COVID-19
BCG Perspectives

Facts, scenarios, and actions for leaders
Publication #2 with a focus on:
• Preparing for the restart

Version: 20 April 2020
COVID-19 is a global societal crisis

We at BCG believe that the COVID-19 outbreak is first and foremost a societal crisis, threatening lives and the wellbeing of our global community. Society now, more than ever, needs to collaborate to protect people's lives and health, manage mid-term implications and search for lasting solutions.

Leaders need to drive an integrated response to navigate the crisis

It is the duty of health, political, societal, and business leaders to navigate through this crisis. A complex interplay of epidemic progression, medical response, government action, sector impact, and company action is playing out jointly. This document intends to help leaders find answers and shape opinions to navigate the crisis in their own environments. It encourages thinking across the multiple time horizons over which we see the crisis manifesting itself.
Executive Summary | COVID-19 BCG Perspectives

The COVID-19 disease progression continues to be a global challenge to societies, but interventions are starting to show positive effects

- Government measures to mitigate the spread are largely effective in slowing cases (doubling every ~10 days a week ago, to every ~15 days now)
- Testing is increasing, giving more transparency and control; in several countries, this is complemented by digitally enabled contact tracing
- While some countries are extending lockdowns and social separation, a few countries have started to progressively lift restrictions

Impact on sectors and business depends on intensity and shape of the health and economic recovery, especially in an extended fight phase

- Economic indicators and forecasts signal a severe downturn; global equity markets continue to be challenged and unemployment rates are rising
- The last weeks showed a bounce in equity markets and in Total Shareholder Returns (TSR), but credit risks remain in many sectors
- It remains critical to understand the specific context and environment (e.g. geography, sector) to distill implications for future pathways of companies
- There will likely be an extended phase of ‘fighting’ the virus with many investments to bring forward therapies/vaccines in the next ~12-18 months
- Young consumers are largely worried about financial implications, but share positive sentiment about recovery across many geographies

Navigating the COVID-19 crisis, particularly an extended 'fight' the virus phase requires integrated action by governments and business leaders

- Governments need to ensure that reopening activities are guided by national health, and economic and social priorities, allowing for local adaptation
- Reopening requires careful preparation, for governments as well as business; e.g. Managing for a safe workplace also requires managing risks outside work
- Business leaders and governments can use this crisis as an opportunity to strengthen their cooperation for a united fight against the virus

We believe during this crisis, leaders need to be able to think along two dimensions:

1. Taking an integrated perspective on health/medical progression, governmental responses, societal reactions, and economic implications to understand business/sector impacts and
2. Thinking multi-timescale (the now, near, and long-term future—in a flatten-fight-future logic).
COVID-19 will be a journey with three distinct phases requiring an integrated perspective

Typically, the initial phase after a pandemic outbreak – goal is to urgently limit number of confirmed cases, especially critical care

Social distancing (lockdown) and partial business closures outside a few, lead to economic recession with large employment impact

Finding paths to collectively fight the virus, restart the economy, and support society in balancing lives and livelihood

Moderate economic activity with recovering GDP, some business reopenings, and social distancing on sustainable level

Disease controlled through vaccine/cure/herd immunity, and treatment within sustainable medical capacities possible

Reactivated economy with strong business rebound and job growth, social restrictions limited or completely suspended

1. Disease progression, health care system capacity, and response
2. Government policies and economic stimulus
3. Economic scenarios
4. Business engagement and response
5. Public engagement and response

All of the above five factors result in specific economic and social outcomes in each phase

Source: BCG
COVID-19 Context and Development

- Disease progression, health care system capacity, and response
- Government policies and action

Economic and Business Impact and Scenarios

- Economic response
- Scenarios and key drivers
- Business impact

Guide for Leaders

- Determining government action
- Considering ecosystem interdependencies
- Navigating businesses through the crisis
COVID-19 Context and Development
Disease progression, health care system capacity, and response
Government policies and action

Economic and Business Impact and Scenarios
Economic response
Scenarios and key drivers
Business impact

Guide for Leaders
Determining government action
Considering ecosystem interdependencies
Navigating businesses through the crisis
COVID-19 pandemic spread: Cases doubling every ~15 days\(^1\) globally

As of 16 April 2020

Days of doubling cases:
- 0-3 days
- 3-6 days
- 6-14 days
- 14-30 days
- >30 days

183
Countries with cases\(^2\)

2.2M \([\Delta 5\%]\)\(^3\)
Confirmed cases globally

144k \([\Delta 6\%]\)\(^3\)
Fatality cases globally

2nd Apr’20 16th Apr’20
# of days for doubling\(^1\) the cases globally
- 7 days
- 10 days
- 15 days

# of fatality cases
- 53k
- 95k
- 144k

# of countries with local transmission
- 150
- 163
- 164

Note: Continued cases and fatalities are subject to different testing, propensity, reporting standards and hence imperfect measures
1. No. of doubling days based on 7 day CAGR
2. Basis Johns Hopkins CSSE
3. Daily growth rate basis 7 day CAGR
Sources: Johns Hopkins CSSE, Our world in data, WHO situation reports, BCG analysis
The week that was...

From 11 to 17 April 2020

**Report: Covid-19 patients recovering quickly after getting experimental drug remdesivir**

The Korea Times

74→91→95→111→116: S. Korea unnerved by increasing reinfection cases

Macron extends lockdown in France until May 11th as coronavirus death toll nears 15,000

13 April 2020

INDEPENDENT

Austria set to ease coronavirus lockdown with reopening of shops

Around 0.33 per cent of population were infected early April, according to research

Asian countries fear coronavirus resurgence as cases in China hit 6-week high

The Latest: 2 large drug companies work together on vaccine

The Boston Globe

THE HINDU

Lockdown extended till May 3, says PM Modi

WISTULA WEBBAR

Intensive containment measures will be in place at airports till April 30
Doubling days is an early indicator of the phase a country is in; flattening of the curve now evident in several countries

As of 15 April 2020

1. Includes Middle East
2. Countries selected from the chart on the left
3. # of days after exceeding 100 confirmed cases
4. Excludes Brazil

Source: Johns Hopkins CSSE, Our World in data, WHO situation reports
# Testing ecosystem is proliferating—across both high-throughput in-lab and rapid near-patient tests

## As of 16 April 2020

<table>
<thead>
<tr>
<th>Test purpose</th>
<th>Available for last 3+ weeks</th>
<th>Becoming available now (over last 1-2 weeks)</th>
<th>In development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence of viral genome</td>
<td>Lab-based</td>
<td>BD, BioGX, Siemens Healthineers, Luminex</td>
<td>Biosensor, 1 min result (early stage of development)</td>
</tr>
<tr>
<td>Near-patient/Point-of-Care</td>
<td></td>
<td>Cepheid, Abbott, mesabiotech</td>
<td></td>
</tr>
<tr>
<td>Immune response to virus</td>
<td>Lab-based</td>
<td>BD, BioGX, Siemens Healthineers, Luminex</td>
<td></td>
</tr>
<tr>
<td>Near-patient/Point-of-Care</td>
<td></td>
<td>Cepheid, Abbott, mesabiotech</td>
<td></td>
</tr>
<tr>
<td>Presence of viral particle</td>
<td></td>
<td>BD, BioGX, Siemens Healthineers, Luminex</td>
<td></td>
</tr>
</tbody>
</table>

**Examples**
- **Lab-based** (BD, BioGX, Siemens Healthineers, Luminex)
- **Near-patient/Point-of-Care** (Cepheid, Abbott, mesabiotech)
- **Enzyme** (BD, BioGX, Siemens Healthineers, Luminex)
- **Immune response to virus** (BD, BioGX, Siemens Healthineers, Luminex)
- **Presence of viral particle** (BD, BioGX, Siemens Healthineers, Luminex)

1. More than 90 serology test makers have notified FDA that they have serology tests available for use as of April 16, 2020
2. Source: CDC website, FDA website, company websites

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**Not exhaustive**

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DISEASE PROGRESSION, HEALTH CARE SYSTEM CAPACITY, AND RESPONSE
Continued ramp-up of testing across countries

As of 15 April 2020

1. Includes Middle East
2. Data corresponds to 37 of 56 countries represented in the chart on the left
3. As per World Bank classification

Source: World Bank, Worldometers.info, Our World in Data, Johns Hopkins
Several countries drive digitally enabled contact tracing to increase speed to detect outbreak and protect people

As of 14 April 2020

**Example: Singapore's TraceTogether**
Developed by Government | Voluntary | 1M+ downloads

<table>
<thead>
<tr>
<th>Country</th>
<th>App</th>
<th>Downloads</th>
<th>% of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>Aarogyasetu</td>
<td>50M¹</td>
<td>4%</td>
</tr>
<tr>
<td>Israel</td>
<td>Hamagen</td>
<td>1.5M¹</td>
<td>17%</td>
</tr>
<tr>
<td>Singapore</td>
<td>TraceTogether</td>
<td>1M²</td>
<td>18%</td>
</tr>
<tr>
<td>South Korea</td>
<td>Corona</td>
<td>100M</td>
<td>2%</td>
</tr>
<tr>
<td>Iceland</td>
<td>RakningC-19</td>
<td>150k¹</td>
<td>40%</td>
</tr>
<tr>
<td>Austria</td>
<td>Stopp Corona</td>
<td>100k³</td>
<td>1%</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>eRouška</td>
<td>50k³</td>
<td>0.5%</td>
</tr>
</tbody>
</table>


Source: App Annie database; Google Play store; Press research, BCG

Germany, Australia, and several others are in advanced stages of launching a contact tracing application
Select developing economies are leading the way in driving containment.

As of 16 April 2020

**Vietnam**

- **First patient:** 23 January
- **Total cases:** 268
- **Tests:** 120k+
- **Recovered Cases:** 177 (66%)
- **Deaths:** 0 (0.0%)

- Early border control (e.g. China as early as 3 January, Korea, Europe)
- National risk assessment exercise in early January; guidelines issued when Wuhan reported 27 infections
- Strict govt. facilities/home quarantines leading to effective tracing and monitoring
- Early precautions: Schools closed since 17 January
- Entered nationwide “Strict Social Distancing Rule” on April 1

**Kerala (India)**

- **First patient:** 30 January (first to report infections in India)
- **Total cases:** 394
- **Tests:** 10k+
- **Recovered Cases:** 245 (62%)
- **Deaths:** 3 (0.8%)

- Mandatory quarantines weeks before any other state
- Civil society leaders and call centers helped clear doubts and remove stigma
- Monitoring teams in every village; 100,000+ under observation
- Schools and colleges closed since 10 March
- Daily briefings by top political executives ensured information flow and reduced panic movement

Source: John Hopkins CSSE; Corona Control in Kerala –Snehil Kumar Singh; Press research; BCG
Race for a cure: Significant progress being made across preventative measures and treatment (antibodies, antivirals)

As of 17 April 2020

<table>
<thead>
<tr>
<th>Preventive measures</th>
<th>Treatment of infection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vaccines</strong></td>
<td><strong>Antibodies</strong></td>
</tr>
<tr>
<td>Prophylactic measure to prevent infection by training the immune system to rapidly eliminate</td>
<td>Passive immunity by administering neutralizing antibodies against circulating viral particles in the blood</td>
</tr>
<tr>
<td><strong>Antivirals</strong></td>
<td></td>
</tr>
<tr>
<td>Act by preventing viral entry to cells or inhibit viral replication within the cell; potential to leverage existing anti-viral Tx</td>
<td></td>
</tr>
</tbody>
</table>

### Overview

<table>
<thead>
<tr>
<th><strong>Preventive measures</strong></th>
<th><strong>Treatment of infection</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overview</strong></td>
<td></td>
</tr>
<tr>
<td>Ongoing research</td>
<td></td>
</tr>
<tr>
<td>~80 under development globally, of which three are in preclinical stage</td>
<td>&gt;30 under development globally</td>
</tr>
<tr>
<td>Small-scale early access for a small subset of patients possible in Q3 2020 assuming positive results</td>
<td>&gt;20 under development globally</td>
</tr>
</tbody>
</table>

- Early results likely in Q2 2020; use will be limited to small scale/at risk groups
- Early efficacy signals of Chloroquine based compounds expected in Q2 2020

### Companies

Not Exhaustive

- moderna
- inovio
- Biontech
- REGENERON
- VIR
- CureVac
- gsk
- Contino Biotechnologies Inc
- Clover Biopharmaceuticals
- Sanofi
- Pfizer
- Roche
- Incyte
- Gilead
- Apeirion Biologics
- Pfizer
- Emergent

While significant progress is being made, treatments and vaccines may be many months away

Source: WHO, Company websites, Press releases, Fierce biotech, Genetic Engineering and Biotech press research
Countries are acting to ensure potential resurgence is contained

Previous pandemics like MERS and the Spanish Flu had disease resurgence two to three times.

UK Deaths per 1,000 persons

- 1st wave: 6/29, 1918
- 2nd wave: 9/21, 1919
- 3rd wave: 11/16, 1919; 1/11, 2020; 3/8, 2020

Number of monthly cases worldwide

- 2014 outbreak in Middle East
- 2015 outbreak in Korea

Daily infections by country

- Wave 1
- Wave 2
- Wave 3

As of 12 April 2020

<table>
<thead>
<tr>
<th>Country</th>
<th>Measures to curtail resurgence</th>
</tr>
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<tbody>
<tr>
<td>Louisiana (US)</td>
<td>- Ban on public gatherings of 50+ people</td>
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<tr>
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<td>- Closure of schools, bars, salons, cinemas, gyms, casinos</td>
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<td></td>
<td>- Statewide stay-at-home order until at least 30 April</td>
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<tr>
<td>Hong Kong</td>
<td>- Continuing of shutdown/containment measures</td>
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<tr>
<td></td>
<td>- Closure of bars, salons, cinemas, public places till 23 April</td>
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<tr>
<td>Singapore</td>
<td>- Lockdown/shut downs for one month with hefty fines for violators</td>
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<td>- Shifting of healthy migrant workers to &quot;floating hotels&quot;</td>
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<td></td>
<td>- Masks mandatory for anyone leaving home</td>
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</tbody>
</table>

Source: John Hopkins CSSE, Press Search, BCG Henderson Institute Analysis
Government measures continue to be enforced
US gets stricter in hard-hit areas; China, Spain, Denmark, Iran selectively opening up

As of 16 April 2020

<table>
<thead>
<tr>
<th>Country</th>
<th>School closure</th>
<th>Restricted assembly</th>
<th>Non-essential business closure</th>
<th>International travel restrictions</th>
<th>Domestic travel restrictions</th>
<th>Non-essential local mvmt. restrictions</th>
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<tr>
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<td>✓</td>
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Extensions / New interventions post 31 Mar
- China lifted the lockdown restrictions on Hubei allowing people movement subject to green code classification
- Spain begins lifting restrictions on 13 April with construction and manufacturing workers resuming work
- Denmark announces concrete plan to lift restrictions; primary schools to reopen from 15 April
- Iran allowed government offices and business outside the capital Tehran to open from 11 April

1. Includes nationwide actions and actions taken by major local or regional governments. 2. Some German + US rail services are being reduced but not through government mandate.

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COVID-19 Context and Development
- Disease progression, health care system capacity, and response
- Government policies and action

Economic and Business Impact and Scenarios
- Economic response
- Scenarios and key drivers
- Business impact

Guide for Leaders
- Determining government action
- Considering ecosystem interdependencies
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Global equity markets trending upward but still at a lower mean; unemployment rates rise

As of 15 April 2020

Global equity markets varying around a lower mean

Markets looked past virus' spread in China

Inflection with virus' spread to Europe, USA and beyond

Cumulative returns (%)

Feb 21

-20
-30
-40
-50
0
5
10
15
20
21 Jan 1 Feb 1 Mar 1 Apr 15 Apr

Steeper sell-off than in 1929

More critical sell-off than 30% in 2008

Higher volatility than '08 credit crisis peak

Initial US unemployment insurance claims (millions)

Total of 22M initial unemployment insurance claims for last one month
(3.3M, 6.8M, 6.6M and 5.2M for the last 4 weeks)


2. Peak VIX recorded 16/03/2020

ECONOMIC RESPONSE
Economic forecasts point toward severe downturn

As of 14 April 2020

**US**
Forecast GDP growth vs. baseline before COVID-19

- Baseline: 2.0%
- Visa (06.4.): -1.3%
- ABN Amro (10.4.): 1.4%
- Danske Bank (10.4.): -2.0%
- Credit Suisse (10.4.): -2.6%
- Deutsche Bank (10.3.): -4.2%
- Barclays (10.4.): -4.5%
- JP Morgan Chase (10.4.): -5.3%
- Morgan Stanley (03.4.): -5.5%
- BNP Paribas (10.4.): -5.7%
- IMF (14.4.): -5.9%
- BAML (10.4.): -6.0%
- Rabo Bank (09.4.): -6.4%
- HSBC Holdings (03.4.): -6.5%
- ING Group (10.4.): -7.0%
- Nomura Securities (06.4.): -9.0%

**Europe**
Forecast GDP growth vs. baseline before COVID-19

- Baseline: 1.3%
- Fitch Solutions (14.4.): -1.3%
- JP Morgan Chase (14.4.): -3.4%
- Standard Chartered (10.4.): -4.0%
- UBS (14.4.): -4.5%
- Morgan Stanley (14.4.): -5.0%
- Barclays (14.4.): -5.5%
- Natixis (14.4.): -5.9%
- HSBC Holdings (14.4.): -6.4%
- IMF (14.4.): -7.5%
- BNP Paribas (14.4.): -8.3%
- Citi Group (14.4.): -8.4%

**China**
Forecast GDP growth vs. baseline before COVID-19

- Baseline: 5.8%
- Danske Bank (03.4.): 5.2%
- Nomura Securities (03.4.): 5.0%
- Credit Suisse (09.4.): 3.3%
- ABN Amro (07.4.): 4.0%
- ING Group (07.4.): 4.0%
- BAML (10.4.): -6.0%
- Visa (06.4.): -1.1%
- Deutshe Bank (03.4.): -5.3%
- Morgan Stanley (14.4.): -5.0%
- Barclays (14.4.): -5.5%
- Natixis (14.3.): -1.3%
- DZ Bank (27.3.): 1.3%
- UBS (14.3.): 1.3%
- Goldman Sachs (14.3.): 1.7%
- ING Group (14.4.): 5.5%
- BAML (14.4.): 6.1%
- HSBC Holding (14.4.): 4.7%
- BNP Paribas (10.4): -8.3%
- Credit Suisse (14.4.): 5.6%
- IMF (14.4.): 5.6%
- ABN Amro (07.4.): 3.0%
- HSBC (03.4.): 3.0%
- Morgan Stanley (03.4.): 2.0%
- ING Group (14.4.): 3.2%
- JP Morgan Chase (09.4.): 1.1%
- Nomura Securities (03.4.): 1.0%

(DD.MM) format used

Note: As of reports dated 27 March 2020 to 14 April 2020

1. Estimated since GDP growth mentioned for second half of 2020 as average
Source: Bloomberg, IMF, BCG analysis
Scenarios and potential outcomes driven by five key questions
Shape may vary in depth and duration depending on country and sector composition of the economy

As of 14 April 2020

What will be the LENGTH of "Flatten"?
What are the preconditions to transition? When will we achieve them?

To what DEPTH does the economy drop in "Flatten"?

What will be the LENGTH of "Fight"?
What are the preconditions to transition? When will we achieve them?

What LEVEL of recovery does the economy achieve in "Fight"?

Where does the economy return to relative to the pre-COVID era in "Future"?

Source: BCG
Flatten: Key scenario inputs and implications

As of 14 April 2020

**Scenario overview**

### Scenario parameters

<table>
<thead>
<tr>
<th>LENGTH of “Flatten”</th>
<th>DEPTH of economic drop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key scenario drivers</td>
<td>Potential outcomes</td>
</tr>
<tr>
<td>Disease progression²</td>
<td>Mid May (~7 wks)</td>
</tr>
<tr>
<td>Government response³</td>
<td>Mid June (~10 wks)</td>
</tr>
<tr>
<td>Sector composition of economy</td>
<td>Mid July (~13 wks)</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
</tr>
</tbody>
</table>

### Example: Lockdown duration scenarios

1. Lockdown duration based on empirically observed 4-8 weeks from peak infection. Does not reflect impact from peak infection per capita rate, local health care capacity, local testing/monitoring capability or local government policies. Duration varies by state, but duration reflects March W3 start.

2. Disease evolution, infection rate, fatality rate, mutation, etc. 3. Social/economic policies, immigration, fiscal and monetary stimuli, etc.

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Flatten: Scenario selection and impact driven by localized geography and sector factors

As of 14 April 2020

**DEPTH of economic loss**

*(Weekly economic loss)*

- **15-20% loss**
  - W2 May (7 weeks): 2-3%
  - W4 June (13 weeks): 3-5%
- **20-25% loss**
  - W2 May (7 weeks): 2-4%
  - W1 June (10 weeks): 3-5%
  - W4 June (13 weeks): 5-7%
- **25-30% loss**
  - W2 May (7 weeks): 3-4%
  - W1 June (10 weeks): 4-6%
  - W4 June (13 weeks): 6-8%

**LENGTH of suppression**

*(weeks)*

- **Example: Lockdown duration scenarios**
  1. Lower end of ranges rounded down and upper end of ranges rounded up to reflect uncertainty.
  2. Lockdown duration based on empirically observed 4-8 weeks from peak infection. Does not reflect impact from peak infection rate, local health care capacity, local testing/monitoring capability or local government policies.
Total shareholder return (TSR) rebound over last 15-20 days across markets and sectors

Two time periods from 21 February 2020 to 15 April 2020

Decline reflects economic scenario and consumer sentiment

<table>
<thead>
<tr>
<th>TSR performance¹</th>
<th>Americas</th>
<th>Europe</th>
<th>Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Healthier sectors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food/staples Retail</td>
<td>-10%</td>
<td>6%</td>
<td>-13%</td>
</tr>
<tr>
<td>Pharma</td>
<td>-19%</td>
<td>21%</td>
<td>-20%</td>
</tr>
<tr>
<td>Household Products</td>
<td>-19%</td>
<td>16%</td>
<td>-16%</td>
</tr>
<tr>
<td>Food &amp; Beverage</td>
<td>-26%</td>
<td>20%</td>
<td>-24%</td>
</tr>
<tr>
<td>Telecom</td>
<td>-17%</td>
<td>8%</td>
<td>-20%</td>
</tr>
<tr>
<td><strong>Pressured sectors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semiconductors</td>
<td>-30%</td>
<td>29%</td>
<td>-43%</td>
</tr>
<tr>
<td>Utilities</td>
<td>-33%</td>
<td>23%</td>
<td>-30%</td>
</tr>
<tr>
<td>Health Equipment</td>
<td>-33%</td>
<td>26%</td>
<td>-31%</td>
</tr>
<tr>
<td>Software</td>
<td>-30%</td>
<td>22%</td>
<td>-32%</td>
</tr>
<tr>
<td>Materials</td>
<td>-34%</td>
<td>23%</td>
<td>-31%</td>
</tr>
<tr>
<td>Tech Hardware</td>
<td>-29%</td>
<td>14%</td>
<td>-25%</td>
</tr>
<tr>
<td>Prof. Services</td>
<td>-30%</td>
<td>12%</td>
<td>-29%</td>
</tr>
<tr>
<td>Transport</td>
<td>-37%</td>
<td>22%</td>
<td>-38%</td>
</tr>
<tr>
<td>Capital Goods</td>
<td>-38%</td>
<td>21%</td>
<td>-35%</td>
</tr>
<tr>
<td>Retailing</td>
<td>-42%</td>
<td>25%</td>
<td>-36%</td>
</tr>
<tr>
<td><strong>Vulnerable sectors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financials</td>
<td>-36%</td>
<td>19%</td>
<td>-35%</td>
</tr>
<tr>
<td>Media</td>
<td>-36%</td>
<td>18%</td>
<td>-47%</td>
</tr>
<tr>
<td>Insurance</td>
<td>-42%</td>
<td>17%</td>
<td>-40%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>-42%</td>
<td>23%</td>
<td>-26%</td>
</tr>
<tr>
<td>Auto</td>
<td>-47%</td>
<td>19%</td>
<td>-45%</td>
</tr>
<tr>
<td>Banks</td>
<td>-41%</td>
<td>9%</td>
<td>-44%</td>
</tr>
<tr>
<td>Hospitality</td>
<td>-49%</td>
<td>28%</td>
<td>-47%</td>
</tr>
<tr>
<td>Durable Goods</td>
<td>-49%</td>
<td>20%</td>
<td>-32%</td>
</tr>
<tr>
<td>Energy</td>
<td>-56%</td>
<td>26%</td>
<td>-45%</td>
</tr>
</tbody>
</table>

Observations

- Non-discretionary/essential service less hit but still had recovery
- Broad set of industries experiencing pressure, with some regions particularly affected for certain sectors (e.g. transport in Europe)
- Utilities and health equipment generally better off in Asia
- Hardest hit sectors have rebounded, but still negative TSR YTD

---

¹ Performance is tracked for two periods, first from 21 February 2020 (before international acceleration of outbreak) to 20 March 2020 (trough of the market) and from 20 March 2020 through 15 April 2020

Source: S&P Capital IQ; BCG Henderson Institute; BCG
Credit risk continues to be a concern for majority of sectors

As of 21 February 2020 to 15 April 2020

<table>
<thead>
<tr>
<th>Sector</th>
<th>Median 5-year CDS implied probability of default</th>
<th>Number of companies with 5-year CDS probability of default &gt;15%</th>
<th>Companies in distress (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthier sectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food/staples Retail</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Pharma</td>
<td>3%</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Household Products</td>
<td>4%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Food &amp; Beverage</td>
<td>4%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Telecom</td>
<td>6%</td>
<td>4</td>
<td>15%</td>
</tr>
<tr>
<td>Pressured sectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semiconductors</td>
<td>6%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Utilities</td>
<td>4%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Health Equipment</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Software</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Materials</td>
<td>6%</td>
<td>7</td>
<td>15%</td>
</tr>
<tr>
<td>Tech Hardware</td>
<td>4%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Prof. Services</td>
<td>5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Transport</td>
<td>3%</td>
<td>8</td>
<td>32%</td>
</tr>
<tr>
<td>Capital Goods</td>
<td>5%</td>
<td>6</td>
<td>10%</td>
</tr>
<tr>
<td>Retailing</td>
<td>8%</td>
<td>8</td>
<td>47%</td>
</tr>
<tr>
<td>Vulnerable sectors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financials</td>
<td>6%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Media</td>
<td>8%</td>
<td>2</td>
<td>14%</td>
</tr>
<tr>
<td>Insurance</td>
<td>6%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Real Estate</td>
<td>8%</td>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td>Auto</td>
<td>12%</td>
<td>7</td>
<td>33%</td>
</tr>
<tr>
<td>Banks</td>
<td>6%</td>
<td>2</td>
<td>4%</td>
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<tr>
<td>Hospitality</td>
<td>12%</td>
<td>6</td>
<td>43%</td>
</tr>
<tr>
<td>Durable Goods</td>
<td>6%</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Energy</td>
<td>13%</td>
<td>9</td>
<td>26%</td>
</tr>
</tbody>
</table>

Observations

Hospitatlity, energy, retailing industries facing greatest risk of default based on current credit profile

Less discretionary sectors are largely at lower risk of default in current climate

Other sectors may have individual companies in specific default risk as well

Note: As of 15 April 2020; Based on top S&P Global 1200 companies; Industries are based on GICS definitions

1 Credit Default Swap; 2 Performance is tracked for the period 21 February 2020 (before international acceleration of outbreak), through 15 April 2020. 3. Distressed comprises over 15% implied probability of default Source: S&P Capital IQ; BCG Henderson Institute; BCG
## Governments stepping in to provide impetus to stressed sectors

As of 15 Apr 2020

<table>
<thead>
<tr>
<th>Example: Aviation</th>
<th>Loans/Guarantees/ Direct payments</th>
<th>Scrapping of charges</th>
<th>Grants for salaries</th>
<th>Other Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>US</strong></td>
<td>~$30B for airlines and cargo carriers (excluding grant for salaries)</td>
<td>Grants to ensure continued operations; have to maintain 90% employment</td>
<td>~$30B grant to continue salaries for airlines and cargo employees</td>
<td>Fund for emergency loans; deferral of taxes</td>
</tr>
<tr>
<td></td>
<td>$10B in grants for Airports</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td>$3.2B 15-month incentive loan</td>
<td>Relief from airport fees Forego fuel excise, air service charge and regional security fees</td>
<td></td>
<td>Lowered bank ratios to improve liquidity</td>
</tr>
<tr>
<td><strong>UK</strong></td>
<td>Guarantee of 80% of loan upto £5M</td>
<td>80% of the wages of any employee</td>
<td></td>
<td>100% business rates holiday for 12 months</td>
</tr>
<tr>
<td><strong>Singapore</strong></td>
<td>Carriers and airport operators to defer fee payment to government amounting to ~$140M</td>
<td>Rebate on landing charges, parking charges, and office rentals at the airport</td>
<td>75% of the first ~$4,600 of employees monthly pay</td>
<td>Rental relief for ground handlers, cargo agents scrapping of property tax</td>
</tr>
<tr>
<td><strong>Hong Kong</strong></td>
<td>HK$2 billion purchase scheme for half-million air tickets, as well as buying back airport services equipment</td>
<td>Waiver of aeronautical charges reduction on landing charges</td>
<td>HKAA (Public Airport Authority) allowed 70% discount on rent for airport concessionaires; subsidy of HK$1M for each large aircraft, HK$0.2M for smaller planes</td>
<td></td>
</tr>
</tbody>
</table>

Source: Government Websites; Press Search
## Focused support to small industries and services

As of 16 April 2020

<table>
<thead>
<tr>
<th>Region</th>
<th>Loans/Guarantees/ Direct payments</th>
<th>Tax rebates/extension</th>
<th>Grants for salaries/ Employee Retention</th>
<th>Other Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>US</strong></td>
<td>SBA(^1) to pay all principal, interest and fees on all existing SBA loan products for 6 months</td>
<td>Deferred tax payments until December</td>
<td>$349B paycheck – protection program - 100% federally backed loans of up to $10M</td>
<td>Loan advance up to $10k to affected businesses without a need to repay</td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td>Guarantee of 50% for new, unsecured loans</td>
<td>Deferred tax payments by up to 4 months (ATO(^2)) Instant asset write-off threshold increased to $150k</td>
<td>$1,500 per fortnight per employee for up to 6 months 50% wage subsidy of an apprentice for up to 9 months</td>
<td>Moratorium on evictions over next 6 months for commercial tenants</td>
</tr>
<tr>
<td><strong>UK</strong></td>
<td>Guarantee of 80% of loan up to £5M by British Business Bank</td>
<td>Additional 3 months to file accounts with Companies Deferred VAT payments by 3 months</td>
<td>HMRC(^3) to reimburse employers up to 80% of the salary costs</td>
<td>£10k one-off grant to businesses Commercial tenants to be protected from eviction</td>
</tr>
<tr>
<td><strong>Singapore</strong></td>
<td>Guarantee of 80% of loan up to $1M at 5% interest rate</td>
<td>25% tax rebate capped at $15k and 15% property tax rebate</td>
<td>8% rebate of the wages for 3 months ($1.3B program)</td>
<td>1 month of rental waiver to stallholders and .5 months to other tenants</td>
</tr>
<tr>
<td><strong>Japan</strong></td>
<td>Up to 100% loan guarantee under a framework of up to 280M Yen</td>
<td>Deferred tax payments by up to 1 year</td>
<td>Increase in subsidies from 66.7% to 90% for part-time pay and wages</td>
<td>Subsidies for capital investments up to 10M Yen</td>
</tr>
<tr>
<td><strong>India</strong></td>
<td>INR 10M emergency working capital loans within 48 hours; 3 month deferment of loan EMI(^5) repayments</td>
<td>Tax payments deadline extended by 3 months</td>
<td>Pay 12% EPF(^4) contribution of employer for 3 months</td>
<td>Waiver of minimum account balance; reduced bank charges for digital transactions</td>
</tr>
</tbody>
</table>

---

1. SBA refers to Small Business Administration 2. ATO refers to Australian Tax Office; 3. HRMC refers to Her Majesty’s Revenue and Customs; 4. EPF is Employee Provident Fund 5. Easy monthly instalments

Source: OECD. (2020); Press Search; SME Policy Responses
## Fight: Key scenario inputs and implications

As of 14 April 2020

### Scenario parameters

**DURATION of "Fight"**

- Cure development/deployment timeline
- Health care, testing, and monitoring capacity
- Continued government response
- Societal response to social distancing measures
- Economic result
- Consumer behavior
- Output of different industries

**LEVEL of economic recovery**

### Key scenario drivers

1. Based on vaccine treatment implemented; 2. Level of economic openness

### Scenario overview

<table>
<thead>
<tr>
<th>Scenario parameters</th>
<th>DURATION of &quot;Fight&quot;</th>
<th>LEVEL of economic recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cure development/deployment timeline</td>
<td>Health care, testing, and monitoring capacity</td>
<td></td>
</tr>
<tr>
<td>Critical care patients</td>
<td>Continued government response</td>
<td></td>
</tr>
<tr>
<td>Economic activity</td>
<td>Societal response to social distancing measures</td>
<td></td>
</tr>
<tr>
<td>Critical care patients</td>
<td>Economic result</td>
<td></td>
</tr>
<tr>
<td>Economic activity</td>
<td>Consumer behavior</td>
<td></td>
</tr>
<tr>
<td>Critical care patients</td>
<td>Output of different industries</td>
<td></td>
</tr>
</tbody>
</table>

---

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Duration of Fight: Aggressive movement toward vaccine in 12-18 months

As of 15 April 2020

Timeframe (years) 0 1 2 3 4 5

Traditional paradigm takes > 5 years

- Discovery / screening
- Phase 1
- Phase 2
- Phase 3
- Commercial launch

Potential accelerated pathway for Covid-19 vaccine

- Discovery / screening
- Phase 1 (10s patients)
- Phase 2 (100s patients)
- Phase 3 (1,000s patients)
- Commercial launch

Key success factors/indicators:

- Published safety data to show vaccine has been well tolerated in healthy volunteers
- Manufacturing scale-up beginning immediately (expected ~6-12 month lead time)
- Expansion of clinical trials to include volunteers over 60 years old
- Established a clear view on a surrogate of efficacy (e.g. challenge model)

Duration of Fight: Data from therapeutics will likely emerge in a few months; drugs will likely reduce severity of infection

As of 15 April 2020

### Drug

<table>
<thead>
<tr>
<th>Drug</th>
<th>Current use</th>
<th>Q2 2020</th>
<th>Q3 2020</th>
<th>Q4 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remdesivir</td>
<td>• Ebola and other coronaviruses (investigational)</td>
<td>Currently used under compassionate use</td>
<td>Gilead may apply for ultra-quick review if early trial data looks positive; potential to supply 140k treatment courses</td>
<td></td>
</tr>
<tr>
<td>Hydroxychloroquine (Plaquenil)</td>
<td>• Malaria and lupus</td>
<td>Currently used under compassionate use</td>
<td>If clinical data is positive, high potential to scale production quickly</td>
<td></td>
</tr>
<tr>
<td>Tocilizumab (Actemra)</td>
<td>• Rheumatoid arthritis</td>
<td>Likely to see data readout in Q3 2020 for 28-day controlled study</td>
<td></td>
<td>Trials with severe or critically ill patients started in late March 2020</td>
</tr>
<tr>
<td>Sarilumab (Kevzara)</td>
<td>• Rheumatoid arthritis</td>
<td>Johns Hopkins team has begun to build a network of 40 sites across 20 states to biobank plasma; scale will be a big limitation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Convalescent serum</td>
<td>• N/A (previously used in H1N1 and Ebola outbreaks)</td>
<td>Results from the trials in the two New York hospitals are expected around the end of April</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Synthetic antibodies (i.e. produced in bioreactor)</td>
<td>• N/A</td>
<td>Targeting clinical trials to begin in Summer of 2020</td>
<td></td>
<td>Expect to have capacity to provide small scale access by late Fall 2020 (Regeneron)</td>
</tr>
</tbody>
</table>

### Key success factors/indicators:

- Clinical data from controlled trials showing reduced hospitalization time or infection level
- Demonstrated safety profile at the dose required to achieve efficacy
- Bio-banking infrastructure to support convalescent plasma

Fight: Likely very different ramps by geography and by sector
China example

As of 07 April 2020

People and goods are starting to move again

Coal consumption moving higher

Property transactions are restarting

Areas with early intervention show signs of V-shaped ramp; Wuhan/Hubei trending toward U shape

Note: China data re-based for weekdays excl. weekends relative to start of Chinese New Year. Congestion delay index average include Beijing, Shanghai, Guangzhou, Shenzhen, and Wuhan; Daily coal consumption of major power plants = sum of daily average coal consumption of Jerdin Electric, Guangdon Yudean Group, Datang International Power Generation, and Huaneng Power International, Inc. Source: Wind, www.cqcoal.com, and BCG Center for Macroeconomics
In developed markets, younger consumers are concerned about virus's financial impact, but confident about restart and recovery.

As of 30 March 2020

Financial security

- More worried
  -20 pp
- Less worried
  Average 20 pp

Strength in savings

- Weaker
  -20 pp
- Average
  20 pp
- Stronger
  20 pp

Economic outlook

- Negative
  -20 pp
- Average
  20 pp
- Positive
  20 pp

Return to normalcy

- Slower
  -20 pp
- Average
  20 pp
- Faster
  20 pp

Younger generations feel more positive.

Older generations feel more secure.

Source: BCG COVID-19 Consumer Sentiment Survey, March 27–30, 2020 (N = 2,928 Canada; 2,985 France; 3,085 Germany; 2,150 Italy; 2,984 UK; 2,944 US), unweighted, representative within ±3% of census demographics. Note: Question text: “How much do you agree with each of the following statements about the coronavirus?”
Several countries have already announced restart ambitions

Notes: ‘(Began…)’ refers to the start date of a country’s lockdown, lockdown definition varies between countries; Italy, Spain have announced some intention to lift some restrictions in April, but without specific dates stated

Source: Lit search; BCG analysis

Transition timeline from 'Flatten' to 'Fight' phase for selected countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Proposed re-entry plans dependent on disease evolution in each country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>Proposing to lift some restrictions on business and schools, ban on gatherings until 10 May</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>Planning to lift restrictions on some home repair and household goods shops</td>
</tr>
<tr>
<td>Austria</td>
<td>Proposing to reopen small shops, large shops to remain closed until May</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Proposing to reopen selected economic sectors in phases, following strict hygiene rules</td>
</tr>
<tr>
<td>United States</td>
<td>State-led reopening potentially starting beginning of May</td>
</tr>
<tr>
<td>Norway</td>
<td>Proposing to resume some businesses, schools, and travel</td>
</tr>
<tr>
<td>Germany</td>
<td>Planning to begin lifting restrictions for some businesses and shortly after for schools</td>
</tr>
</tbody>
</table>

Initial details of restart

As of 09 April 2020
To transition from 'Flatten' to 'Fight' phase, leaders need to think through multiple key questions.

**Governments**
- How to balance containment and mitigation with socioeconomic recovery?
- When is the right time to reopen?
- What is the optimal sequencing of reopening?

**Ecosystems**
- How to manage uncertainty given winning requires coordination of many stakeholders?

**Businesses**
- Under what context should employees be allowed to return to their workplace?
- Which employees should return to their workplace?
- What interventions should be taken to ensure a safe work environment?

Source: BCG
Reopening activities need to be guided on a national level and adapted to local realities

1. Establish and assign risk levels to local regions
2. Develop discretionary guidelines by risk level
3. Regions establish oversight and 'control tower'
4. Set specific policies at local level
5. Private and public actors develop unique playbooks

**National advisory guidelines** articulate a common framing of risk levels and provide practical advice on actions to take for each risk level (transportation, gathering size, PPE, etc.):
- Federal public health officials advise on disease management activities by risk level
- Risk levels a function of health care readiness (and in some instances public engagement)

Actual sequence of reopening activities needs to go from **de-averaged** and responsive to **locally driven**, customized to on-the-ground facts:
- Result is decision-makers adopting different strategies for recovery by locality based on how to best meet requirements for the local risk level, and tailored to their local conditions

Governments should actively **involve the private sector** in creation of sector-specific playbooks to achieve guidelines including industry associations, trade and labor unions, chambers of commerce.
Local risk assessments determine need for application of differentiated guidelines

Each area is to be categorized into four risk clusters with varying degrees of openness

- **Severe Red**
  - Areas with high case load, high growth, and high risk of transmission
  - **Extended lockdown** except for essential goods and services

- **Red**
  - Areas with high case load but low growth rate of new cases

- **Yellow**
  - Areas with no new cases in last week and all prior cases isolated/contained
  - **Selectively open up and prepare for full opening**

- **Green**
  - Areas with no new cases in the last 3 weeks and all prior cases recovered
  - **Open up to the extent feasible while monitoring risk of outbreak**

**Case study: National guidelines in Germany vary by region based on assessed risk**

In Bayern, an area with a comparatively higher current caseload, growth rate, and population density, restrictions are tighter and reopening of shops and schools will happen later than in the rest of Germany, such as Mecklenburg-Vorpommern.

- **Mecklenburg-Vorpommern**
  - Current case load: 15/100k
  - Growth rate (7-day avg.): 1.5%
  - Population density: 69/km²

- **Bayern**
  - Current case load: 136/100k
  - Growth rate (7-day avg.): 2.7%
  - Population density: 185/km²

1. Not all recovered cases get reported; Source: Bayerisches Landesamt für Statistik, Regierung Mecklenburg Vorpommern, Zeit, BCG analysis
Governments need to get the preconditions for opening right

### Health care readiness

<table>
<thead>
<tr>
<th>Disease conditions</th>
<th>Health care capacity</th>
<th>Virus monitoring system</th>
<th>Business preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control of virus impact in terms of case growth and disease impact (e.g. high risk populations)</td>
<td>Adequate supply of hospital supplies, trained workers, treatment spaces</td>
<td>Widespread virus testing relative to new case volume, serological testing, and contact tracing</td>
<td>Workplace health protocols and business readiness</td>
</tr>
</tbody>
</table>

- Leading indicator that measures are effective, public health is protected
- Capacity sufficient to care for COVID-19 and other health needs
- Testing to inform decisions, resource allocation, and outbreak resolution
- Businesses ensure workplace safety for those returning to work

### Public/economic readiness

<table>
<thead>
<tr>
<th>Public response</th>
<th>Government preparation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training and availability of hygiene products and PPE; high compliance rates</td>
<td>Federal framework for public health, sectors, and global politics</td>
</tr>
</tbody>
</table>

- Public educated and empowered to adhere to guidelines, play role in containment
- Clear guidance, expectations, and legal protection for system actors

Source: BCG analysis
Five different factors should inform the sequencing decision

### Three factors are primary determinants for country-specific sequencing

1. **Virus resurgence**
2. **Income at risk**
3. **Employment**

### Weekly income at risk and virus resurgence risk factors are two starting considerations

#### Weekly income at risk during major lockdown ($B)

- Manufacturing
- Education
- Professional services
- Arts and entertainment
- Accommodation & food
- Construction
- Finance, insurance & RE
- Wholesale & retail
- Resources & utilities
- Other services

#### Virus resurgence risk factor

4. **Geographical specificity**
5. **Sector interconnectedness**

Note: The virus resurgence risk factor takes into account frequency of contact, contact with external customers, physical proximity during interactions, likelihood of exposure to illness. Source: BCG analysis.
Global integration of **electronics** supply chain – key regional steps

1. **Metals** imported, rare earth metals mined in China
2. **Components** like silicon wafers, chips, and PC boards made in SEA, China, and US
3. **Larger assemblies** fabricated in the US, Taiwan, Japan, and Philippines
4. **Final assembly** and testing in Chongqing
5. **Products** shipped through Chongqing Port/Shenzhen Port worldwide

**Note:** Based on Dell/Apple laptop supply chains

**Source:** BCG research

Ecosystems and a global view will be required as economies open...
Existing industry associations can bridge the gap between governments and companies to set standards

**Business for South Africa:** Companies across sectors joining forces to define COVID response

Business for South Africa (B4SA) is a conglomerate of businesses and leaders
Its purpose is to jointly develop a strategic and sustainable response to COVID-19
B4SA works in close collaboration with the government, the media, and NGOs
It consists of four workstreams:

**Health care**

**Economics**

**Labor**

**Communications**

**Suraksha stores:** Public/private partnerships to ensure safety and hygiene practices

Government sets up 2 million 'Suraksha Stores' to provide daily essentials to citizens
The initiative will convert small shops to retail outlets selling daily essentials
India's top 12 packaged consumer goods companies support the implementation
Each company will be given one or two states to execute this plan effectively
Companies include:
Guiding principles for leadership in crisis

“TheSE are the times that try men's souls. The summer soldier and the sunshine patriot will, in this crisis, shrink from the service of their country; but he that stands by it now, deserves the love and thanks of man and woman. Tyranny, like hell, is not easily conquered; yet we have this consolation with us, that the harder the conflict, the more glorious the triumph.”

Thomas Paine, The Crisis

Be visible, purposeful, and authentic
Communicate in ways that engage and increase the relevance of your teams and clarify the reasons underlying your communications

Use multiple clock-speeds
Think on multiple timescales by considering the now, the next, and the later. Ensure that leadership teams look ahead and prepare for the future

Cut through bureaucracy
Assemble a multi-functional task force that is empowered to make decisions and suspend normal decision protocols

Leverage the principle of “commander’s intent”
Share only key objectives and rationale of required actions to allow the organization to be flexible and adaptive, and allow a focus on execution

Engage externally
Communicate with customers and stakeholders to gather frequent, fresh, firsthand information to adapt and respond effectively

Keep imagination alive
Look out for new needs and opportunities to serve clients now and beyond the crisis. We will not be reverting to a 2019 reality

Source: When Leadership Matters Most, BCG Henderson Institute
Business leaders need to consider their employees’ risk profile holistically, not take an isolated view of the workplace.

**Home environment/community**

Employees might have exposure to other people in their home environment like family, roommates, or people they have to care for (like grandparents); or live in more densely populated communities.

**Commute from/to work**

Employees commute to work via public/group transport where they are exposed to other commuters in confined space like buses.

**Workplace**

Employees interact with their colleagues or clients at the workplace depending on the type of work and workplace.

Source: BCG
To know more about the 9 action areas for business leaders, refer to the previous edition.

### Flatten

1. Develop Scenario-Based Planning Approach to manage uncertainty

### Fight

2. Create a Rapid Response and Transformation (RR&T) team

### Future

3. Revamp Organization and People for the new normal

4. Drive Topline Security and Customer trust

5. Stabilize and restart Supply Chain, Manufacturing

6. Manage Cost, Cash, and Liquidity

7. Emerge Stronger; drive advantage in adversity

8. Accelerate Digital and Technology transformation


Note: RR&T = Rapid Response and Transformation Team

Source: BCG
Establish crisis management

1 Develop Scenario-Based Planning Approach to manage uncertainty

2 Create a Rapid Response and Transformation (RR&T) team

Navigate through Flatten, Fight, and Future

3 Revamp Organization and People for the new normal

Detailed measures across priority action areas (1/3)

Flatten

- Deep-dive into possible outcomes of disease spread, demand shifts, supply/ops issues, regulatory requirements, and potential operations restart; adjust for sector-specific issues
- Perform scenario stress tests around cash-flow
- Establish preconditions for what it will take to get workforce back to offices, factories, etc.
- Set up teams to work on different time horizons (flatten, fight, future) to avoid reverting to crisis management across all

Fight

- Frequently run scenarios and update plan; focus on understanding the de-averaged impact by geography and line of business, depth of demand drop, duration of Fight phase
- Develop recommendations for daily planning, resources, supply chain, workforce, and other stakeholder management as per modeled scenarios
- To manage the massive complexity of "restarting", enhance Rapid Response & Transformation team structures
- Develop approach for how to bring people back to work, how/when to engage customers
- Establish governance and standardization to effectively coordinate other areas from the RR&T

Future

- Define policies to keep employees safe with high morale
- Engage across levels to retain talent
- Move to online/remote working; redefine rosters and train for efficiency/effectiveness
- Establish preconditions for coming back to the working environment; clearly communicate
- Build SWAT teams to address critical business areas, such as product launch, digital channel redesign, retail delivery models

- Get ahead of the curve on team to manage policies to get teams back to work safely
- Take a clear view of forward demand and the new normal: manage/restructure organization to fit capacity needs
- Create dedicated focus to accelerate digital, process automation, new ways of working

Source: BCG
Flatten

- Reach out to customers for their situation and needs,
- Drive actions to inspire confidence and ensure ability to deliver (e.g., multichannel, people-light approaches)
- Manage volatility in demand, and refine sales motions (e.g. to virtual) and objectives

- Take measures to ensure operations continuity:
  - Workforce safety and management, stop-gap measures for supply chain, site readiness (access, maintenance, services, suppliers)
  - Ensure open and direct communication with employees
  - Explore solutions to retain key talent

- Build forecasts for COVID-19 impact on P&L, balance sheet, investor base
- Review capital sufficiency scenarios and possible effects on credit risk
- Manage credit and debt commitment for short term
- Create agile FY20-21 business plans and budgets to deal with uncertainty

Fight

- Assess changes in customers' behaviors
- Adapt and transform channels (e-commerce), sales, marketing spend, pricing, and support
- Ramp up commercial efforts significantly to seize market shifts; leverage learnings to accelerate digital capabilities

- Ensure quick and safe restart of facilities; drive centrally driven efficiency measures
- Set up capabilities (org, control tower) to manage unstable supply chain; explore alternate networks, dual/multiple suppliers for critical goods and services, delivery methods, etc.
- Accelerate production as demand rebounds; account for product shifts

- Build central team to simulate financials as per evolving scenarios; drive agile working ways
- Decisively take structural actions: TURN PMO, zero-based budgets, delayering/restructuring, re-base tech portfolio, etc.; deploy rapidly as speed is predictive of success in downturns

Source: BCG
Detailed measures across priority action areas (3/3)

### Flatten
- Stress-test current value proposition and business offerings, and scan crisis impact on key customer/market trends
- Address and serve immediate workforce needs for remote working
- Leverage tools for conducting key processes online
- Adapt traditional processes to become digitally viable
- Ensure immediate support to employees, suppliers, communities, etc.
- Team with government/local communities/across industries to address crisis
- Leverage assets, supplier relationships, logistics networks, and employees to help adjacent communities
- Work across industry boundaries to identify cross-sectoral synergies to deploy solutions

### Fight
- Plan for new projects to shift the portfolio and leverage the ‘new normal’; plug capability gaps
- Identify white spaces in own industry and ecosystem
- Selectively invest in areas where opportunistic M&A can be conducted
- Develop and implement strategy to exploit greater talent availability
- Identify and implement key digital use cases and adapt to agile way of working
- Accelerate use cases to meet demand shifts
- Redesign key customer journeys with emphasis on digital interventions
- Determine how to contribute in the crisis to employees, customers, through medical response, supply of essential items for society, or by playing a positive economic/employment role
- Allocate innovation resources where possible to focus on solutions to COVID-19 crisis
- Leverage expertise developed to support government policies and responses, rebuild business for local customers, suppliers, etc.

Source: BCG
Additional perspectives on COVID-19

Selected overarching publications

People & Organizations
- How to protect your workforce during the COVID-19 pandemic

Strategy
- Sensing and shaping the post-COVID era

Economic Impact
- Understanding the economic shock of coronavirus

Crisis Response Checklist
- Checklist

Operations
- Building the Bionic Supply Chain

Technology & Digital
- The Rise of the AI-Powered Company in the Postcrisis World

Selected sector publications

Transportation & Logistics
- Transportation and logistics companies must adapt to keep supplies moving

Airlines
- The post-COVID-19 flight plan for airlines

Public Sector
- Governing in the time of coronavirus

Health Care
- COVID-19 Is Stressing the Finances of Even the Strongest US Health Systems

Consumer
- COVID-19 Consumer Sentiment Snapshot #5

Telecommunications
- Time for action: In times of COVID-19 Telcos need to move rapidly to be part of the solution

Energy
- How Uncertainty Is Hitting M&A in Oil and Gas

Financial Institutions
- How Should FIs navigate the COVID-19 Crisis

Automotive
- COVID-19’s Impact on the Automotive Industry

Source: BCG
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