Global Alumni Town Hall
An Update on the Fight: Reopening the Economy
September 24th, 2020
Welcome to BCG's Global Alumni Town Hall

- Thank you for joining us from a community of 26k people worldwide.
- This is our 4th global live session after three successful webinars in April, May & July. We're glad to make this happen again!
- This challenging time has brought us together, but we wanted to connect with all of you as unique and valuable members of the BCG community.
- Since the beginning of COVID we have published 300 new pieces on bcg.com, an 80% growth in articles and reports that reflects our collective commitment to publish and share how COVID is impacting our clients across industries and sectors on a range of capabilities.
- Before we begin, some housekeeping items:
  ✓ You're all muted for a better audio experience
  ✓ In case of tech issues, write to Alumni_relations@bcg.com
  ✓ We'll share these slides with you along with the recording!
Key Speakers

Today

Marin Gjaja
Managing Director and Senior Partner

Andrea Gallego
Global BCG GAMMA CTO

Sylvain Duranton
BCG GAMMA Global Leader
What we'll cover

- Progress on the Fight and a Safer Reopening
- The Power of Scaling Up during COVID-19 & Beyond
- Unlocking Artificial Intelligence's Potential during a Pandemic
Progress on the Fight
How we defined the pandemic journey for a given geography

1. Estimated point when pandemic is declared over, restrictions have been mostly lifted, and risk to the population has been dramatically reduced

Source: BCG
Planning ranges for scenarios we shared in April - we thought the Fight would be longer and harder than any of us hoped

- **Flatten**
  - Economic activity
  - Healthcare system capacity
  - Critical care patients

- **Fight**
  - (15%) to (30%) off pre-COVID levels
  - (5%) to (30%) off pre-COVID levels

- **Future**
  - Disease Risk Minimized
    - 12, 24, or 36 months

**Illustrative**

1. Estimated timeframe for a safe and effective vaccine to be developed, manufactured, and delivered on a wide scale to achieve meaningful levels of herd immunity
   
   Source: BCG
Planning ranges for scenarios we shared in April

Flatten

Fight

Future

Economic activity

Healthcare system capacity

Critical care patients

(15%) to (30%) off pre-COVID levels

(5%) to (30%) off pre-COVID levels

Re-start: Mid-May / late-June 2020

We are here

Disease Risk Minimized\(^1\): 12, 24, or 36 months

Key question:
How is the fight going?
Based on what we now know, how deep and how long will it be?

1. Estimated timeframe for a safe and effective vaccine to be developed, manufactured, and delivered on a wide scale to achieve meaningful levels of herd immunity

Source: BCG
In the US, business activity across all sectors, except Energy, has currently rebounded to previous year levels

As of 06 September 2020 Data for US

BCG Economic Recovery Pulse Check (ERPC): US example

Aggregate activity across time (YoY)

Healthcare witnessed stronger rebound due to increased demand during current crisis

AM, EPI, MPI, FI, TMT & TL saw steady, moderate recovery; currently above previous year levels

Energy continues to remain below pre-crisis levels

Note: Index value of 100 indicates a normal activity compared to previous year’s period; 1. Sector level activity based on 100+ data sources, e.g. financial index, macro economic data, employment, sector confidence, specific data source by sector etc.; 2. Refers to US lockdown start and easing dates 3. Medical Tech, Biopharma, Consumer Health (excluding Hospitals); 4. Aerospace & Defense, Infrastructure, Machinery & Industrial Automation; 5. Chemicals, Metals and Mining, Building Materials, Forest Products, Paper and Packaging; 6. Oil & Gas, Energy & Utilities; Source: BCG
In Europe, business activity\(^1\) across many sectors has currently rebounded to previous year levels

As of 06 September 2020 Aggregated for Europe (GER, FR, UK, ITA, SPA)

BCG Economic Recovery Pulse Check (ERPC): Europe example

Note: Index value of 100 indicates a normal activity compared to previous year's period; 1. Sector level activity based on 100+ data sources, e.g. financial index, macro economic data, employment, sector confidence, specific data source by sector etc.; 2. Refers to average lockdown start and easing dates across countries; 3. Chemicals, Metals and Mining, Building Materials, Forest Products, Paper and Packaging; 4. Medical Tech, Biopharma, Consumer Health (excluding Hospitals); 5. Aerospace & Defense, Infrastructure, Machinery & Industrial Automation; 6. Oil & Gas, Energy & Utilities; Source: BCG

AM, MPI and Healthcare currently above previous year levels; AM has seen strong recovery since the low activity during broader lockdown phase

TMT, FI, EPI, TL & Energy, continue to remain below pre-crisis levels; TMT and FI see continued rebound, close to previous year levels
We are fighting to reach a state where we have minimized risk from COVID-19 to the point that we no longer need to extensively contain the disease, i.e. it becomes more like influenza.

Several levers will impact the length of the Fight

- **Societal practices** (e.g., social distancing, masks, restrictions)
- **Virus monitoring** (e.g., testing, tracing, tracking, quarantine)
- **Natural and recovered patient immunity**
- **Therapeutics and clinical protocols**
- **Vaccines**

**Impact spread** (infection rate)

**Impact severity** (Infection fatality rate)

**Vaccines are likely the most critical tool.**

- Cannot shorten the Fight alone, but can improve trajectory; compliance continues to be an issue
- Highly variable execution globally; faster, cheaper, accurate enough tests are beginning to scale
- Having an impact, but relying entirely on this lever is likely impossible
- Dex was a strong addition, synthetic antibodies and immunomodulators both hold significant promise
- Probably our most powerful lever to shorten the fight

1. Percentage of fatalities across all infected individuals
2. Source: WHO, BCG analysis
Where are we today? 9 vaccine candidates already in Phase III

### Vaccine candidates across development phases

<table>
<thead>
<tr>
<th>Phase</th>
<th>Pre-Clinical</th>
<th>Phase I/II</th>
<th>Phase II</th>
<th>Phase III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>180</td>
<td>10</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>

### Potential timelines for candidates currently in Phase III

**As of 17 Sep 2020**

<table>
<thead>
<tr>
<th>Vaccine candidates</th>
<th>Targeted Ph III enrollment</th>
<th>WHO Phase III classification</th>
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</thead>
<tbody>
<tr>
<td>BioNTech, Pfizer</td>
<td>~44,000</td>
<td>▲</td>
</tr>
<tr>
<td>Moderna; NIH</td>
<td>~30,000</td>
<td>▲</td>
</tr>
<tr>
<td>Oxford Uni., AstraZeneca</td>
<td>~10,500</td>
<td>▲</td>
</tr>
<tr>
<td>Janssen (J&amp;J)</td>
<td>~60,000</td>
<td>▲</td>
</tr>
<tr>
<td>Sinovac</td>
<td>~9,000</td>
<td>▲</td>
</tr>
<tr>
<td>BIPB⁶ &amp; Sinopharm</td>
<td>~15,000</td>
<td>▲</td>
</tr>
<tr>
<td>WIPB⁷ &amp; Sinopharm</td>
<td>~15,000</td>
<td>▲</td>
</tr>
<tr>
<td>CanSino Biologics</td>
<td>~40,000</td>
<td>▲</td>
</tr>
<tr>
<td>Gamaleya⁸ (Sputnik V)</td>
<td>~40,000</td>
<td>Russia registers Sputnik V</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Month</th>
<th>Expected EUA¹ by US FDA for one or more candidates later this year, subject to initial phase III readouts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun</td>
<td>Q1 2021</td>
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</tbody>
</table>

Note: The timeline represented is highly dependent on Phase III vaccine results including safety and efficacy data and hence, subject to change; 1. Emergency Use Authorization; 2. Phase III trials involve a large number of volunteers (E.g., 10s of 1000s) to test efficacy & safety of vaccine; 3. Phase II studies involve small number of volunteers (E.g., 100-1000) & are intended to provide preliminary information about a vaccine’s ability to produce its desired effect; 4. Phase I clinical studies involve initial testing in very small number of volunteers (e.g., 20-100) to test the safety profile; 5. Oxford Uni / AstraZeneca voluntarily paused Ph. III trials to review the safety event on a UK patient; trials have since resumed in UK while continue to remain suspended in several other countries; 6. Beijing Institute of Biological Products; 7. Wuhan Institute of Biological Products; 8. Gamaleya Research Institute; 9. Trials are expected to continue till end of 2021 & 2022 for different candidates, as per WHO, clinicaltrials.gov. However, companies are expected to start approval applications with initial phase 3 results.

Source: Guggenheim, Wells Fargo, Bloomberg, Cowen, NYT, RBC, SVB, Milken Institute, Morgan Stanley, NIH, JPMorgan Chase, WHO, Press Search, BCG
Five questions to consider to understand the vaccines' potential to shorten the Fight

**Process**
- How are the vaccines being developed?

**Timing**
- When might a vaccine be available?

**Effectiveness**
- What is the impact on infection rates and severity?

**Availability**
- How fast can we get vaccines to targeted populations?

**Consumer response**
- Will people choose to get vaccinated?
So what are the scenarios? Our base case has accelerated by 3 months. Reflects US and EU, other geographies will vary.

1. **Fast recovery: Q3 2021**
   - Several highly effective vaccines receive EUA in late 2020...
   - With a well-coordinated supply chain ramp-up, including effective last mile delivery and provider training.
   - Information is clearly communicated to public, with assistance from global business leaders, resulting in a confident consumer base eager to receive vaccines.
   - By Q3 2021, most adults are vaccinated, and pandemic is declared over.

2. **Cautious Confidence: Q1 2022**
   - Two adequately effective vaccines receive EUA in late 2020...
   - Despite efficient manufacturing and broad distribution, last mile challenges create moderate supply chain delay.
   - Information is clearly communicated to public, but lack of data for all segments and underlying skepticism slows consumer uptake.
   - Vaccination rates increase in late 2021, as data is available, and SC stabilizes.
   - By Q1 2022, most adults vaccinated, and pandemic is declared over.

3. **Prolonged Drought: Q3 2022**
   - One vaccine receives EUA in 2020, and it is only moderately effective...
   - Manufacturing and distribution is disorganized, big last mile challenges.
   - Poor communication, mis-managed record keeping drives missed 2nd doses.
   - Loss of public trust prevents timely adoption of more effective later wave vaccines, and no therapeutic breakthroughs provide “silver bullet” risk minimization.
   - Pandemic is finally declared over in Q3 2022, after large 2nd COVID wave.
The Power and Challenges when Scaling Up During COVID & Beyond
COVID has accelerated the need in every industry to be agile and nimble

Volatility and uncertainty will not be short-lived
For the next few years organizations will live in an accordion type mode - with the ability to expand and contract at a moment’s notice

Remote working is here to stay
While in person work will return - working from home is here to stay - demanding an unprecedented digital shift for many organizations

We’ve gone 0-60 in <2 seconds in Technology and AI
The pace of innovation has been supercharged by the need to find vaccines, gain efficiencies, reduce costs, better forecast etc., leaving most organizations instantly behind racing to catch up
While creating many new and interesting challenges

ROI
- Uncertainty on spend for digital categories
- Many digital projects put on the backburner

People
- Remote working
- Limited talent management (upskilling/re-skilling)

Data and Tech
- Historical data less valuable
- Limited view on newer data sets
- Old tech platforms in a fast moving world

Source: BCG case experience
However now is the time to take stock, invest and advance

**Take stock** in all of the data and digital assets you already have

**Invest** in critical areas - talent and technology

**Advance** and break through the break even concept and plan for growth
Take stock

• **Data check**: What data do you already have? What new data should you be acquiring?

• **IT sprawl check**: Take this opportunity and consolidate software spend, what is duplicative? What IP is sitting on the shelf? When was the last time you did a build vs. buy analysis

• **Innovation check**: What gaps has the current economy revealed in the org? What opportunities does this create?
Invest – now is the time

**Talent** – Companies that have done this well through crisis manage to maintain and retain their people by finding other roles for them throughout the org, leveraging low cost programs to re-skill or upskill (lower cost than attrition and re-hiring).

**Technology** – Even with constrained budgets, companies find intelligent ways to invest in digital priorities to come out ahead post crisis.

Enabling a more digital and efficient workforce will give you an edge post COVID-19.

Building a stronger and more nimble (i.e. microservices or hybrid cloud) tech foundation will make innovation cycles much faster and inline with the speed of change we face today.
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**Advance - Break Through to Break Away**

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**Fill new needs**

Warby Parker launched during the 2008 recession and filled a need for lower cost prescription glasses.

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**Adjust/create offers**

Netflix introduced a new product and formed two new partnerships during the 2008 recession.

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**Expand into new markets**

Lego expanded into new markets during the 2008 recession - hitting all time high profitability.
I’ve heard there’s going to be a RECESSION.

I’ve decided not to PARTICIPATE.

Walt Disney via Gecko&Fly
Unlocking AI's Potential During a Pandemic
Volatility
Uncertainty
Multi-Factor (epi, eco ...)
Scenarios >> Forecasts
Real Time Decisions
Trends for the next 3-4 weeks

Next 12-18 months

Short-term sensing

Medium term scenarios
Governments: Machine learning and optimization to manage scarce medical resources
LIGHTHOUSE:
High Frequency data for decision making in volatile context

- Epidemiological data
- Restriction and containment data

- Credit card spend data
- Consumer sentiment data

- Digital activity by sector
- Digital activity by brand / property

- Economic recovery Pulse check by sector
- Leading macro economic indictors

- Passenger Airline flows
- Sea freight flows

- Consumer Activity Index
- Retail footfall
Three general archetypes driving general market volatility - and thus inherent resilience

<table>
<thead>
<tr>
<th>FOCUS SEGMENTS</th>
<th>NEW BUILD MARKETS</th>
<th>RENOVATION MARKETS</th>
<th>INFRASTRUCTURE MARKETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. Residential</td>
<td>N. Retail</td>
<td>N. Office/Commercial</td>
<td>N. Residential</td>
</tr>
<tr>
<td>L. Residential</td>
<td>L. Retail</td>
<td>L. Office/Commercial</td>
<td>L. Residential</td>
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<td>U. Residential</td>
<td>U. Retail</td>
<td>U. Office/Commercial</td>
<td>U. Residential</td>
</tr>
</tbody>
</table>

**Implied Volatility**
- New build market: Typically more volatile during economic crises (two householding due to sequester, initial commercial spending)
- Renovation market: Typically more stable during economic crises, leverage highly dependent on government incentives, e.g., negative IRRs in case of government spending programs
- Infrastructure market: Typically more stable during economic crises, leverage highly dependent on government incentives, e.g., negative IRRs in case of government spending programs

**B2B Supplier:**

**ML to track web activity and secure & optimization**

To secure critical supply
Cosmetics company:

ML to trace early digital signals & probability

To build recovery scenarios
Financial Institutions: ML and Optimization for Real-time client liquidity monitoring and projection
New normal

- Ultra Granular Forecasts
- Resilient Operations
- Remote Economy
- Targeted Offers
- In silico innovation
All companies not equal during downturn

- **Increasing sales growth**: 14%
- **Expanding EBIT margin**: 14%
- **Shrinking EBIT margin**: 44%
- **Falling sales growth**: 28%
Bionic companies recover faster from COVID-19 crisis

Stronger performance of Bionic companies prior to crisis
Less decline
Faster recovery

Market capitalization
Indexed to Sep 1st 2019

- CW08 (Feb 17th) Start of decline
- CW13 (Mar 23rd) Start of recovery
- CW26 (June 28th) Bionic comp. fully recovered

Source: Capital IQ, DAI Global Database
Closing Round
Thank you for joining us today

Resources available to support you:

Global Alumni Team is ready to help you at Alumni_relations@bcg.com

Local Alumni Teams in every BCG office. Check www.bcg.com/Alumni/groups.aspx

Weekly new content on COVID-19 available at bgc.com & a refreshed bgc.com/Alumni with videos, news and career tips

Dedicated social media groups to BCG Alumni in Facebook and LinkedIn

Your data is valuable; please keep your information updated so you never miss a message and an invitation!