McKinsey & Company

COVID-19 China Response Learnings

Initial observations

March 4, 2020

About this perspective document

- **COVID-19 is, first and foremost, a humanitarian challenge.** COVID-19 has affected communities on multiple continents, with over 2,900 deaths out of over 88,000 reported cases. China has been on the frontlines of this outbreak and to date Wuhan and Hubei province have been the most affected locations. Thousands of health professionals are heroically battling the virus, putting their own lives at risk. Overstretched health systems mean that Wuhan and Hubei will need time and help to return to a semblance of normalcy.
- **Solving the humanitarian challenge is the top priority.** Much remains to be done in China and globally to respond and recover, from counting the humanitarian costs of the virus, to supporting the victims and families, to developing a vaccine.
- **This document is meant to help with a narrower goal: provide facts and initial learnings from observing government and company COVID-19 responses in China.** This document illustrates what emerging best practices might become references in other geographies where the virus situation could also escalate into an emergency response phase. It is intended as a preview to help CSTs advising clients in these geographies anticipate the impact of potentially far-reaching public health measures across different sectors and understand the responses adopted by companies in China.

Executive Summary – Covid19 Chinese Lessons

- **COVID-19 China experience developed in three phases** Initiation phase in Hubei province in Dec 2019/Jan 2020; Containment phase through Feb 2020 and; Early Recovery phase starting now in early March. Development so far tracks more optimistic scenarios/estimates during the earlier containment phase.
- **Containment measures have been swift and drastic.** The Beijing proverb recommends "*Put on your winter coat quickly, and take it off slowly*", similarly China's government measures have been swift and extremely restrictive in breadth (travel, quarantine, medical capacity etc.) and depth from national policy down to municipal and local controls. The economic impact associated with this blanket containment of Covid19 will be correspondingly very significant. With 20/20 hindsight, some question whether such a dramatic economic cost was proportionate, especially to SMEs in areas with little demonstrated contamination.
- **Dissemination of official information crucial.** After criticism for an initial lack of transparency in Wuhan, official information was more forthcoming. All levels of decision making from national, through municipal and corporate suffered from opacity and ambiguity regarding the spread of the disease, and also, information about the restrictions themselves. Establishing clear information sources, official reporting and cadence is important, as social media quickly fills any information gaps with all sorts of rumours and bogus theories.
- **Differentiated Impact on various Chinese sectors.** Some areas of the economy like tourism, travel and entertainment, food and beverage, have been decimated, others like consumer and technology have suffered less in terms of demand reduction but are facing supply and logistics disruptions. Financial institutions been least affected, at least for now.
- **Companies have responded** with 'social distancing' to protect employees and customers, crisis decision making over the last few weeks, and broader demonstrations of purpose assisting the public health response for the highest-profile corporates. Many companies are working remotely – in some cases more effectively than trying to hold meetings wearing face-masks and at 'prescribed distance'.
- **Radical shift in corporate priorities.** Smaller companies in the most affected sectors are struggling to survive, and many have begun slashing wages and other costs. Payment of receivables have ground to an almost-halt, as many companies face cash flow crunches. Many longer-term initiatives and projects have been postponed. Priorities have shifted to cash management; front line and internal digital enablement; product, market and supply-chain diversification; and risk management

Agenda

China Public Health Response

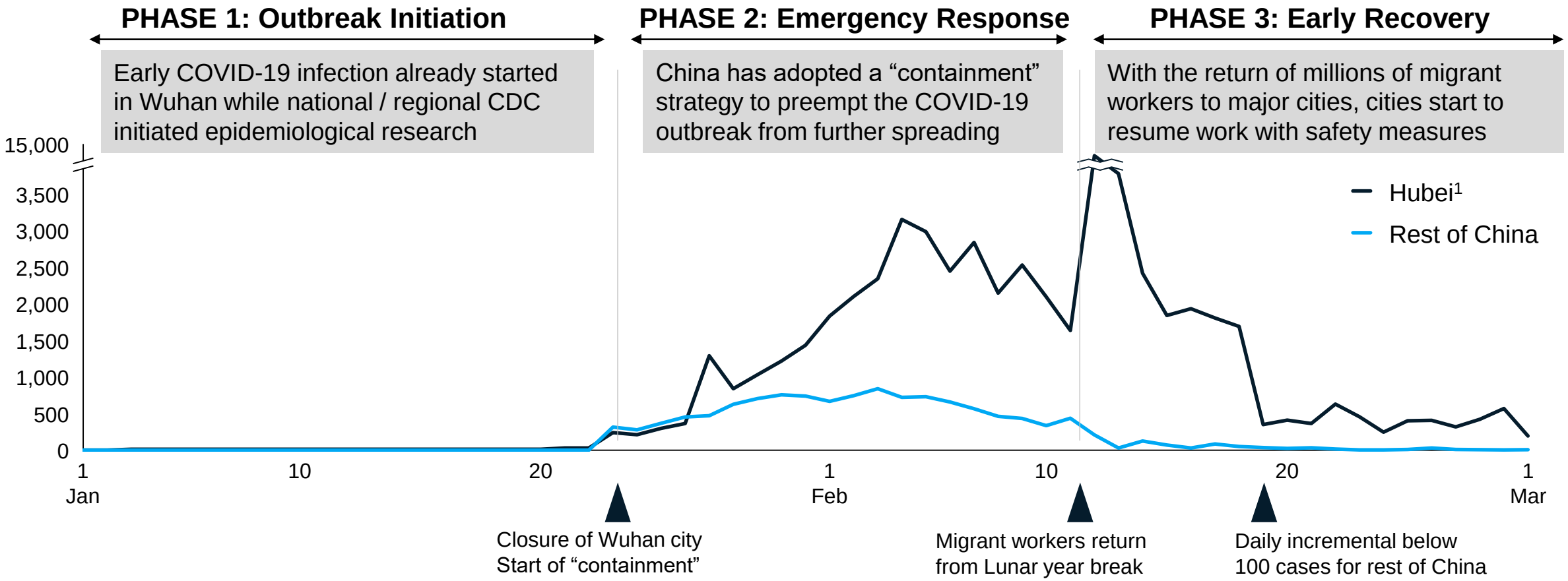
China Company Crisis Response Observations

China Company Response Case Study—Supply Chain Control Tower

Disease situation:
China has entered the early recovery phase of the COVID-19 outbreak

China has gone through two phases of COVID-19 outbreak, and now entered the third phase – where we see millions of migrant workers returning to major cities

Daily incremental number of confirmed COVID-19 cases in China (Jan 1 to Mar 1, 2020)



1. Hubei is the center of the outbreak. From Feb 14th onwards, Hubei added a new category "clinically diagnosed" for reporting cases, which are retrospective COVID-19 cases from Hubei province based on clinical diagnosis

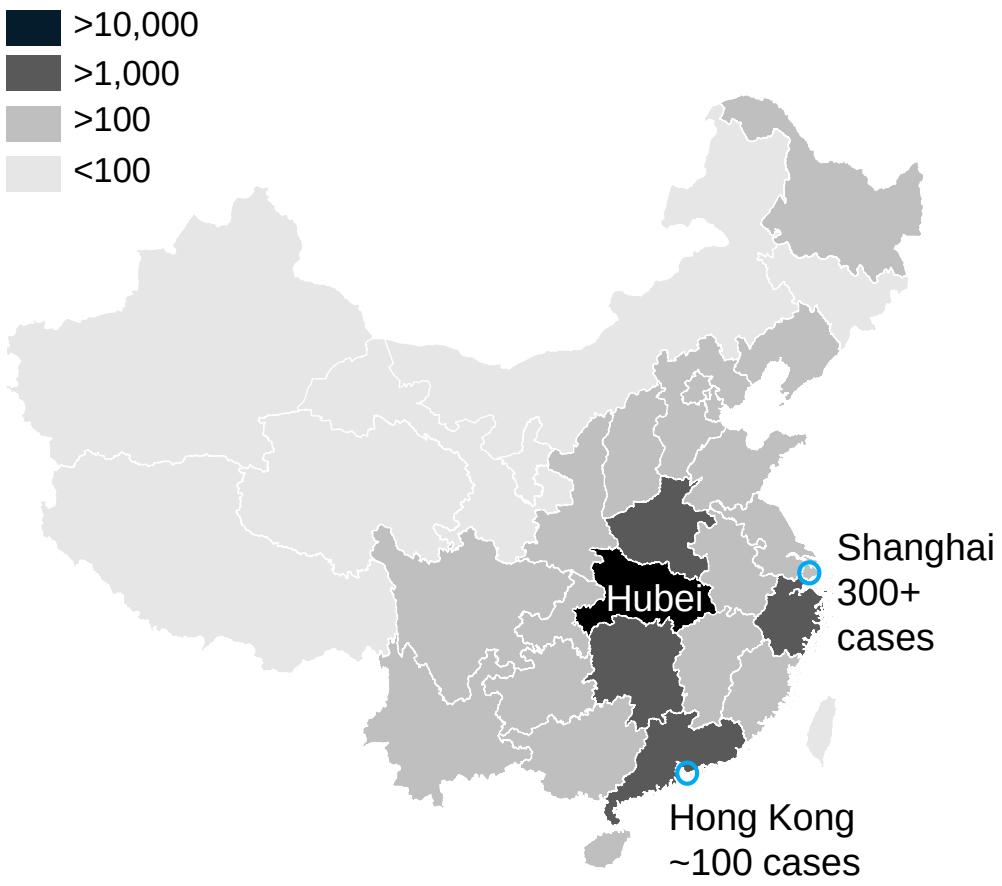
Source: WHO COVID-19 situation report; DXY.com; Press search; McKinsey analysis

Emergency Response Phase: China's central government made drastic interventions after confirming the severity of the situation starting Jan 20

CENTRAL GOVERNMENT

Cumulative confirmed COVID-19 cases across China

Updated to Mar 1st



Central government ministry and commission actions

- Jan 20: State Council incorporated COVID-19 as a notifiable disease by law; NHC[1] started daily disease information release
- Jan 23: locked down transport into and out of Wuhan city; started building a new hospital in Wuhan for severe cases; triggered Level 1 Response for Major Public Health Events in several provinces
- Jan 24: canceled all tourist activities in Hubei
- Jan 25: set up the Central Emergency Response Leadership Team led by Chairman Xi Jinping
- Jan 26: all regional governments set up emergency response teams; started construction on another new hospital in Wuhan
- Jan 27: extended the Chinese New Year holiday until Feb 2
- Jan 28: Customs Administration expedited imports of protective supplies
- Jan 30: protective medical supplies manufacturing partly resumed in Hubei
- Feb 7: Ministry of Education asked students not to return to schools following end of Chinese New Year holiday
- Feb 8: replaced senior leaders of Hubei province

1 National Health Committee

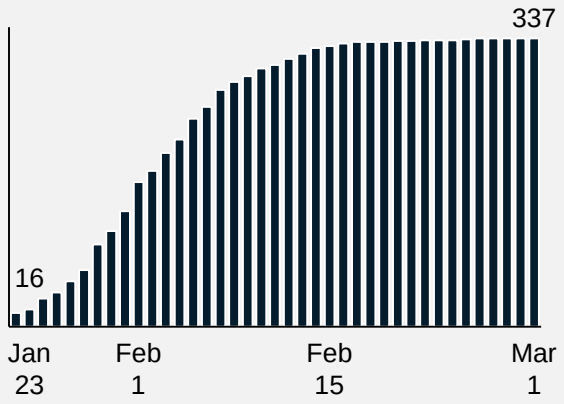
Source: Literature search, government official notices and reports

Emergency Response Phase: local governments across the country implemented stringent "containment" measures (Shanghai example)

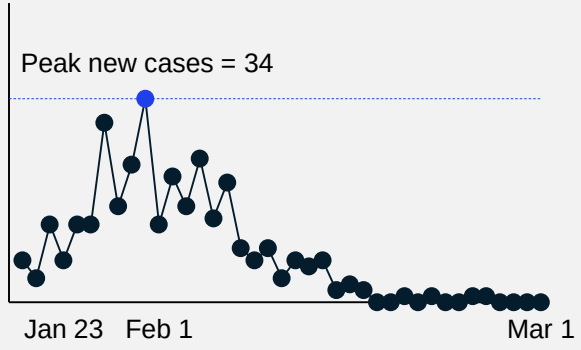
LOCAL GOVERNMENT

Shanghai
Population: 24M

Cumulative reported COVID-19 cases



New reported COVID-19 cases



Shanghai government emergency response measures

Travel

- Jan 24: Triggered Level 1 Major Public Health Event response
  - All incoming visitors to the city required to be quarantined at home or designated places for 14 days
  - Canceled all public events
  - Set up temperature check booths at all airports, train and bus stations
- Jan 26: Canceled all inter-city bus services

Hospitals

- Jan 24: Set up tiered system to treat patients
  - Designated 110 fever clinics to receive suspected cases
  - Set up clear referral network to tertiary hospitals and prepared medical supplies to ensure safety of the staff and patients
  - Set up two expert committees (public health and clinical) to provide expert guidance

Residential Community

- Jan 26: Delayed post-CNY school re-opening to Feb 17 (online remote classes for elementary and high school students resumed March 2)
- Feb 5: Restricted traffic at all residential communities
  - Gates are monitored 24/7 by social workers and volunteers
  - Passes needed to come in and out for residents
  - All visitors required to register and log in health status

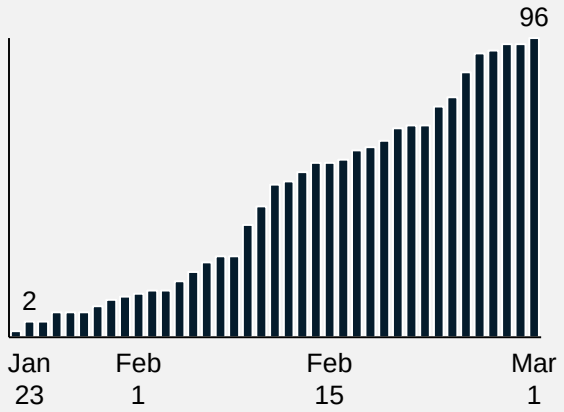
Source: Literature search, government official notices and reports

Emergency Response Phase: Hong Kong put in place measures to reduce people flow from the mainland and enhance community prevention

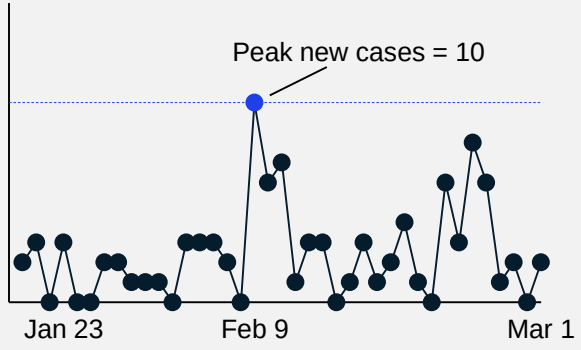
LOCAL GOVERNMENT

Hong Kong
Population: 7M

Cumulative reported COVID-19 cases



New reported COVID-19 cases



Hong Kong government emergency response measures

Travel

- Jan 25: raised government response to “Emergency Response Level”
  - Suspended all travel from Hubei
  - Required health declarations and temperature checks at all border control points
- Feb 3: Closed all but 3 border control points
- Feb 5: 14 day self-quarantine imposed for all returns from Mainland

Hospitals

- Jan 25: Hospital Authority activates Emergency Response level and Central Command Committee
  - Directed suspected cases to isolation beds in selected hospitals
  - Designated centralized quarantine facility for observation of close contact cases
  - All visiting arrangements suspended

Residential Community

- Jan 25: Introduced initial social distancing measures
  - Delayed post-CNY school re-opening to Feb 17 (as of March 3, schools to remain closed at least through April 20)
  - Most civil servants instructed to work-from-home

Source: Literature search, government official notices and reports

Emergency Response Phase: non-government actors have also contributed significantly to public health efforts

Private groups sourced and delivered critical supplies to Hubei

NON-GOVERNMENT

Private individuals & associations

Huazhong University of Science & Technology (HUST) Alumni Association

Alumni from HUST, a research university located in Wuhan, **coordinated donation drives, protective equipment purchasing, and private delivery logistics** through network covering 50 Chinese and 21 overseas chapters

Alumni in Beijing, Germany, Canada etc. have helped **direct shipments to 176 hospitals** in the province with **initial deliveries arriving within 3 days** in January

Hospital workers receiving HUST alumni donations in Wuhan

Non-governmental organizations

Project HOPE

US-based NGO, which co-runs a nursing school at Wuhan University, helped manage private donations from individuals, charities, and companies including 3M and UPS, FedEx, and United Airlines which provided **private air delivery to Wuhan and other affected cities**

Partnered with Hubei Provincial CDC to **distribute more than 4.5 million pieces of protective equipment and medical equipment including ventilators**

Project HOPE coordinated door-to-door delivery of >200 pallets of equipment to local hospitals

Hubei province has received[1]

$1.9B

in private and foreign monetary donations to Feb 29

>92M

pieces of donated protective equipment including 1.5M N95 masks and 1M medical protective suits

1. Official government metric which likely underestimates total private donations including deliveries through informal channels

SOURCE: Hubei NCP Prevention Command Materials and Market Assurance Division, literature search

Early Recovery Phase: local government taking measures across 6 dimensions to manage the risk while laying groundwork for economic recovery

LOCAL GOVERNMENT

	Fact-based decision	Three lines of medical care			Two interventions on supply	
	1 Informed decision making	2 Community epidemic mgmt.	3 Primary care prevention	4 Emergency care	5 Medical supplies distribution	6 Broader solution collaboration
	Transparent prevention information, enabling decisions	**Individual citizen outreach showing care and ensuring safety**	**Grassroot providers coordination to screen patients and make referrals**	**Early response and rapid capacity expansion**	**Expanding stocks and matching supply and demand**	**Businesses and research commu-nity collaboration on solutions**
COVID-19 response best practice examples	Gansu's Health Commission has created an online epidemic control website to publish disease indicators and provide real-time updates on confirmed cases	Chengdu has divided all residential communities into networks with assigned managers who even help e.g. deliver groceries to quarantined seniors living alone	Wuhan community and township health center workers focusing on controlling spread of the outbreak, making immediate triage and referral decisions for suspected cases	Sichuan immediately designated acute care hospitals for receiving COVID-19 patients when there were only 2 suspected cases in the province	The Chengdu city government overcame local supply bottlenecks by purchasing 1M masks from a Japanese supplier	Hangzhou's government worked with Alibaba to develop a health QR code for self-reporting travel history & health status and receiving personalized self-quarantine advice
	Zhejiang is using a digital map and "reopening index" across its 90 cities and counties to precisely define the levels of infection risk	Hangzhou assigned an individual health QR code to each of its citizens to enable personal communication on quarantine and mobility rules	Yunhe Chishi County in Zhejiang has brought together grassroots health centers to help visit patients at home to do screening and temperature checks	Shanghai launched construction of temporary centralized quarantine and treatment facilities in January, winning valuable time for the healthcare system	Overseas Chinese volunteers developed a medical supplies platform for Hubei, helping foreign donor companies directly connect with local hospitals	Shanghai CDC worked with a Fudan University team to isolate the first COVID-19 strains to aid in antiviral drug screening

SOURCE: McKinsey analysis, literature search

❶ Early Recovery Phase: informed decision making

Transparent prevention information enabling informed decisions

LOCAL GOVERNMENT

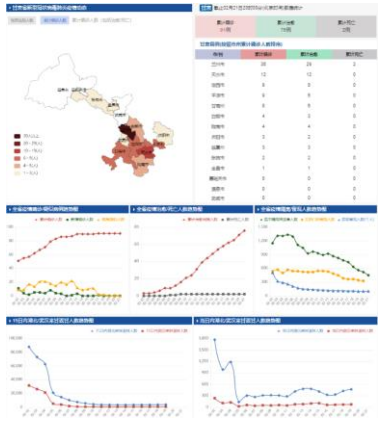
Real-time updates on disease indicators and contact tracing

Gansu Province Health Commission online epidemic control website

Comprehensive indicators: including cases/suspected cases and epidemic data, e.g. population metrics incl. close contact with COVID-19 patients, fever patients to be watched, inpatients/discharged patients etc.

Interactive information: each indicator can display specific message behind data, making it easy for residents to understand, and achieving transparency

Detailed individual case epidemiological data: timely publication of investigation results for all confirmed cases, making it easy to conduct contact tracing, resident self-checks and epidemic-related research



Precisely defining levels of infection risk for differentiated mgmt.

Zhejiang Province digital map and “reopening index”

Digital "5-color” maps: The digital province map dynamically displays the levels of infection risk[1] and serves as the basis for differentiated control measures across Zhejiang. Areas with low levels of infection risk are allowed to resume work first, while those with high levels of infection risk will only be allowed to reopen later after meeting more stringent safety requirements.

"**Reopening index":** comprised of a "control index"[2] that shows the severity of transmission and a “opening index"[3] that displays business reopening rate in cities, this index helps local governments of prefecture-level cities with precise implementation of policies

1. Including # of new cases/suspected cases, rate of severe cases, and rate of medical supplies received; 2. Based on 5 indicators, e.g., "5-color map on epidemic" and "5-color map on reopening"; 3. Based on 7 indicators including bus travel rate and power consumption index

SOURCE: Literature search

❷ Early Recovery Phase: community epidemic management

Individual citizen outreach showing care and ensuring safety

LOCAL GOVERNMENT

Reaching down to individual residential units and village households

Chengdu, Sichuan

Chengdu requires community managers to post their photo and phone number for each residential unit in every community so residents can report directly. Fever patients identified in communities are sent to designated hospitals for treating COVID-19 patients. Assigned managers even help deliver groceries to quarantined seniors

Prioritizing rapid impact while avoiding one-size-fits-all policies

Hangzhou, Zhejiang

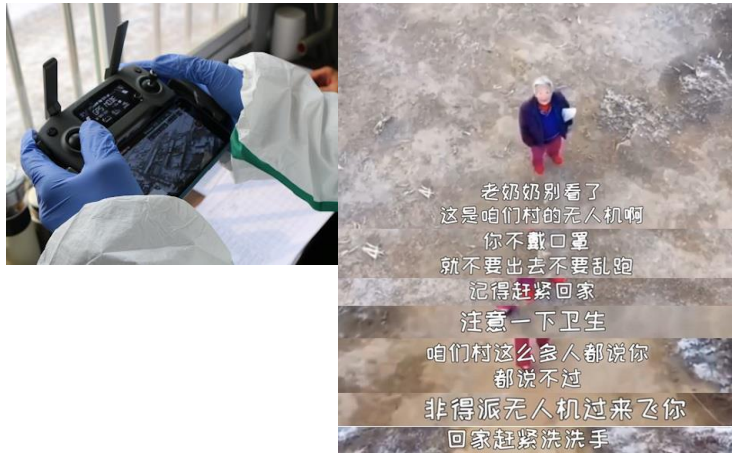
Health QR codes come in three colors, (red, yellow and green). Users apply for certification through leading mobile wallet Alipay, with a green code allowing free travel, yellow code requiring 7-day self-quarantine which converts to green after last daily check-in and the red code requiring 14-day centralized quarantine

Almost 15M health codes had been issued in Zhejiang, 95% of which were green. Direct personal communication on quarantine and mobility rules helped balance containment and need for residents to leave their homes while massively reducing pressure on frontline response

Epidemic management tailored to different on-the-ground situations

Caofangzi Village, Inner Mongolia

As villages are scattered in Inner Mongolia, drones with loudspeakers have been used to search for residents who visit others without wearing masks and disseminate knowledge on epidemic prevention in both Mandarin Chinese and Mongolian



Drones had been used in 11 banner and county grasslands in Inner Mongolia including Bayan Nur, Tongliao, and Erdos

SOURCE: Literature search

❸ Early Recovery Phase: primary care prevention

Grassroots screening resources as another line of defense

LOCAL GOVERNMENT

Grassroots health centers leading coordination to screen patients

Lishui, Zhejiang

Screening village-by-village: visited villages to monitor temperature of residents returning after Chinese New Year travel and register their information

Multi-party collaboration: worked with traffic police and public security authorities to establish checkpoints on expressways and assigned work teams to register residents

Healthcare workers visit residents with disabilities to register them and also conduct medical screening

Healthcare workers form groups of 2-3 to take temperature of returning residents at checkpoints on the expressway

Quick referrals of fever patients to support epidemic control

Wuhan, Hubei

Triage and referral: complete pre-examination and rapid triage of patients into “clean” and “suspected case” areas, with suspected cases immediately referred for transfer to centralized treatment centers

Stay focused: Suspended filing of other forms and reports not related to epidemic control to allow providers to focus on rapid submission of disease control data

Grassroots healthcare workers focus on epidemic prevention and control and make rapid triage or referral decisions on suspected cases

Combine prevention and treatment, and disseminate knowledge of prevention

Liuzhou, Guangxi

Public education: worked with family doctors to follow up with residents returning from Chinese New Year Travel, educate them on prevention measures and control potential fears about the epidemic

Healthcare workers training: organized local health centers to provide centralized training on how to prevent and control the spread of COVID-19

Grassroots healthcare workers disseminate public health knowledge on prevention and control measures to communities

A grassroots health center organizes training on how to treat patients infected with COVID-19

SOURCE: Literature search

Agenda

China Public Health Response

China Company Crisis Response Observations

China Company Response Case Study—Supply Chain Control Tower

Frontline observations — immediate responses

Across sectors, leading companies in China have implemented similar protection and response measures

Company case study in following section

	Employee & customer protection	Crisis management decision structure	Broader purpose demonstration
Observed best practice approach	**Complemented public health efforts with measures to minimize infection risk and ensure safety at all potential contact points**	**Triaged operational bottlenecks and coordinated rapid responses**	**Contributed to community prevention and early recovery efforts**
Selected COVID-19 response practices	Kept most physical sites closed during peak emergency response phase Enabled all employees to work remotely with virtual communication and collaboration tools Re-opened key offices and plants only once protection measures in place, e.g. temperature checks, mask and hand hygiene supplies stocks on hand, deep cleaning & disinfection completed etc. Implemented conservative “social distancing” practices for re-opened offices and plants • Divided critical function teams with groups alternating work in office or using satellite sites • Staggered start times and on-site meal offerings to minimize crowding • Kept large meetings virtual (e.g. SOE client chairman agreed to use VC for first time) • Encouraged non-core functions to still work from home • Restricted any outside visitors Re-opened reduced footprint of customer-facing sites to meet essential demand with rigorous hygiene measures in place • E.g. banks opened ~1/3 of branches and increased self-service options, appointment scheduling to avoid lines; Apple first re-opened only Beijing stores and then 29 of 42 locations with reduced hours on Feb 24; hotels shut down some floors to concentrate limited staff resources etc. • Extensive signage and communication on stepped-up cleaning and hygiene practices, with visible air purifiers etc. placed in stores Most MNCs, e.g. Amazon, Google, HSBC, restricted travel to mainland China and required staff with recent travel history to work from home for 14 days	Established cross-functional crisis response teams led by CEO or N-1 to stabilize operations and assess primary threats Determined employee location and health status as first priority Set up “war rooms” to rapidly collect data and escalate issues to “control towers” managing contingency planning across virus development scenarios Coordinated a single communication “chain of command” to internal and external stakeholders to provide comfort about monitoring and control of the evolving crisis Assessed overall financial resilience and took proactive measures to protect cashflow Evaluated health of critical supply chain, distribution, and logistics partners to get ahead of emerging breakdowns	Supported government responses with monetary and goods donations Contributed expertise to emergency response and economic stabilization efforts • E.g. pharma companies coordinated accelerated clinical trials and medical supply sourcing and brought together drug distributors and logistics partners to help hospitals manage remote Rx fulfilment for chronic disease patients to reduce non-virus hospital visits • BYD, SAIC-GM-Wuling etc. retrofitted lines to temporarily produce medical masks and protective clothing • Alibaba, JD.com, Meituan, Pinduoduo and other e-commerce / O2O platforms waived merchant fees and took on ‘seconded’ workers from offline partners to support SMEs and meet higher delivery demand • Banks and securities companies helped release liquidity to ease working capital crunch and equity market volatility

NOTE: All named company examples are drawn from reporting in public press sources
SOURCE: Client interviews, literature search

Frontline observations — immediate responses

Employee protection example: 3 models for temperature screening & health checks

Offsite employee self-reporting

Employees self-report location and health status remotely before resuming work or while working from home

- **Standard implementation:** Surveys / forms sent through email, WeChat groups etc. first on return from CNY travel and then to complete office re-opening applications for daily check-ins
  - E.g. Alibaba's time & attendance and workplace communication app DingTalk reportedly used for >100M daily employee health check-ins
- **Tech-enabled practice:** Alibaba linked self-reporting through DingTalk to city health QR codes in Hangzhou, Binzhou (Shandong) etc. to reduce employee and compliance burden—only users with city CDC approved travel history and self-quarantine badge eventually able to enter office

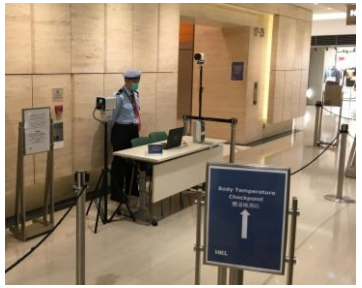
DingTalk records linked to city reporting system and employer reporting back-end

Office sites

Employees screened in building lobby and/or at reception to ensure no symptomatic employees enter the office

- **Standard implementation:** Building management employees individually take temperature using non-contact "gun" before employees are allowed to enter elevators
- **Tech-enabled practice:** Building management offices and tenants at some Class A office towers have installed infrared thermographic cameras (similar to models used at airports) with only potential fever cases taken aside for individual follow-up

Manual temperature "gun" scanning



Infrared camera scanning in building lobby

Factory / industrial sites

Employees screened at restricted entry/exit points with stronger distancing and tracking measures in place

- **Standard implementation:** Similar to office buildings, site HR or health employees take worker temperature individually at entry points using non-contact "gun"
- **Tech-enabled practice:** One large manufacturer created a "closed loop" system on factory campuses with infrared thermographic cameras installed at e.g. campus entrance, building entrances, cafeteria, dormitories etc. and access control scanning to ensure ability to follow up individually with any concerning cases

Manual temperature "gun" scanning

Thermographic access control at factory site

NOTE: All named company examples are drawn from reporting in public press sources
SOURCE: Client interviews, literature search

Frontline observations — tactical business continuity actions

All sectors in China hit by disruptions but impact and ability to respond vary

CHINA-SPECIFIC IMPACTS

	Travel & tourism	Real estate	Consumer & retail	Energy & materials	Automotive	Electronics & semi-conductors	Pharmaceuticals	Financial institutions
China impact	Highest							
Demand disruption	High	High	Moderate	Moderate	Moderate	Moderate-Low	Low	Moderate-Low
Supply & logistics disruption	High	High	High	High	Moderate	High	Moderate	Low
Top sector issues	**Travel bans massively reducing demand** for airlines and hotels Cash crunch due to **large lease and labor fixed cost base**	All **construction stopped and sales offices closed** during typical peak sales season for developers **Mall operators forced to close** for weeks as online taking traffic	Physical **retailers and restaurant operators facing 70-90% demand collapse** E-tailers and online delivery (e.g. grocery) platforms **scrambling to rapidly increase delivery labor force**	Oil & gas and refineries hit by **significant drop in fuel demand** **Largest challenge for materials, chemicals players is getting workers back to plant** and logistics resumed	**Large networks of parts suppliers who are unable to resume production** and shipments **Dealers need OEM support** as customers are not coming in to show rooms	Mfgs. largely serve global demand but **facing up to 80% labor shortages** Complex global supply chains facing delivery bottlenecks with up to **60% of materials already at risk of out-of-stock**	**Sales reps not able to visit doctors at hospitals** to promote products face-to-face Some patients (e.g. rare diseases, chronic conditions) **not able to reach hospitals for Rx refills**	**Contained impact despite many branch closures** since most products offered digitally Short-term drop in businesses that require F2F validation (e.g. corp. lending, account opening)
Tactical response examples	**Airlines rapidly cutting capacity and trying to treat customers well** to keep loyalty for a rebound (e.g. promotional fares, maintaining loyalty tier membership despite lower travel)	Developers using **online "show rooms" with video tours** to promote flats Most **malls waiving 2 months rent** to protect future occupancy	Traditional retailers **increasing direct-to-consumer partnerships** with online platforms Also **'seconding' workers to delivery platforms** to reduce labor cost and support economy	Some continuous production clients having to **deploy back office workers on lines as emergency stop gap** (e.g. finance mgrs.)	Many **OEMs launching online live car shows** on major video sharing platforms **Trying to rapidly scale online sales channel** and link with offline dealer delivery	Large manufacturers **using "war rooms" to allocate limited capacity** to priority clients and SKUs Preparing special quarantine dorms etc. on-site to resume output at all sites as soon as approved	**Hosting digital medical events & education sessions** attended by 100s of doctors **Helping doctors build remote consultation resources** (e.g. "internet hospitals", patient chat groups)	**Actively monitoring asset quality issues** given high overall economic stress, particularly for SME customers **Boosting digital marketing & sales campaigns** to replace branch-based activities

SOURCE: McKinsey analysis, literature search

Frontline observations — strategic imperatives

Crisis pushing leaders operating in China to focus on 4 major themes

	Travel & tourism	Real estate	Consumer & retail	Energy & materials	Automotive	Electronics & semi-conductors	Pharmaceuticals	Financial institutions
Cash management	**Moderating capacity e.g. through releasing leases or returning aircraft** for airlines, offering special unpaid leave to staff etc.	Extending loans to preserve liquidity while building **stricter cash flow mgmt. systems** to ensure better future conversion, liquidity	**Regulating all discretionary spending** and reviewing full year inventory, replenishment, and production plans	**Rationalizing production schedules** to reduce unnecessary use of working capital	**Stress testing cash flow projections** to understand impact if sales weakness extends beyond Q1	**Extending resilience planning due to longer customer payment cycles** and delayed components deliveries slowing shipments	Slowing hospital visits and decreased physician education programs **creating pressure to protect new prescriptions and refills**	Proactively **stress testing balance sheet and liquidity** while preparing portfolio of responses for downside cases
Digital	**Selectively investing in digital marketing** incl. corporate CSR videos, social media accounts etc.	**Developing complete online showroom and sales platforms** to replace conventional offline channel	**Accelerating omnichannel strategy** by shifting up online channel mix, strengthening O2O platform partnerships	**Developing digital channels more aggressively,** e.g. protein players working to connect directly with online grocery platforms	**Digitizing sales & marketing** alongside continued investments in supply chain and manufacturing analytics	**Investing in supply chain digitalization and automaton** to improve visibility and agility	Investing in **new digital tools for physician and patient engagement** (e.g. virtual rep visits, medical education online portal)	Feeling new **urgency to expand digital distribution beyond payments** and improve online customer engagement
Diversi-fication	**Exploring new revenue levers** e.g. hotel F&B offering delivery, annual passes etc.	**Speeding up new business incubation in less cyclical areas**	**Converting existing retail resources** to support online channel, e.g. using stores as delivery warehouses, etc.	**Examining export feasibility**, e.g. refineries anticipating potential lifting of China's gasoline and diesel export ban	**Developing contingency plans to re-allocate purchasing** across suppliers should Tier 2 / 3s serving large suppliers close	**Diversifying supply chains** to build resiliency by having more qualified partners	Reviewing mfg. and dist. strategy with aim of **decentralizing production and expanding medical-ready (e.g. cold chain) logistics partners**	**Reconsidering concentrated business line and geographic exposure** in banking and other segments
Risk management	Cash permitting, **taking advantage of lower volumes to speed up normal safety investments**, e.g. moving up maintenance and pilot simulator training for airlines	**Reconsidering planned projects** given evolving epidemic situation	**Building more agility into supply chains** to prepare for pent-up demand spikes and better serve online channel	**Analyzing downstream customers** to plan for ongoing capacity utilization and avoid creating any more inventory	**Assessing dealer health** and preparing to offer additional assistance and evaluating suppliers to potentially offer financing to distressed partners	**Re-allocating production** to non-China facilities to ensure shipments and protect customer relationships	**Revaluating China market risk profile** shifting from focus on IP protection and compliance to broader questions about public health system	**Using crisis period to refresh Early Warning and Workout Management systems** given potential risky sector exposures

SOURCE: McKinsey analysis, literature search

Agenda

China Public Health Response

China Company Crisis Response Observations

China Company Response Case Study—Supply Chain Control Tower

Supply chain control tower case study context

Client context

- Large manufacturer
- Plants operating across China
- Overnight **total capacity shutdown for key business unit after COVID-19 outbreak**
- **Urgent need to allocate limited capacity at other sites** and understand bottlenecks caused by limited parts availability from China suppliers
- **Customers bombarding organization with requests for situation updates** at all levels

Solution approach

- **Establish "control tower" to guide capacity planning** to priority clients and SKUs given limited capacity and parts availability
- **Control communication channels to shape one consistent message** going out to customers to stop constant escalations
- At the same time, **coordinate re-opening of China sites as quickly as possible** by ramping-up protection measures, PPE stocking, quarantine arrangements planning, etc.

Tools deployed

1. **Crisis management decision structure and customer communication plan** stood up through cadence of tiered weekly meetings to support single line of decision making and escalations
2. **Sales & operations planning dashboard** capturing "single source of truth" on capacity and parts availability data to support client and SKU allocation decisions

1 Crisis management approach: Scope and team setup

SAMPLE OUTPUT

Crisis Management Steering Committee — **BU head**

Responsible for overall crisis response

Supply Chain Control Tower — **Supply chain lead**

- Integrate cross-functional planning, including
  - Daily volume allocation and debottlenecking
  - Daily S&OP management

Manufacturing capacity

Output: Global manufacturing capacity

Global manufacturing

MFG lead

- Capacity planning, visibility on flows and coordination, including short-term outsourcing solutions
- Footprint evolution
- Planning & staffing control tower - Ramp up/down in line with demand/capacity
- Explore alternative supply chain

Output: Manpower availability

HR & Government relations - China overall

Corporate HR

- Health & safety control tower - Employee screening and segregation planning
- Refill labor shortage
- Face masks, temperature guns, supplies

Output: Factory resumptions

HR & Government relations - By site sub-teams

Plant HR

- Government applications to re-start factories
- Community / media out-reach on safety

Customer demand

Output: Prioritized products w/ latest vol.

Demand management

Demand planner

- Demand prioritization and refreshed volume forecasts

Customer mgmt. and product prioritization

Key account mgmt.

Account managers

- Communications plan
- Lock down of recovery plan
- Sharing of added cost with customer (e.g. air freight)

Parts availability

Output: Global parts availability by site

Parts availability

Material planner

- Ensuring continuity of supply (now & immediate post-crisis)
- Support inbound/outbound logistics
- Visibility on major suppliers' capacity, inventory & production output
- Conduct major suppliers' financial status assessment and potential intervention (e.g. fund critical suppliers short of cash now in return for guaranteed priority of supply)
- Alternative supplier sourcing and qualification acceleration

R&D resources

Output: R&D headcount by function & equipment availability

R&D resources

RD head

- Implement prioritization and process initiatives to free-up capacity to deliver current projects, with clear understanding of resourcing requirements
- Continue to design and implement productivity initiatives
- Setup mechanism to rationalize resources (including budget) against the right R&D topics and priorities

Supply Chain Control Tower — Site/KAM/Specific War Rooms

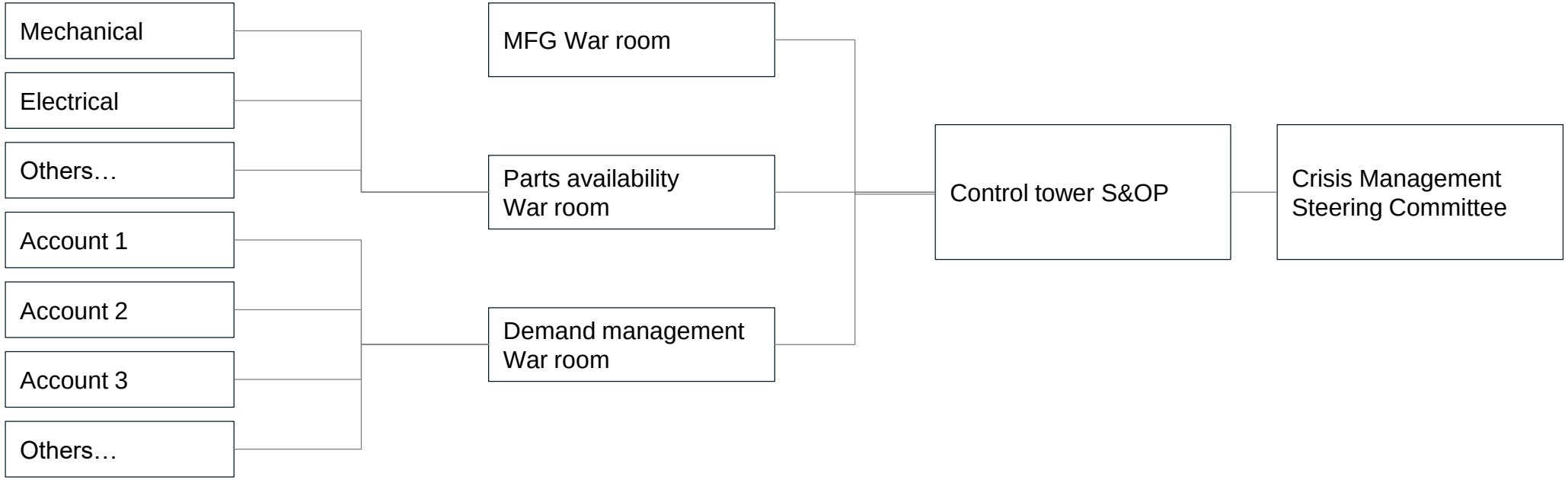
1 Control Tower meeting cascading

SAMPLE OUTPUT

BU

BU 1

Meeting cascading



Key questions to be answered

Sub-team meeting

Forecast to be used as input for Control tower war rooms

- Consolidated demand for all customers
- Consolidate MFG capacity
- Consolidated parts supply

Control tower War room

Demand and supply issues and resolution

List of priorities for each team under control tower

Control tower S&OP

Align on decision for S&OP

- Order fulfillment priorities
- Parts and capacity allocation

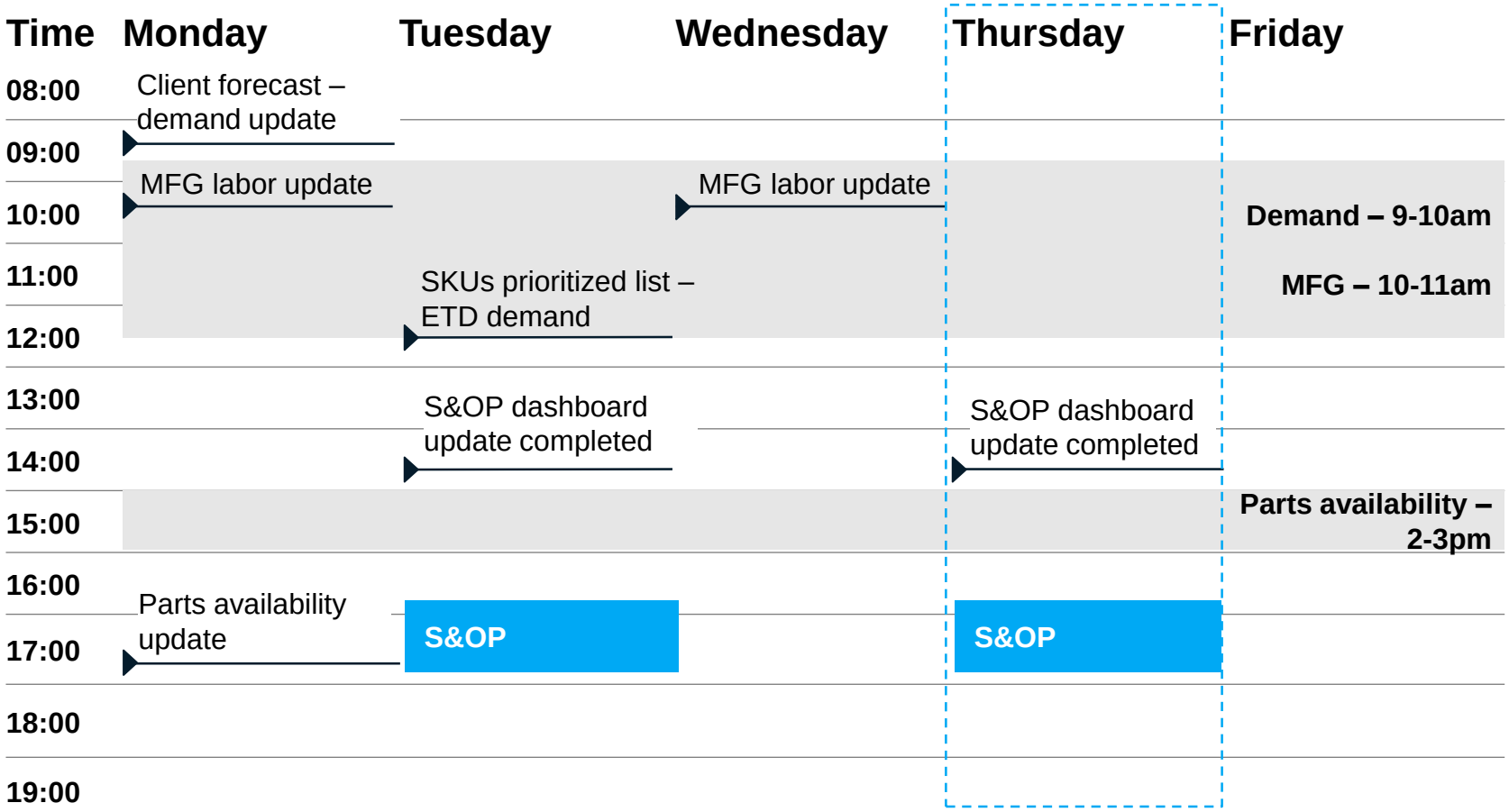
Escalation for unresolved S&OP

BU management and escalation meeting

Align and approve unresolved escalations from Control tower

1 "Perfect week" — targeted S&OP cadence

SAMPLE OUTPUT



Key actions

Leadership involvement needed on:

- **Attending one S&OP** per week for better **drive and syndication** with crisis management teams
- **Occasional attendance war room** to help drive outsourcing decisions based on different scenarios

Customer communication on a regular basis as an **output of S&OP** meeting to close the feedback loop on **demand shaping**

1 Meeting cadence: Attendance and agendas

SAMPLE OUTPUT

XX Lead

	Attendance	Agenda
Demand War rooms	**Demand planner** Account managers	Review client **demand forecast** for next 12-16 weeks Agree on **demand prioritization** and escalation **Reshape** demand when needed **Communicate with clients on key decisions** (e.g., supply demand, cost sharing, alternative supply chain)
MFG War rooms	**MFG plant head** Shipping and delivery managers Production planners	Review **actual vs planned** capacity from previous session; identify root cause for the gap and define mitigation actions to close the gap Review **labor ramp-up** plan linked with prevention and resources control **Adjust** the available capacity by product Drive decisions and detailed planning **alternative supply chain options**
Parts War rooms	**Material planner**	Review **demand priorities** based on customer input and supply risks Review **inbound supply logistics** availability Update **shortages and supplier priority** to trigger risk mitigation plan across different sources-customer, competitor's supplier, broker, distributor etc Review **bottleneck and risk matrix** of new suppliers/substitution parts qualification by priority
Control tower S&OP	**BU head** War room leads	Review demand, capacity, and parts availability **changes** from previous S&OP Resolve **top supply** and **demand mismatches** at customer and SKU levels Agree on **production priority** and subsequent actions (e.g., securing parts and customer communication)

1 Customer Communication: Focus and deliverables

SAMPLE OUTPUT

Topic	Areas of focus	Deliverables (for discussion)
Supply Demand /S&OP	Is there regular communication on supply / demand commitment? How often ? To whom ? Is there a fixed length of supply / demand commitment across all accounts? (e.g. 4 or 8 weeks)	• Build a comm. template by account to communicate capacity ramp up and volume commitment — note: include backup to articulate why each account is a top priority • Determine communication channel/cadence with specific customer rep • Publish S&OP outcome as single source of truth for all comm.
Alternative Supply chain	Have we discussed short-term tactical and short-term strategic options for alternative supply chain? Have we identified areas where we need their help / commitment? (e.g. Financial, supplier or part accelerated qualification)	• Formulate temporary tactical solution and define help needed from the customers (e.g. supplier / component qual, additional investments on tooling) • Build long term plan on how to diversity supply chain to mitigate current risks (i.e. not concentrated in China – not immediate priority
Cost sharing	Is the customer currently sharing cost in light of efforts we put in to resume supply? Is there a process to expedite freight for late shipments and share additional cost? (including late parts)	• Build transparency on cost increase due to Coronavirus that includes: — Additional cost incurred to resume production (e.g. idle direct labor) — Cost incurred due to escalation to expedite specific customer need (e.g. outsourcing / new components source) • Conduct negotiation preparation session on principles with supporting details
Long term partnership	Is there conversation on committed volume post-crisis?	• Develop a model that determines: — Current projected loss in 2020 (full-year) — Project current loss in 2020 (full-year) with accelerated ramp up — Determine action plans to close the remaining gap

2 S&OP Dashboard: Key indicators

- Above 70%
- 50 - 70%
- Below 50%

SAMPLE OUTPUT

Overview per client and areas		Supply (capacity) allocation %	% of supply allocated to priority SKU	% of supply gap to demand (priority SKU only)	% of supply gap to demand (all SKU)
		Dummy numbers			
Client 1	Area 1	x	x	x	x
Client 2	Area 1	x	x	x	x
	Area 2	x	x	x	x
	Area 3	x	x	x	x
Client 3	Area 1	x	x	x	x
	Area 2	x	x	x	x
	Area 3	x	x	x	x
TOTAL		x	x	-x	x

Key indicators

Supply output allocation in % to visualize on which client the capacity effort is being directed to

% of supply allocated to priority SKU to identify what capacity is being directed to wrong SKU and re-allocate the load to client's priority SKU

% of supply gap to demand (priority SKU only) to understand where is the supply gap on priority SKUs and deep dive on each of them to escalate with client and make quick mitigation decisions

% of supply gap to demand to get an overview of the supply shortage on all SKU and communicate to client accordingly ; also allows to see on which week the recovery point objective for supply output would occur

2 S&OP Dashboard: War room outputs review & deep dive by SKU

SAMPLE OUTPUT

Deep dive for key indicators dashboard over 6 week-period

Deep dive for prioritized SKUs per demand, parts availability and supply gap