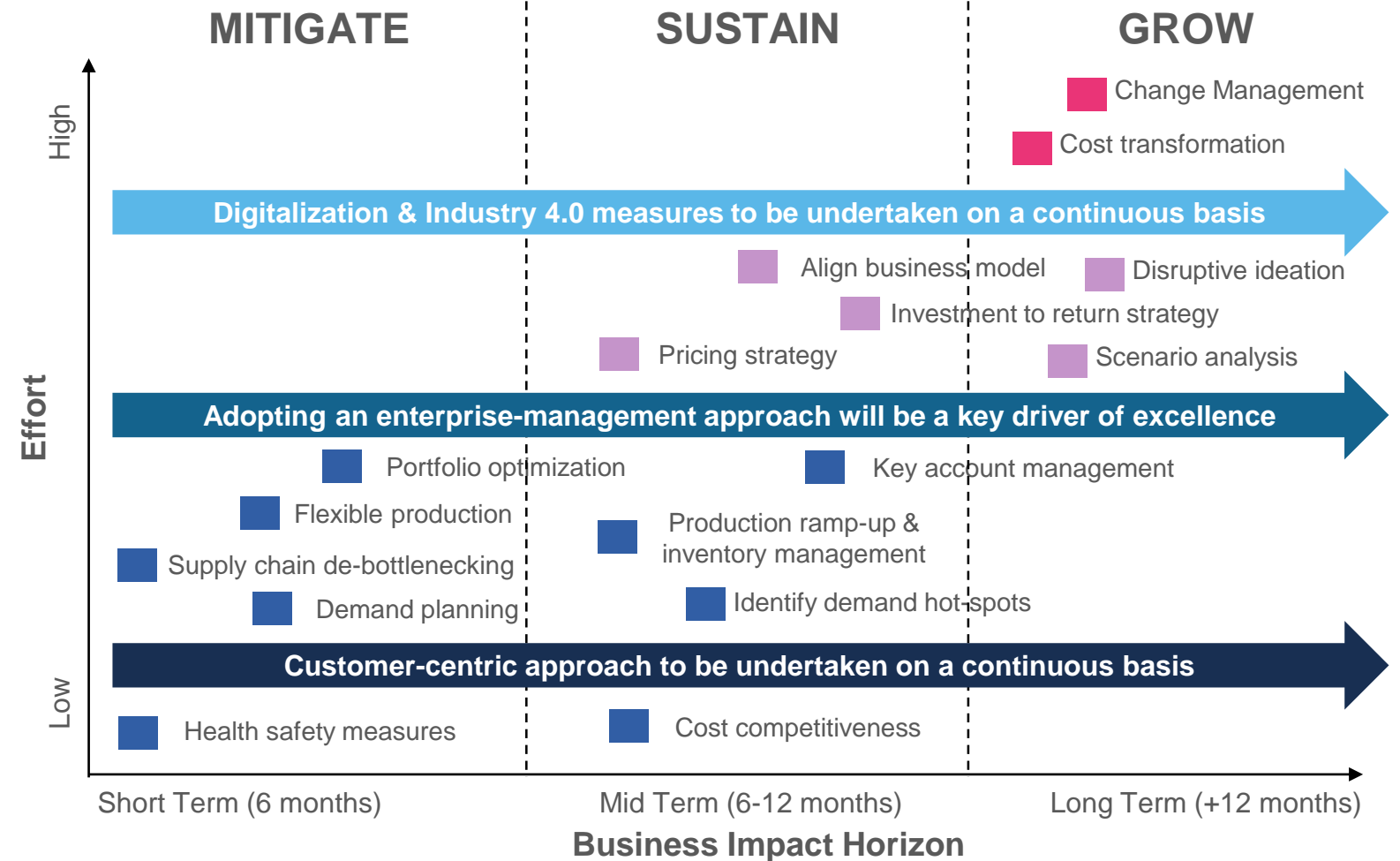
“MITIGATE” | “SUSTAIN” | “GROW” Framework - “Critical 15” Prioritization Matrix

- “Critical 15” prioritization matrix for companies to adopt, prioritize and plan, based on their business dynamics
- The matrix covers current, near to medium and long term horizon for companies

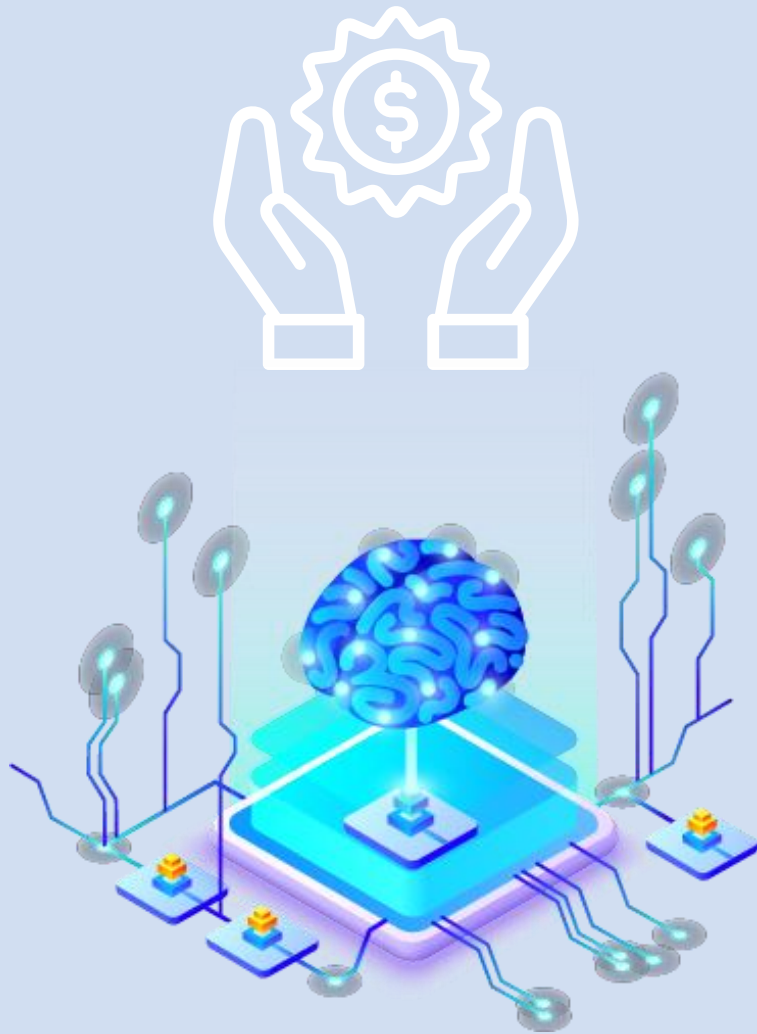
KEY POINTERS FOR USERS

- Choose action items on the basis of impact on business (top line, bottom line, risks, implementation effort required, time taken for implementation)
- Consider adaptability based on nature of business (specialty vs commodity), and demand and pricing elasticity
- Consider customer-centricity, enterprise-management, and digitalization as core pillars of excellence
- Under digitalization, focus on in-plants digitalization, procurement & logistics transaction management, and customer center of excellence

The “Critical 15” Prioritization Matrix



MITIGATE to Safeguard Current Business from Disruptions



Health Safety Measures



- Sanitization, social distancing and PPE adoption practices as per international guidelines to ensure continuity of operations and workforce protection.

Demand Planning



- Anticipating demand distribution by major target markets, customers and geographies;
- Analysis of head-winds and tail-winds driven by macro-economic factors

Portfolio Optimization



- Prioritize portfolio value proposition, in line with demand dynamics, by major target market, customers, and geographies
- Establish necessary customer connect

Flexible Production



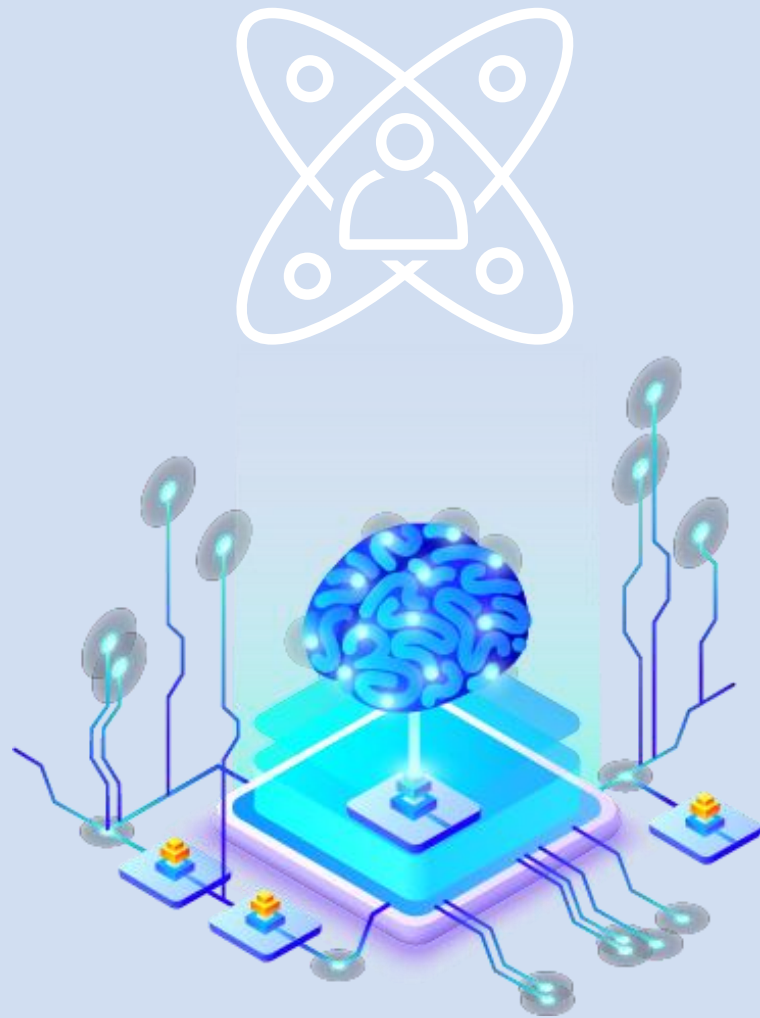
- Test out flexibility in manufacturing volumes of various product lines – example, through swing production capabilities; This will ensure efficient production

Supply Chain De-bottlenecking



- Envision and enact on potential supply chain bottlenecks in view of external factors (such as regulations) and internal factors (such as target market changes, product mix changes)

SUSTAIN to Remain Relevant in New Post-COVID-19 World



Cost Competitiveness

- Focus on spend optimization and lean sourcing
- Leverage raw material price drop (e.g. naphtha)
- Benchmark landed cost with competition

Key Account & Business Model Management

- Identify key accounts, based on demand volume / ticket size
- Establish deep connect with key accounts for long term contracts

Pricing Strategy

- Devise product pricing in line with value proposition, customer sentiment and competition (cost+, market-driven, value-based)

Identify Demand Hot-spots

- Draw clear picture of demand hubs along with associated volumes for the mid term
- Align end-to-end delivery strategy in accordance with the picture

Production Ramp-up

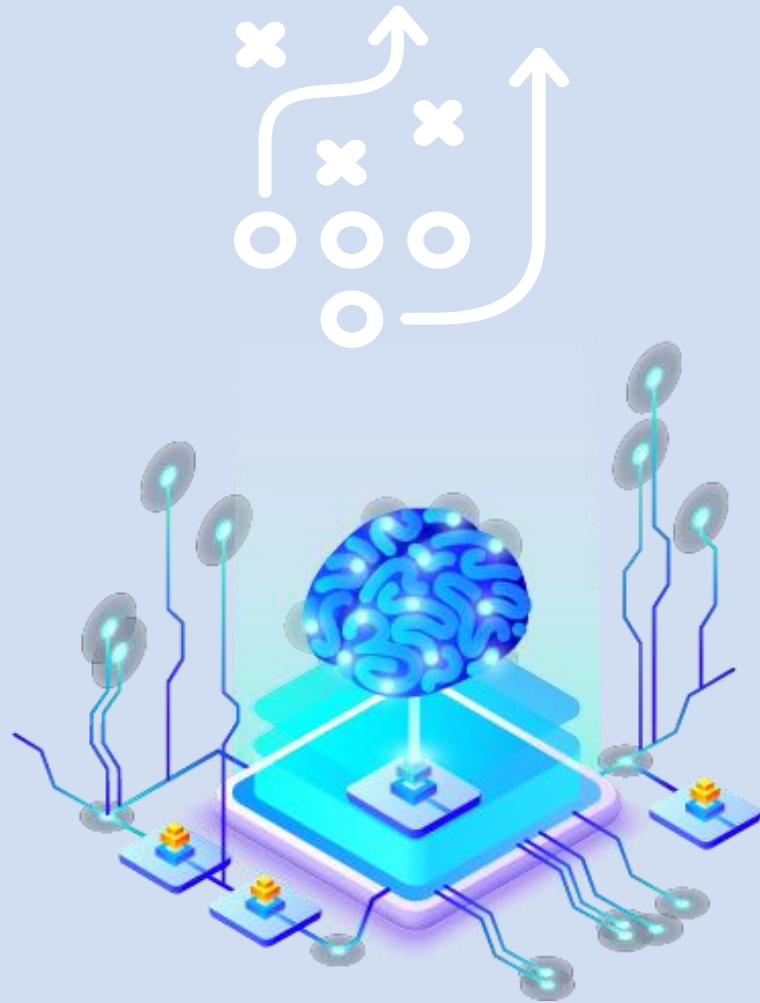
- Execute / scale-up based on average weekly / monthly demand projections
- Activate requisite inventory management

Investment to Return Strategy

- Plan CAPEX activities in view of mid-term demand projections and product value proposition
- Apply staggered approach to CAPEX implementation to minimize risks

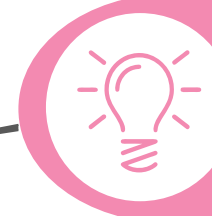


GROW to Create Leadership Position



Scenario Analysis

- Conduct short- / mid- / long-term scenario analysis of technologies, value chain, key target markets
- Undertake rigorous scenario planning for top-line growth



Disruptive Ideation

- Tap unexplored ideas to stay ahead of the curve
- Develop new materials / technologies to gain early-mover advantage



Cost Transformation

- Strategize and implement long-term transformative measures on individual SG&A heads, in line with bottom-line and lean targets



Change Management

- Identify key change management areas, in line with long-term growth strategy
- Train workforce; implement and monitor KPIs

