

Rapid Response

A pragmatic approach to maintaining supply chain resilience in times of uncertainty

Navigating the human and business impact of COVID-19

March 2020

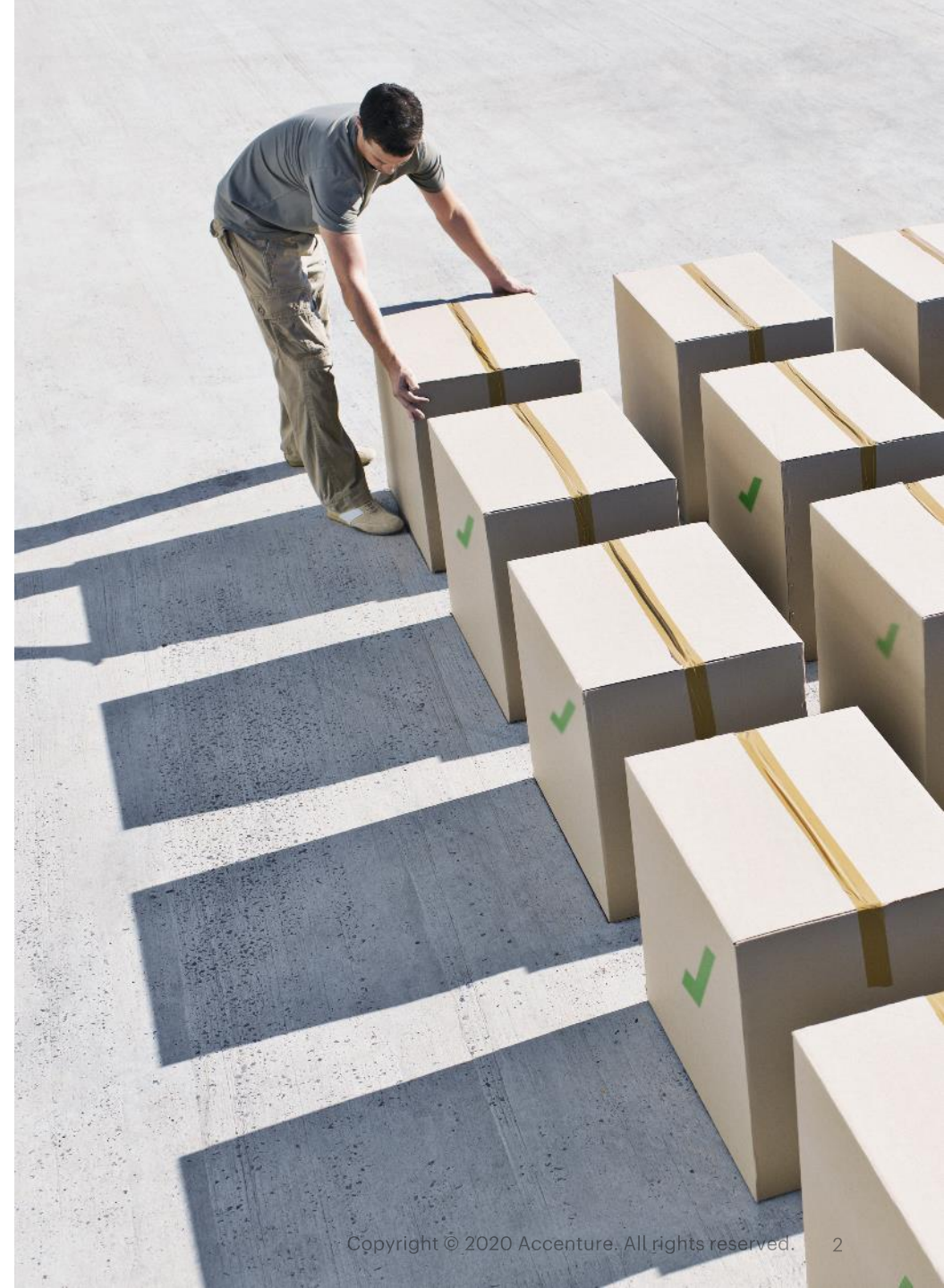


Coronavirus risks are overwhelming the **virtual lifeline to humanity**

This health and humanitarian emergency presents a serious threat to people across the planet. Business leaders must make rapid decisions, and take immediate actions to sustain business operations to serve their customers, clients and communities, as well as protect and support their workers.

For the **supply chain function, the virtual lifeline to humanity**, the criticality of maintaining operations is heightened during these events. The supply chain is critical in getting goods and services quickly, safely and securely to all customer types and more-so those who are quarantined, self-isolating or who are working at the frontline of the medical response.

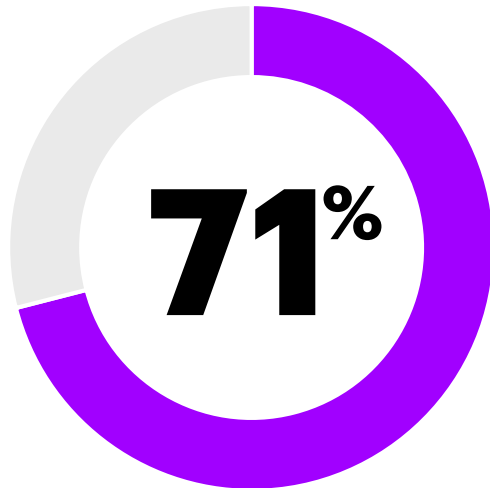
Although it is currently a difficult time, the supply chains that are able to immediately mobilize their COVID-19 response and take swift, 'no-regret' actions will be in a better position post-event, with a stronger, and more resilient supply chain going forward.



Most supply chains are underprepared

The scale of the impact on supply chains eclipses anything most companies have anticipated. Global epidemics like COVID-19 ranked low as a focus for risk mitigation efforts, per a survey of supply chain leaders.¹

For low-probability, high-impact “black swan” events like a global pandemic², standard risk models fall short. As a result, most companies do not have contingency plans in place, leaving supply chain executives scrambling to respond.



of companies surveyed do not have a business operations contingency plan in case the outbreak lasts longer than a few weeks³

WHAT is needed to rapidly and effectively mobilize my organization?

HOW do we recognize the most critical impacts to our customers, people and business?

WHAT data and analytics are required to measure and inform the insights to our action plan?

HOW does our action plan account for the characteristics of our supply chain?

WHAT needs to change in my operations to ensure ongoing agility and resilience?

Sources: 1); Supply Chain Insights, 2018

2) [HBR: How Coronavirus could impact the global supply chain](#)

3) (Webinar) The Economist: Coronavirus outbreak – economic and business implications, 03-February 2020

The impact on the value chain is **significant**

Global supply chains are being severely impacted along all dimensions of the value chain. But the biggest effects may be yet to come for some, or as a rebound for others...

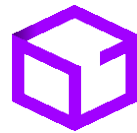
Examples of challenges across the value chain:



Suppliers

Significant challenges in distributing supplies, e.g. quarantine and trade restrictions.

Consumers concerned with traceability and source country of products.



Manufacturing

Factories in quarantine, production plants totally shutdown.

Production challenges due to lack of raw materials availability.



Logistics

Travel restrictions including airports, roads, trains and ports.

Market closures.
Carriers suffering shortage of drivers / driver man-hour restrictions.



Sales

Consumers shifting demand away from stores to online and prioritizing 'need' vs. 'want' purchases.

Stores are closed or have shortened hours, with mass inventory depletion due to panic purchases.



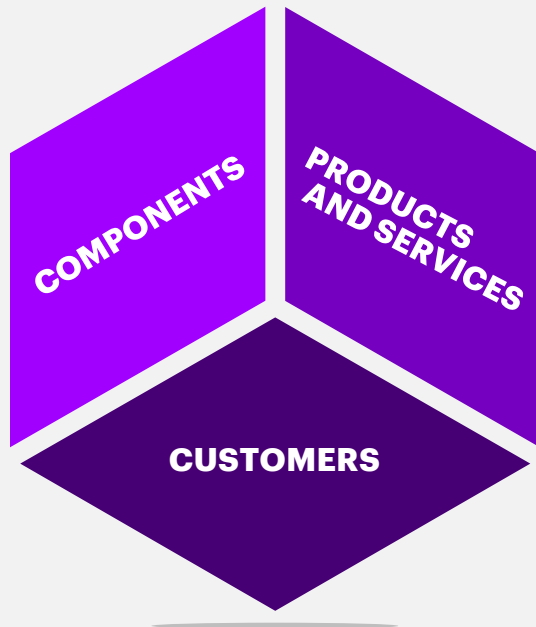
Labor

Quarantine measures cause labor shortages and temporary unemployment.

Employees preferring to stay/work from home or in quarantine and those in service industries unable to do so.

Reduced productivity from infection and/or fear.

Different supply chains, different impacts



To address the effects of disruption such as COVID-19, companies must recognize the unique characteristics and capabilities of each **component** within their supply chain to optimize holistically.



Further, companies must understand the distinct relationships between these supply chain components and the characteristics of the **products and services** they provide to address the complexity in their portfolio.



Finally, companies must consider the relationship between these products and services and their **customers** to serve the broad array of unique needs.

Network	Partnerships	Suppliers
Facilities	Equipment	Workforce
Technologies	Systems	Data

Discrete	Bulk / Liquid	Labor Intense
Consumable	Perishable	Regulated

Segments	Channels	Markets
Demand	Profiles	Critical Needs

Not only do supply chains differ **across** industries and companies but also **within** companies themselves as many companies operate multiple supply chains – segmenting by their archetypes is a vital step in addressing disruption.

Action plans must begin **now**

GOING FORWARD

WITHIN 1-WEEK

Establish command center and begin rapid response deployment

- Turn-key cross-functional command center, including communication channels set up and activated governance

WITHIN 72-HOURS

Assess current operations and initial recommendations

- Insights from critical data gathering
- Initial business continuity plan risk assessment
- Initial risk/disruptions heat map
- Initial KPIs and value framework impact assessment
- Risk/disruptions prioritization & scope definition
- First scenario modeling with decision recommendations

WITHIN 2-WEEKS

Rapidly adjust operations and continue response cycle

- Run scenarios & quantify risk impacts
- Continuous risk assessment and prioritization, adapting the response protocols accordingly

- Top priority actions executed based on predefined protocols

WITHIN 4-WEEKS

Establish an ongoing operating capability

- Complete stand-up of operational command center
- Functional streams actively executing and monitoring protocols
- Automate updates and visualization of risk mitigation and value impact resulting from actions taken
- Update business continuity plan considering future capabilities across people, technology and processes

- Establish a robust sense & respond organization that is ready to react, with agility and speed, to unforeseen value chain disruptions

- Leverage analytics to forecast disruptions and their impacts where possible, uses simulation based scenario modeling, extracts insights from ERP to manage the response protocols with agility

Deployed using Agile methods, continuous iteration and feedback loops

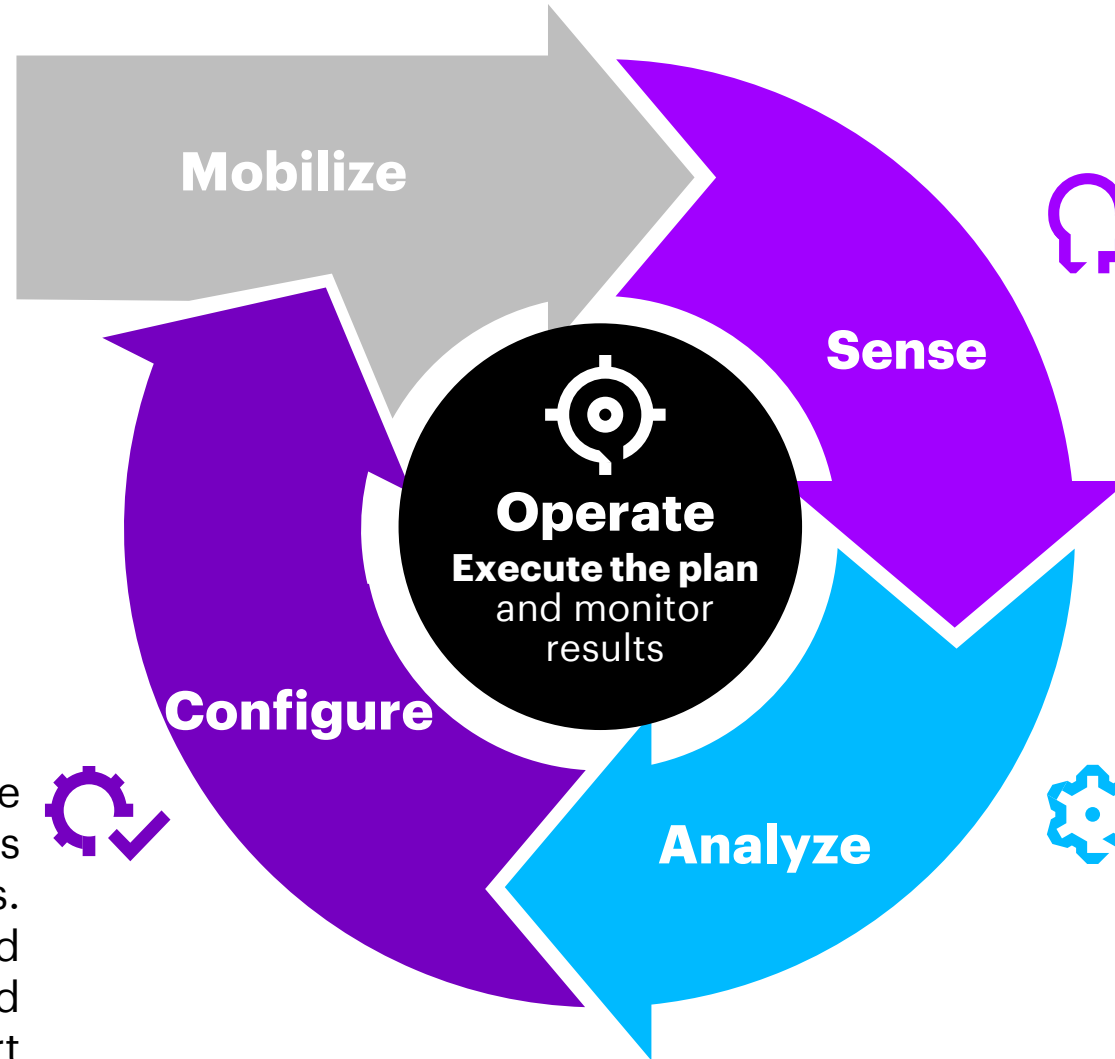


What needs to happen **now?**

Companies must develop a rapid response to address current disruptions and strengthen operations in preparation for potential future value chain risks and a new normal.

A roadmap to navigate disruption, now and in the future

MOBILIZE the command center and (initial) response plan. Establish operating rules for responses related to all supply chain interventions and contingency management



Mobilize

Sense

Operate
Execute the plan
and monitor
results

Configure

Analyze



SENSE and prioritize new risks and implications to your supply chain components, products / services and ecosystem



ANALYZE what-if scenarios and protocols for source, plan, make, distribute and service implications

CONFIGURE and tailor the network and products flows to execute the protocols. Develop balanced scorecard to track and measure the effort



Mobilize the response

The supply chain driven by a command center must orchestrate disruption response with speed, agility and certainty to maximize mitigation effectiveness. Once established it co-ordinates the rapid response.

NOW

- **Stand up the command center:** define charter and purpose, identify stakeholders and team, align with similar capabilities, design governance, establish communication channels, establish approach to identify, prioritize and manage interventions e.g. early steps in determining data requirements, creating end-to-end visibility and operations performance as precursors to control tower
- **Engage the business and workforce:** identify and include stakeholders and extended team members in all phases of mobilization
- **Establish an action plan:** define and coordinate an actionable plan of the protocols to mitigate the risk, accounting for sequencing, effort (resources and time), cost and cross-functional engagement / support
- **Align action plans:** identify potential correlations between different protocol action plans and ensure no conflict / collisions exist (e.g. get cross-functional stakeholder buy-in for action plans)
- **Execute response protocols:** mobilize and empower cross-functional working teams to operationalize / implement the customized response protocols
- **Communicate proactively:** keep the ecosystem partners, customers and employees informed throughout the event

NEXT

- **Operate risk mitigation as business-as-usual:** integrate automated risk mitigation workflows, scenarios and protocols into business-as-usual playbooks to quickly switch from normal operations to disruption response, as needed



Path to resilience

A **Consumer Technology Hardware Company** had significant issues orchestrating the delivery of finished goods across their global network of manufacturing and distribution facilities, impacting their ability to promise and execute on deliveries.

Through our partnership, the company implemented a centralized control tower across their supply chain, tracking product movements in real time, the client was able to gain insight into overall delivery performance, focus on customer impacting exceptions, automate customer communications, and raise overall performance.

The Control Tower was built with extensive internal and external data feeds, analytics and machine learning driven exception management and disruption early warning, and visibility dashboards to enable monitoring of complex situations.

Relevance to COVID-19

The supply chain control tower can provide quick visibility into current operations and forecasted product / service availability and allow the supply chain to make rapid decisions regarding network, secondary suppliers, re-routing product flows, as well as internal optimization.

Sense the risk(s)

Rarely do supply chain disruptions occur with much notice. But due to the availability of big data, intelligent systems and a connected ecosystem, today's supply chains can anticipate a disruption event based on the earliest of impacts.

NOW

- **Capture the unique characteristics of your supply chain** (components, products and services, customers) including segmentation analysis as they relate to COVID-19
- **Define risk/disruption scope dimensions:** determine the elements for which the risk pertains (e.g. business, people, geographies, products, processes, functions, stakeholders or business partners, etc.)
- **Identify, map and prioritize risks:** identify new and/or potential risks / disruptions, understand their root-cause and categorize considering potential future impacts. Prioritize the most critical ones (e.g. material/parts/labor shortage, asset downtime, reduced demand, gov't compliance, etc.) considering all risk dimensions (business and social)
- **Identify affected community and ecosystem:** determine how the identified risk is affecting or could affect the company's extended community (worker's families, 3rd parties, suppliers, etc.) and the value chain's operations

NEXT

- **Establish an intelligence-based capability** allowing an automated identification and evaluation of risks and disruptions (e.g. new geographies affected, trade limitations, workforce / travel restrictions), and proactively recommend mitigating actions (e.g., sift big data / social media to understand consumer behavior changes)

Path to resilience



When struck with a major IT disruption due to a ransomware attack, we partnered with a **Pharmaceutical Company** to accelerate their migration to SAP Ariba Supply Chain Collaboration platform.

Although the platform was designed to standardize co-manufacturing on-boarding, planning cadence, and data expectations, we applied the platform's capabilities to ensure local sourcing capacity of critical active pharmaceutical ingredients and alignment with co-manufacturing plans to sustain production volumes.

Relevance to COVID-19

Using the platform which is now live and the intelligence collected across the ecosystem, the supply chain can immediately identify COVID-19 specific impacts to raw materials, align co-manufacturing capacity plans, enable global visibility of plan adjustments, and rebalance production where possible.

Analyze the risk(s)

Both predictable and unpredictable disruption events require supply chains to quickly assess end-to-end operations and quantify the impact, both financially and operationally to speed decision-making.

NOW

- **Evaluate risk impact:** identify and measure key risk indicators and quantify their impact to prioritize and focus on key strategic decisions (e.g. 'If this...then that...', 'if a parts shortage occurs, then we have lost sales')
- **Model pragmatic scenarios:** run scenarios for controllable foreseeable uncertainties such as compliance, material, capacity, talent and financial issues and quantify alternatives
- **Evaluate alternatives:** assess existing alternatives (e.g. secondary suppliers, substitutions, temporary labor needs) and determine if constraints still exist
- **Understand human impact:** model potential workforce implications, constraints, scenarios and voice of the employee
- **Conduct quick-scan of the value chain:** rapidly evaluate the end to end value chain performance using advanced modeling tools to identify dependencies on / correlations with risks and root causes

NEXT

- **Proactive scenario identification:** based on continuous risk exposure, develop and run scenarios for likely and less-likely events, accounting for impacts across the value chain
- **Robust alerts management:** business and operational opportunities identified and driven by a simulation and optimization engine

Path to resilience



In the midst of a disruption related to an incident at a one of their key manufacturing sites, a **Discrete Products Manufacturing Company** worked with us to develop and implement an analytics-based model to quickly quantify the financial and operational impacts to their supply chain. The model's output highlighted dependencies, bottlenecks and an estimated time-to-recover. The analytics provided objective prioritization; allowing the company to take action on the highest-risk exposure elements, find supplier alternatives and mitigate production impacts.

Relevance to COVID-19

The supply chain is leveraging the analytics-based model to evaluate suppliers in different regions (beyond Wuhan, Italy, etc.) and asking the system to identify:

- which products and assemble facilities will be impacted (face shortage) and for how long
- what is the financial and market-share impact of these supply shortages
- how to allocate the remaining capacity between various products to achieve a certain objective

Configure the risk response

Once the identified disruption events are evaluated and impacts are quantified, the supply chain must decide which response actions to take, by whom and with what trade-offs / considerations.

NOW

- **Define and apply a pragmatic value-driven decision framework:** create a 'decision tree' to guide the decision-making process based on value delivered
- **Customize risk/disruption protocols:** leveraging an initial library of disruptions, tailor responses and end to end protocols to the specific event (e.g. move inventory from China to other regions, reconfigure forecasting based on demand shrinkage / supply unavailability, flexible work models)
- **Define value chain KPIs:** identify the priority strategic and operational KPIs affected by protocols which will need to be monitored and reported (e.g. total delivered cost including the end-to-end costs to deliver a product / services, pace of adoption and change management)

NEXT

- **Embed resiliency into existing operating model:** adjust policies, protocols, playbooks, what-if scenarios and modify talent strategy to account for risk mitigation
- **Manage extended impacts:** address continuing impacts post-event (e.g. managing the ramp up in demand and supply, balancing inventory)
- **Define suite of risk KPIs / performance metrics:** provide holistic view of financial and operational KPIs integrated with protocol results
- **Utilize intelligent capabilities:** leverage artificial intelligence and machine learning capabilities to improve the protocols definition and customization

Path to resilience



Owing to rapid shifts in consumer demand across an expansive product portfolio, a **Consumer Foods Company** faced challenges with responding to the manufacturing network distributors. This was further challenged with legacy systems, cumbersome data management and increasing product and market complexity. We worked with them to improve agility across its product lifecycle management capabilities. As part of its SAP implementation, the company was able to quickly leverage the new processes and digital platform's flexibility to adapt and simplify material sourcing, product development and total time-to-market.

Relevance to COVID-19

COVID-19 is creating unprecedented shifts in global customer demand (by volume and by mix). Product management requires enhanced capabilities to sense shifts in demand and respond by rapidly adjusting their product portfolio and maintain product availability during demand spikes due to the epidemic

Operate with agility

As the rapid response gets underway, the disruption protocols and operations must adjust / adapt to the resulting changes to effectively and efficiently deliver to its customers now and in the future.

NOW

- **Establish operations team:** establish a cross-functional team to execute the protocol and define clear lines of communication from the command center so that decisions are executed immediately and accurately
- **Adjust to protocol execution:** ensure business continuity and recognize employee concerns during the disruption by adapting to impacts from protocol execution
- **Capture and evaluate results:** define integrated dashboards to monitor the results of the protocol execution and alert the command center when additional protocols may be required

NEXT

- **Automate protocol execution:** automate actions and protocols once their effectiveness is proven and confirmed using intelligent automation capabilities (e.g. robotic process automation, analytics, machine learning)
- **Ensure that learnings and capabilities developed** in the Command Center are scaled throughout the business
- **Ensure protocols and analytics capabilities established** in Command Center are harmonized with ERP



Path to resilience

Despite being a recognized industry leader in health, safety and environmental practices, a **Resources Company** was experiencing a sudden increase in safety-related incidents in multiple facilities – putting the well-being of their employees at high risk and potentially impacting their ability to serve customers.

We helped by creating advanced end-to-end operations models using Prime Value Chain Analysis to accurately depict the way work was performed – exposing operational complexity not adequately addressed by the health and safety assurance program.

By overlaying the operations models with data from the employee's safety incidents and key elements of their health and safety assurance program, we helped the company understand the relationships between incidents, policies, training, and operations monitoring.

Relevance to COVID-19

Complex supply chain operations can introduce countless factors with the potential of affecting the well-being of workers. To address potential risks, advanced visualization modeling and analytics linked to policies, practices and the employee experience can surface root causes and support development of required interventions.

Effective **Rapid Response** requires key fit-for-purpose capabilities



Mobilize



Sense



Analyze



Configure



Operate

Command center (design, capabilities and playbook)

Intelligence (spanning demand prediction, suppliers and capital operations)

Applied analytics (social listening, text mining, artificial intelligence derived by machine learning)

Intelligent automation
(robotic process automation)

Control Tower (intelligence, transparency, alerts management, data cleansing and harmonization)

ERP analytics, extracting insights, developing plans

Data integration (data harmonization & data quality from different data sources)

Optimization (physical network, labor planning, product flow, inventory positioning)

Risk analyzer

Simulation / scenario modelling

Change management and communications
(brand, purpose, strategy, services)

Process digital twin

Op model design & workforce planning

End-to-end value chain transparency & analytics

Leverage supply chain managed services

An eye on the **future...**

**Codify
lessons
learned now**

**Capitalize
on alignment**

**Build trust
and maintain
momentum**

**Evolve your
supply
chain**

Thrive in the new **normal.**



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