



A COVID-19 Virtual Ideation Experience

Team Topic and Number: Manufacturing and Industrial Team 1

Team sponsor/chapter (if applicable):

Team Lead: Karel Stransky

Team Members: Leah Ong, Andrew Burton, Tim Armstrong, Garrick Wang, Dinakar Doraikannu

Executive Summary

Across the world businesses are grappling to understand the extent to which supply chains and manufacturing will be impacted by the Coronavirus pandemic. A multitude of factors are weighing on the decision making of corporate real estate professionals with the constant need to balance risk versus costs.

It's anticipated that supply chains the world over will be re-organised as manufacturing basis shift. Businesses will need to develop a deeper understanding of their people, business environment, customers and real estate in order to compete. As such, portfolios will change in terms of location, function, size and design.

This report seeks to address these factors and provide corporate real estate professionals with forecasts and key recommendations to help navigate the current climate.

Business Forecast

COVID-19 Spread

Optimistic - Virus disappears, vaccine becomes available and countries navigate with limited economic impact. China and the East lead the way with Europe and the Americas following at differing speeds. Control over spread results in a speedy economic recovery. Africa also begins to see declines although slower and with greater economic consequence.

Most Likely – Virus continues to spread but with effective controls most countries manage to reduce spread without further significant restrictions. Considerable economic impact over an extended period but strong growth thereafter. China and the East see several locations suffer from additional waves of infections mostly from neighboring countries with similar challenges evident in Europe and the Americas. Africa sees significant challenges but largely 'hidden' due to limited testing and poorer health care.

Worst Case – Virus continues to spread resulting in complete global lockdown with severe economic consequences plunging the world into a deep recession lasting several years. Globally we witness significant growth of infections and

relevant deaths although the population generally becomes more resistant. Medical attention, at least in developed nations, becomes better equipped.

Governmental response

Optimistic – Globally, complete country lockdowns are limited to a period of the Pandemic, peak 2/3 months then slowly released. Countries introduce robust economic stimulus to support businesses. China and the East end lockdowns completely with Europe and the Americas following quickly behind and Africa later.

Most Likely – Globally, selective lockdowns continue causing unpredictable supply and production disruptions. China and the East see sporadic, sometimes repeated restrictions and Europe continues to evolve restrictions limiting economic growth. The Americas will also see restrictions impacting supply chains and production whilst Africa, and less developed countries suffer significant disruption and Governmental challenge.

Worst Case – Globally, the dilemma between complete lockdown and severe economic impact on already exhausted budgets divides opinions. More autocratic countries may be less impacted due to greater restrictions; less developed countries will suffer. Europe and the Americas will see significant production and supply chain disruption impacting jobs and the economy. Collapse of government in poorer nations likely.

Business Consequences – Three Month

Impact on	OPTIMISTIC GRADUAL CITY UNLOCKING – DISRUPTION LESSENING and ECONOMIC SLOW GROWTH	MOST LIKELY MORE COUNTRY/CITY LOCKDOWNS – GROWING DISRUPTION WITH MAJOR ECONOMIC IMPACTS	WORST CASE GLOBAL COUNTRY/CITY LOCKDOWNS WITH SIGNIFICANT ECONOMIC DISLOCATIONS
People	Sense of optimism emerging Positive stories get widely shared Good Health regimens and practices get adopted and best practice becomes common practice	Staff anxiety rises, increasing need for clarity and consistency. Multiple countries – Health services challenged Food/water supply shortages Increased crime	Staff frustration rises if care and consistency are not demonstrated. Most countries – Health services overwhelmed Food/water supply shortages and food safety issues, Breakdown of social order.
Business Environment	Confidence in the markets grows. Travel restrictions begin to lift and demand on airlines increases	Company finances worsen increasing pressure to reduce costs Company value erosion increases	Companies financial frameworks significantly challenged Credit / company value decreases significantly
Assets	‘Normal services’ begin to happen globally Demand for product leads to increased opportunities	Staff shortages managed with interim protocols and solutions. Supply chain uncertainty and delays impacting operations. Financial stresses across all sectors.	Multiple shutdowns - staff shortages and logistical issues. Major supply chain interruptions severely impacting operations. All sectors facing financial meltdown
Reputation	Forward thinkers are recognized and appreciated. Loyalty to brand increases	Supply interruptions in regional markets bring reputation into question.	Significant supply interruptions provoke extensive negative customer attention.

Customers Shareholders	Decisive and responsible companies begin to reap rewards	Criticism mounting if companies are slow to act (by staff, governments, broader society).	Lack of confidence damages reputations and company loyalty
---------------------------	--	---	--

Business Consequences – Twelve Month

Impact on	OPTIMISTIC GLOBAL RECESSION AVOIDED, SIGNS OF STRONG ECONOMIC RECOVERY	MOST LIKELY GLOBAL DEEP U SHAPE RECESSION, SOME EARLY SIGNS OF ECONOMIC RECOVERY	WORST CASE GLOBAL DEEP L SHAPE RECESSION, GROWING POLITICAL INSTABILITY
People	People begin to assume 'normal' working patterns and social connections	Prolonged period of home working leads to productivity loss and lower quality decision-making.	Prolonged home working leads to loss of engagement, significant productivity loss and poor decision-making.
Business Environment	Recovery from recession is quicker than anticipated Global recession is avoided, and markets recover quickly	Government commitments and financial stimulus help stabilize economies. Demand in Europe and USA grows Consensus that the global recession will be "deep and longer"	Government stimulus measures are insufficient Global recession significantly damages national economies Political instability/disruption and regime change in some countries.
Assets	Impacted assets restore normality and grow from the experience	Impacted assets become accustomed to managing. Some normality returns as national/local outbreaks subside.	Impacted businesses shutdown for prolonged periods. Below critical staffing levels, lack of demand.
Reputation	Positive recognition for companies who stayed true to values	Companies remain loyal to suppliers and relationships strengthen	Long-term relationships damaged, trust eroded.
Customers Shareholders	Major capital projects and investments begin to be explored	Major capital projects and investments slowed/reduced to a minimum	Major projects and investments stopped to optimize cash/returns.

Business Response

With consumer demand across multiple sectors in freefall, businesses are struggling to stay in business, many have already gone. Demand drop, coupled with the difficulty in staying operational due to movement restrictions, makes the task even more difficult. Safe operations will be compromised without appropriate resources and will mean reductions or suspension of operations.

Governments in many Countries are doing all they can to support businesses and reduce unemployment but it's never enough. In the last six weeks an unprecedented 30 million Americans have sought unemployment benefits and that story is typical across the globe.

Assuming a 'Most Likely' scenario, to survive, businesses need to go into 'survival mode' and make decisive decisions that won't always be popular. Stopping dividends, bonuses, pay increases, and reducing hours and salaries, are vital for survival. This would please some but will equally frustrate or annoy many. Regardless, business must act quickly

and recognize that ‘normal practice’ won’t work anymore. New thinking and a ‘fail fast, move on’ mentality will become a necessity. To stay in business, businesses need to be ruthless, clinical in decision making and fast on delivering on those decisions.

As Countries ‘emerge’ from the crisis businesses must move quickly and be ready to meet exceptional demand as people seek to make up for lost time. China is already seeing a significant increase in demand. Shops, restaurants and domestic air travel are all climbing, and look set to continue as people begin to feel safe. Many Countries in Asia are beginning to ‘relax’ some of the restrictions. So too are some European Countries and American states. Businesses that planned and acted decisively will be ready to capitalize.

Recommendations

Operational Measures	Building/Space Modifications	Portfolio Changes
<p>Safety</p> <p>Increase Sanitation</p> <p>Stagger shifts and breaks</p> <p>Restricted visitors</p> <p>Arrival temperature monitoring</p> <p>Behavioural improvements on hygiene</p>	<p>Factories</p> <p>Increasing Automation – digitalization and automation</p> <p>Consider production locations</p> <p>Reducing touchpoints with innovation - Social distancing rules, Work from Home, Fumigation of parts before use, Hand wash sirens every hour, contactless sanitizing dispensers wash basins.</p> <p>Minimized staff interaction</p>	<p>Expansions</p> <p>Warehousing space as demand for distribution increases. Higher inventory and supply chain resilience over efficiency</p> <p>Possibility of reshoring facilities</p> <p>Factory location changes where financially and logistically possible</p> <p>Secondary factories offshore spreading load, reducing risk</p>
<p>Risk</p> <p>Decoupling supply chain - Supply chain pivots and alternative suppliers</p> <p>Outsourcing functions that reduce costs</p> <p>Increase inventories protecting against prolonged disruptions.</p>	<p>Air flow and ventilation</p> <p>Follow instructions of local regulators</p> <p>Extended working hours of HVAC systems.</p> <p>Increase fresh air ventilation. Switch air handling to 100% outdoor air. Close re-circulation dampers/valves when possible</p> <p>Heat-recovery systems switched off unless a system has 100 % supply and return air separation</p> <p>Switch fan coils either off, or operate so fans are continuously on</p>	<p>Space Reductions</p> <p>Early exit to improve cashflow with options to re-enter later</p> <p>Consider sub-lease or assign leases of excess warehouse space, reducing costs.</p> <p>For non-critical assets, explore repurposing where possible and rightsizing where necessary.</p>
<p>General</p> <p>Digitally connected tools to improve workflow and collaboration</p> <p>“Virtual shift” specialists connected remotely to guide and support reduced onsite personnel</p> <p>Refine processes to manage a crisis with remote working and supply disruptions</p>	<p>General</p> <p>Increase contactless solutions on touch points</p> <p>Significant changes to cafeterias allowing social distancing, limited contact with hard services and food preparation</p> <p>Assess capabilities for building manufacturing resilience. Data-driven analytics and scenario simulation/modelling, advanced network analysis, mobile and remote worker enablement, remote operations centres, automation and robotics.</p>	<p>General</p> <p>Reevaluate portfolio strategy and restructure as required</p> <p>Pursue MandA options evident from the downturn</p> <p>Conduct a network analysis of critical and non-critical assets to develop right-sizing hypotheses.</p> <p>Deploy digital solutions that build resilience</p>

Final thoughts

When COVID-19 diminishes, companies will need to rethink 'New Normal'. Disruption on manufacturing has had severe operational and financial consequences and has forced manufacturers to rethink risk management profile, contingency plans, workforce safety and operations. In addition to Real Estate Costs, companies need to understand risks involved with location of production facilities and warehousing space in order to ensure resilient and efficient supply chains.

Our recommendations are intended to provide key takeaways that Corporate Real Estate professionals and Service Providers could practically use. Companies must make decisive decisions on capital investment and underutilized assets and/or build greater flexibility in current assets.

The COVID-19 pandemic will have long-lasting implications for the future of manufacturing. It has clearly highlighted the pressing need for businesses to build greater responsibility, agility, responsiveness, and resilience into their manufacturing operations. Manufacturers need to look closely at end-to-end operations and assess how well positioned they are to respond to future disruptions with greater confidence and speed.

Companies need to assess existing operating models, challenge old ways of working and build greater transparency around supply chains. More than ever, companies need to adapt and reshape to become leaner and more agile. It is our opinion that this challenge has given Corporate Real Estate and the Manufacturing Industry a significant 'wakeup' call and the chance to learn and evolve faster.