Building a resilient enterprise: Now, Next and Beyond

Sector response to COVID-19
Telecommunications

May 2020
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01  A world in crisis
02  Shifting gears
03  Sectoral impact
04  Navigating this crisis
"The world is facing the worst economic fallout since the great depression"

- Kristalina Georgieva, IMF Chief

<table>
<thead>
<tr>
<th>200+ countries, areas or territories with COVID-19 cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 billion people under lockdown or 1/3rd of the world’s population</td>
</tr>
<tr>
<td>Simultaneous double digit dip in global supply and demand</td>
</tr>
<tr>
<td>2-3% contraction of global GDP</td>
</tr>
<tr>
<td>Global unemployment levels at an all time high</td>
</tr>
<tr>
<td>170 countries to experience negative per capita income growth in 2020-21</td>
</tr>
<tr>
<td>~2500+ government pronouncements to manage the crisis</td>
</tr>
<tr>
<td>Significant decline predicted for global trade in 2020-21</td>
</tr>
</tbody>
</table>

The COVID-19 pandemic and the subsequent lockdown has dealt a severe blow to an already-stressed global economy. The suddenness, spread, and severity of the pandemic across the globe has pushed countries and institutions into uncharted territories.

# Estimates based on multiple sources: Bloomberg, UNCTAD, WEF, WTO & ILO.
Covid-19 will have significant implications for an already stressed Indian economy.

**Macroeconomic impact**
- Significant dip in GDP growth while India continues to be among the fastest growing economies globally
- Adverse impact on fiscal deficit due to dual impact of fiscal stimulus and lower revenue collections
- Substantial erosion of investor wealth due to flight of foreign capital

**India's response - economic recovery to commence with graded relaxation of lockdown from 4 May 2020**
- Stringent national lockdown
  - Stringency Index (100=strictest): 100, 95.2, 90.5, 71.4, 66.7
- Economic stimulus of INR1.7 trillion
- Food security measures for poor
- Direct cash transfers
- Govt. to bear employee provident fund contributions
- Extension of dates for filing financial results
- Accelerated payment of government dues to small / medium industries
- National lockdown
- Monetary
- Fiscal
- Industry
- Healthcare

**Path to recovery**
- “See-saw” recovery
- CRR cut to release INR ~1.4 trillion liquidity
- Repo rate reduced to historical low of 4.4%
- Moratorium on loan payments
- INR 150 billion allocated to augment healthcare
- Government-sponsored insurance cover for all healthcare workers
- 600+ dedicated hospitals, 100K+ isolation beds
- Most likely scenario
- Deeper and pervasive recession, followed by a slower recovery and likely deflation
- Higher public deficit levels due to stimulus programs
- Protracted weak demand and global value chain disruptions
- Higher capital outflows and currency depreciation

# Multiple sources: Oxford, Bloomberg, Reuters & RBI.
### Sectoral Impact of the Crisis

The impact of the crisis on various industries can be categorized as follows:

<table>
<thead>
<tr>
<th>Categories affected by COVID-19</th>
<th>Banking, financial services &amp; insurance</th>
<th>Energy &amp; resources</th>
<th>Healthcare &amp; life sciences</th>
<th>High Tech &amp; telecommunications</th>
<th>Media &amp; entertainment</th>
<th>Public sector</th>
<th>Retail</th>
<th>Advanced manufacturing</th>
<th>Mobility</th>
<th>Education</th>
<th>Non-profits</th>
<th>Travel &amp; transportation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workforce</td>
<td><img src="minor.png" alt="Minor" /></td>
<td><img src="moderate.png" alt="Moderate" /></td>
<td><img src="significant.png" alt="Significant" /></td>
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<td><img src="minor.png" alt="Minor" /></td>
<td><img src="moderate.png" alt="Moderate" /></td>
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<tr>
<td>Operations</td>
<td><img src="minor.png" alt="Minor" /></td>
<td><img src="moderate.png" alt="Moderate" /></td>
<td><img src="significant.png" alt="Significant" /></td>
<td><img src="major.png" alt="Major" /></td>
<td><img src="severe.png" alt="Severe" /></td>
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<td><img src="minor.png" alt="Minor" /></td>
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<tr>
<td>Supply chain</td>
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<td>Revenues</td>
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<tr>
<td><strong>Overall assessment</strong></td>
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</table>

Source: Avasant LLC, EY analysis
Prolonged see-saw shaped recovery shall lead to a *new normal* across sectors...

### New normal shall emerge across the economy...

<table>
<thead>
<tr>
<th>Industries</th>
<th>Markets</th>
<th>Societies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industries may experience a step-change in digitalization, flexibilization and resilience considerations</td>
<td>Market roles shall increasingly be based on trust and shared risk</td>
<td>Employee and consumer behavior will change irrevocably</td>
</tr>
</tbody>
</table>

### ...having a cross-sectoral impact

<table>
<thead>
<tr>
<th>Virtualization of customer interactions</th>
<th>Consumers see the benefit of virtual and online service offerings and are likely want to keep it after the pandemic.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reputation and trust</td>
<td>Companies have an increased focus on their reputation and are offering services for free, support their neighborhood or repurpose their production capacities for required goods.</td>
</tr>
<tr>
<td>Sharing resources</td>
<td>Companies are adapting their supply chain and ecosystem to the new challenges, creating new collaborations, alliances and asset-sharing business models that are blurring the boundaries of established industries.</td>
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<tr>
<td>Fluid workforce</td>
<td>The changes to working styles can lead to the transformation of established working models in the long term.</td>
</tr>
<tr>
<td>Supply chain repurposing/adjusting</td>
<td>Companies reassess their supply chain strategies and identify measures to strengthen local/regional supply chains and to reduce assets.</td>
</tr>
<tr>
<td>Infrastructure will become a bottleneck</td>
<td>Logistics are a likely bottleneck impacting global supply chains.</td>
</tr>
<tr>
<td>Digitalization is picking up speed</td>
<td>The pandemic shows the weaknesses of today’s systems, particularly with regard to flexibility, visibility, paperless processes and forecasting capabilities.</td>
</tr>
<tr>
<td>Regulators will continue to becoming more flexible</td>
<td>Regulators became more flexible, adjusting regulation to face new challenges.</td>
</tr>
</tbody>
</table>

*Source: EY Knowledge*
...each sector will need to adapt their response

**Economic scenarios**

- **Scenario 1**
  - Optimistic scenario: V-shaped
  - GDP vs. time
  - Economic scenarios: Optimistic scenario: V-shaped
  - Economic scenarios: Most likely scenario: See-saw
  - Economic scenarios: Pessimistic scenario: L-shaped
  - Low severity, short term implications: E-commerce, pharma, essentials FMCG, etc.
  - Medium severity, medium term to long term implications: Healthcare, education, consumer durables, etc.
  - High severity, long term implications: Travel, energy, real estate, etc.
  - Tactical play, ensure minimal supply disruptions
  - Survive slow-down and prepare for new normal
  - Generate liquidity through massive sell-offs and cost reductions

- **Scenario 2**
  - Focus on growth agenda and gain in market share
  - Defend market share, find new streams of growth, adapt operating model to new normal
  - Plan diversification, innovative operating models

- **Scenario 3**
  - Invest heavily in growth agenda, align cost structures to new normal
  - Defend against competition and create innovative positions, re-invent operating model
  - Plan exit strategies
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On the radar
Challenges for telecom and digital infrastructure companies

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<th>Impact on telecoms sector</th>
</tr>
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<tbody>
<tr>
<td>1. Subscriber addition impacted due to retail store closure</td>
</tr>
<tr>
<td>2. Inaccessibility to offline recharges impact feature phone and rural users</td>
</tr>
<tr>
<td>3. Customer support services under strain</td>
</tr>
<tr>
<td>4. Pressure on telecom networks as data consumption spirals</td>
</tr>
<tr>
<td>5. Low adoption of business collaboration and productivity tools impact remote working</td>
</tr>
<tr>
<td>6. Surge in teleworking increases cyber and data security risks</td>
</tr>
<tr>
<td>7. Telecom and OEM companies exposed to long-term supply side risks</td>
</tr>
<tr>
<td>8. Inability to contain costs to adversely impact net margin and working capital</td>
</tr>
</tbody>
</table>
### Sector developments

#### 1. Customer onboarding
**Impact:** Telcos, DTH, broadband providers

- **Low** - Low
- **High** - High

- No subscriber addition with retail store closure
- Subscriber adds: 3 m (Feb’20); 1.5 m (Mar’20) and Nil (Apr’20)
- e-KYC requires physical visit. Absence of end-to-end digital process impacts customer onboarding
- Fulfilment issues impact installation of DTH and broadband (dongles, modem) connections

- **Questions EY can help answer**
  - How can telcos onboard new customers and navigate KYC challenges?
  - What innovative strategies can be adopted for delivery of essential services like SIMs?
  - How will changes to customer operations drive long-term shifts to digital channels?

#### 2. Offline recharge of prepaid plans
**Impact:** Telcos

- **Low** - Low
- **High** - High

- Telcos dispense 2.2 m recharges daily - 60% offline
- Impacts 250m prepaid users - 150 m feature phone and 100 m smartphone users without payment access
- Telcos adopt alternate tie-ups with ATM, pharmacies and grocery stores
- Govt. guidelines permit retail store to partially operate. Physical visits to remain muted amid social distancing

- **Questions EY can help answer**
  - In absence of offline retail recharge points, how will feature phone and rural users recharge?
  - How will changes to plan upgrade and bill payments happen?
  - How can emerging technologies together - at scale and speed - increase customers support?

#### 3. Service management
**Impact:** Telcos, DTH, broadband providers

- **Low** - Low
- **High** - High

- Companies call centers running at reduced capacity - increase lead time to service for query resolution
- Focus on digital self-care tools for recharge, bill payment; chatbots for query resolution
- Significant impact on feature phone users

- **Questions EY can help answer**
  - How do telcos balance customer support on query and complaints with remote workforce?
  - What are the cost benefits of digital service enablement over physical set ups?
  - How will customer experience function look like now?

#### 4. Network operations
**Impact:** Telcos, infra providers (OEMs, tower cos)

- **Low** - Low
- **High** - High

- Surge in demand for home broadband
- Network traffic increased 20%. No short term impact - networks designed to absorb surge in traffic
- Logistical issues impact tower installations and O&M (diesel refill, site inspection)
- 20% of telco workforce in front line (NOC, Site maintenance), Multiple documentation for curfew passes cause delays

- **Questions EY can help answer**
  - How do you manage distributed workforce to ensure uninterrupted services to users?
  - How can digitalization and automation drive network efficiencies?
  - Have telcos identified traffic bottlenecks and adopted prioritization tools to balance network issues?
Client conversations within telecoms

Sector developments

5 Remote working for businesses
Impact: All
- Absence of adequate business collaboration and productivity tools impacting SMEs and start-ups' remote workforce
- Increase enterprise play: Offer unified communication, cloud-based productivity apps, and security-as-a-service
- Remote workforce: Security and access management

6 Cyber security
Impact: All
- Cyber risks - phishing, malware, COVID-19 related ransomware attack, security breaches
- Companies to strengthen cyber resilience:
  - VPN licenses and endpoint security
  - Security Information and Event Management (SIEM)
  - Preferential Access Management (PAM)

7 Supply chain
Impact: Telcos, OEMs, handsets
- High dependence on imports from Asian hubs - mobile components (85%) and telco network gear ($5b-$6b annually)
- High impact on handset industry. Production halts to wipe $2.8b-$4b in revenues
- Long term supply disruption may trigger price hikes

8 Cash conservation and treasury management
Impact: All
- Cash flow management
- Weak cash controls to spill over on priority payments - employees, vendors, and taxes
- Accounting implications - fair value measurement, additional disclosures, forex and treasury management
- Impact of government stimulus, tax and regulatory developments

Questions EY can help answer

5 Is business equipped to handle growing virtual workforce in the current scenario?
6 Do companies have business continuity plans in place?
7 How can companies optimise supply chain to manage inventory risks and ease working capital?
8 What steps can be taken to fast-track cash positions and implement dynamic cash forecasting?
9 What strategies can be taken to reduce cash outgoes?

Source: Media Articles
Impact and outlook for telecom sector

Global impact on the sector

Global telco share performance is less impacted than other sectors

Change in S&P sector index value 03 Feb ’20 to 16 Apr’20

<table>
<thead>
<tr>
<th>Sector</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;P 500 Automobiles</td>
<td>-41.5</td>
</tr>
<tr>
<td>S&amp;P 500 Energy</td>
<td>-41.1</td>
</tr>
<tr>
<td>S&amp;P 500 Financials</td>
<td>-29.4</td>
</tr>
<tr>
<td>S&amp;P 500 Industries</td>
<td>-25.5</td>
</tr>
<tr>
<td>S&amp;P 500 IT Services</td>
<td>-19.5</td>
</tr>
<tr>
<td>S&amp;P 500</td>
<td>-13.8</td>
</tr>
<tr>
<td>S&amp;P 500 Communications services</td>
<td>-12.3</td>
</tr>
<tr>
<td>S&amp;P Consumer Discretionary</td>
<td>-9.3</td>
</tr>
<tr>
<td>S&amp;P 500 Healthcare</td>
<td>-1.2</td>
</tr>
<tr>
<td>S&amp;P 500 Metals &amp; Mining</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Source: S&P CapitalIQ

Impact on India

India mobile services revenue to remain flat

Impact on mobile services revenue growth

<table>
<thead>
<tr>
<th>Market</th>
<th>Pre-COVID FY20 service revenue growth</th>
<th>Revised FY20 service revenue growth</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>(0.4%)</td>
<td>(5.6%)</td>
<td>▼ 5.3 pps</td>
</tr>
<tr>
<td>Thailand</td>
<td>5.3%</td>
<td>2.0%</td>
<td>▼ 3.3 pps</td>
</tr>
<tr>
<td>Singapore</td>
<td>(0.1%)</td>
<td>(2.5%)</td>
<td>▼ 2.5 pps</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1.5%</td>
<td>(0.7%)</td>
<td>▼ 2.2 pps</td>
</tr>
<tr>
<td>Indonesia</td>
<td>6.2%</td>
<td>4.6%</td>
<td>▼ 1.5 pps</td>
</tr>
<tr>
<td>India</td>
<td>17.7%</td>
<td>16.1%</td>
<td>▼ 1.5 pps</td>
</tr>
<tr>
<td>Philippines</td>
<td>8.2%</td>
<td>6.9%</td>
<td>▼ 1.4 pps</td>
</tr>
<tr>
<td>China</td>
<td>3.5%</td>
<td>2.3%</td>
<td>▼ 1.3 pps</td>
</tr>
<tr>
<td>Australia</td>
<td>(3.6%)</td>
<td>(4.4%)</td>
<td>▼ 0.8 pps</td>
</tr>
<tr>
<td>Korea</td>
<td>2.8%</td>
<td>2.6%</td>
<td>▼ 0.1 pps</td>
</tr>
</tbody>
</table>

Source: Credit Suisse

- **Revenues**: Revenue in developed markets to decline 3.4% YoY
- **Decline in international roaming revenues (~6% of billed revenue/year) in tourism-heavy countries**
- **Impact of freebies and waivers offered to B2C subscribers**
- **Decline in global SME ICT spending to impact enterprise revenues**
- **Infrastructure rollouts**: Supply side disruption to slow down 5G and fibre rollouts - reduction in capex. Potential upside in 2021- broadband demand to fast-track roll outs
- **Supply chain**: Global smartphone shipment to decline 3.1% YoY in 2020. Production slow down in Asian manufacturing hubs impact global supply of panels, touch sensors and printed circuit board
- **Network operations**: 10% - 70% spike in network traffic reported. Overall network resilience positive with increased telco focus on traffic management

**Source**: Analysis Mason, ThomsonOne

- **Revenues**: Muted revenue growth as subscriber addition falls
- **Decline in roaming revenues (~2% of mobile service revenue)**
- **Slowdown in migration of 2G voice-only customers to 4G**
- **Financial impact of validity extension to low-income users**
- **Decline in offline recharge of voice and data packs for prepaid users**
- **Digital adoption:**
  - Digital recharge of voice and data plans structurally positive - adoption grew 40% to 55% in past weeks
  - Increased data consumption - online learning, content streaming, video conferencing, remote working
- **Supply chain**: Domestic production slowdown to decline smartphone shipments by 3% Y-o-Y
- **Import challenges persist - 87% of mobile phone components sourced from Asian manufacturing hubs running at low capacity with manpower shortage**
- **Network operations**: Telecom network remain resilient. Network Operations Centers (NOCs), virtual WAR Rooms and 20% of telecom staff on front line activated to ensure uninterrupted services
SWOT analysis for the telecom sector in India

**STRENGTH**
- Large subscriber base (1.1 billion). Limited churn as telcos focus on improving customer experience
- Rise in data consumption - data usage is highest globally at 11 GB per user per month
- Tariff rationalisation in Dec’19 to offset decline in revenues
- Resilient networks, function at 60% - 65% network capacity - well designed to address sudden spike in demand
- Improved market performance - stock price of listed Indian telcos recorded 15%-35% rise in last one month

**WEAKNESS**
- Financial duress - high debt (1.8x sector revenue) and pressure on EDITDA and profit margins
- Slowdown in customer acquisition to impact revenues
- Customer service for feature phone users
- Impact of handset industry slowdown: upward of US$3b production loss due to manufacturing halts; inability to meet demands amid restriction on offline sales
- Piecemeal approach to scale digitalization for internal efficiencies

**OPPORTUNITIES**
- Accelerate digitalization to reduce cost and real-time insights:
  - Service management: Call centre automation, chatbots, self-care
  - Internal processes: Digital HR, finance and tax functions
  - Network virtualisation and move to full cloud environment
  - Accelerate enterprise play: upsell to support remote working of businesses
  - Content partnerships to augment B2C play
  - Focus on new value propositions in healthcare, education, gaming and agriculture

**THREATS**
- Delay in 5G and fiber roll-outs
- High prepaid market - mobile recharge on offline channels
- Cyber vulnerabilities - high risk of data theft and brand damage
- Increased risk of frauds - inadequate controls and changes in processes to support business continuity
- Supply chain volatilities - high import dependence and limited manpower
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Reversing the curve: From Now to Next and Beyond

Time

Performance

Revenues

Cost

EBITDA run rate improving
EBITDA run rate to potentially decline

Pre COVID-19
Now
Immediate 3 months
Next and Beyond
3 -12 months

Growth levers to drive revenues and optimize costs

- Accelerate enterprise play
  - Customise remote working solutions for SMEs
- Enhance B2C play
  - Partnerships for content and gaming
- New revenue streams
  - Platform play for Education, Agriculture and Healthcare
- Advance network services
  - SD WAN, cloud partnerships and UCC

Short term cash conservation
Reduce operating leverage
Drive cost efficiencies

Accelerate receivables and delay payables, intelligently
Migrating from fixed to variable cost model
End-to-end automation/digitalisation on processes
Shift in operating model (e.g. NetCos)

Immediate 3 months
3 -12 months
### Now, Next, Beyond for telecommunications - actions

<table>
<thead>
<tr>
<th>Enterprise focus areas</th>
<th>How is it playing out for the telecoms sector</th>
<th>Now</th>
<th>Next</th>
<th>Beyond</th>
</tr>
</thead>
</table>
| **Customer experience**| - Self-care tools (digital, app, IVR, USSD)  
- Distributed and lean call center operations | - Facilitate secure remote working for SMEs - security, equipment, reliable connectivity  
- Safety protocols for field engineers and increase availability of self-install and troubleshooting  
- Route call centre traffic to self-care (IVR, USSD, social media, app, chatbots) | - Promote recharges and payments on USSD for feature phone users  
- End-to-end digitization of customer onboarding  
- Introduce self-help videos on company websites, social media  
- Launch community care models  
- Make chatbots much more than a 'bridge' to the call center, getting them to work on even complex queries | - Deploy cognitive chatbots and virtual call centre  
- Intelligent and voice enabled kiosks for acquisition, recharge, payments  
- Extend digital and digitally-assisted purchase options while streamlining your product catalogue |
| **New revenue streams**| - Accelerate B2B play | - Tailored solutions for SMEs (VPN bandwidth, collaboration and productivity tools, security)  
- Special tariff plans for consumers working from home; additional data top-up plans  
- Explore newer content partnerships (e.g., age-group or interest-specific)  
- Strengthen cloud partnerships | - B2B - increase play - marketplace  
- B2C play with cloud gaming, eSports, home automation  
- Advanced network services (e.g., SD-WAN) and cloud services  
- Remote interaction (for sales and service delivery for IT/ITES/Professional Services) - UC&C | - Strengthen platform play  
- Partnerships for industry specific solutions - healthcare, education, IoT for Industry 4.0 |
### Network Resilience
- Minimizing network disruption
- Geographic re-distribution of network equipment to meet shift in data demand
- Capacity augmentation
- Shift from HD to SD content streaming to avoid network congestion

<table>
<thead>
<tr>
<th>Enterprise Focus Areas</th>
<th>How is it playing out for the telecoms sector</th>
</tr>
</thead>
</table>
| **Network resilience** | • Explore Intra Circle Roaming (ICR)  
• Augment capacity with cell-on-wheels  
• Overhaul traffic segmentation frameworks  
• Categorize network services and allocate dedicated channels  
• Use analytics to optimize energy usage  
• Allocate additional bandwidth to home networks  
• Revisit field force route planning to optimise tower O&M  
• Ensure fuel and diesel availability for towers on priority basis  
• Engage with local municipality for additional towers/unblock sealed sites |

<table>
<thead>
<tr>
<th></th>
<th>Actions</th>
<th>Immediate 3 months</th>
<th>3 to 6 months</th>
<th>Beyond 6 months</th>
</tr>
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<tbody>
<tr>
<td><strong>Now</strong></td>
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<td><strong>Beyond</strong></td>
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<tr>
<td><strong>Network resilience</strong></td>
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</table>
### Build a resilient enterprise: Now, Next and Beyond for telecommunications - actions

<table>
<thead>
<tr>
<th>Enterprise focus areas</th>
<th>How is it playing out for the telecoms sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talent and workforce</td>
<td>• Embracing remote working &lt;br&gt;• Distributed workforce management</td>
</tr>
<tr>
<td></td>
<td>• Improve communication protocols and employee engagement &lt;br&gt;• Repurpose/ reskill idle employees &lt;br&gt;• Identify gaps and review workforce mix &lt;br&gt;• Minimize personnel on-site</td>
</tr>
<tr>
<td></td>
<td>• Shared field force (partner for managed telecom and whitegoods field service) &lt;br&gt;• Automate network operations and maintenance &lt;br&gt;• Digital training programs for employees</td>
</tr>
<tr>
<td>Strengthening cybersecurity</td>
<td>• Review VPN licenses &lt;br&gt;• Preference Access Management (PAM) &lt;br&gt;• Security Incident and Event Management (SIEM) &lt;br&gt;• IT support and help desk support</td>
</tr>
<tr>
<td></td>
<td>• Desktop-as-a-Service for new joiners &lt;br&gt;• Review and upgrade VPN licenses &lt;br&gt;• Multi-factor Authentication (MFA) &lt;br&gt;• Monitor privileged access &lt;br&gt;• Increase emergency management capabilities &lt;br&gt;• Prepare and deploy security and IT helpdesk &lt;br&gt;• Block emails suspicious emails and spam &lt;br&gt;• Allow remote access to critical IT staff</td>
</tr>
<tr>
<td></td>
<td>• Increase endpoint monitoring &lt;br&gt;• Nextgen identity and access management &lt;br&gt;• Establish second-factor authentication for formerly in-person processes &lt;br&gt;• Enhance cyber monitoring for enterprise assets &lt;br&gt;• Conduct Vulnerability Assessment/ Penetration Testing (VAPT)</td>
</tr>
<tr>
<td></td>
<td>• Enhance chatbot and virtual assistants to resolve employee queries remotely &lt;br&gt;• Implement virtual methods of recruitment - leverage AI, RPA and ML &lt;br&gt;• Reskill to shift to digital (e.g., chatbot conversation design, mixed AI-agent customer interactions)</td>
</tr>
<tr>
<td></td>
<td>• Focus on privacy and trust-by design &lt;br&gt;• Security Information and Event Management Systems (SIEM) for log monitoring &lt;br&gt;• Build or access third party Security Operations Center</td>
</tr>
</tbody>
</table>
# Now, Next, Beyond for telecommunications - actions

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• Prioritize CAPEX investments between 4G and FTTx  
• Optimize OPEX  
• Imbibe cash conscious culture  
• Embrace variabilization of costs  
• Collection – no fixed cost; link to actual collections  
• Bad debt recovery – % of amount recovered  
• Manpower cost – increase variable pay linked to revenue  
• Pass through charges – payments to be settled at net-off basis  
• Re-negotiating contracts with ad-vendors for OOH advertising |
| **Robust IT infrastructure and support** | • Strengthen IT security framework and resilience  
• Analytics to identify pockets of instability in IT and re-engineer staffing models  
• Expedite automation and AI programs (e.g., customer journey mapping, capex planning)  
• Re-engineer engagement models with IT partners for reducing fixed OPEX and through structures that incentivize movement to shared/cloud infrastructure  
• Engage process owners in revised transformation plans  
• Break down silos that are limiting the pace of transformation |

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<tr>
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<th>Immediate 3 months</th>
<th>3 to 6 months</th>
<th>Beyond 6 months</th>
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• Prioritize CAPEX investments between 4G and FTTx  
• Further reduce operating leverage by cost variabilization  
• Utilization based payments  
• Stock options/revenue share instead of fixed rentals  
• Taxes linked to cash based accounting  
• Fast-track implementation of cloud virtual agents and chat bots  
• Centralize shared services (e.g., Network planning and Optimization, NOC) and network functions (e.g., SON, SDN/NFV)  
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**Enterprise focus areas**

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**Now, Next, Beyond**

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Changing narrative: focus on growth levers to drive big shifts

- **Move from digital-first to digital-throughout**
  - Drive AI and automation program more broadly across organization and at far greater speed - network, customer, IT, front desk, back office
  - Digital customer experience: digital channels to self-service and support journeys. Make chatbots much more than a bridge to the call center for complex queries and increases in mixed AI-agent customer interactions
  - Build and evolve capabilities to support new value propositions, e.g., SD-WAN, cloud networking, SD-WAN

- **Revisiting network capex programs, delayed 5G timelines**
  - Network capex deferrals – focus toward enhancing capacity and coverage for 4G
  - Fiber penetration to rise as a result of higher demand for fixed broadband

- **Focus on new revenue streams**
  - Creating new value propositions through technology innovation and cross-industry partnerships
    - Accelerate enterprise play beyond connectivity - business collaboration tools, cloud based productivity tools, security-as-a-service
    - Partnerships with industry verticals - healthcare (remote diagnostics), education (e-learning), entertainment (content and gaming)
    - Enhance consumer offerings to include cloud gaming and new forms of connectivity
    - Leverage emerging technologies - cloud, AI, automation, blockchain and edge computing to deliver new forms of customer engagement

- **Cost efficiencies to gain prominence**
  - Transition from fixed cost to variable cost model to reduce operating leverage (pay-per-use for O&M/AMC, Network utilization based site rentals, retail store redundancies)
  - Automation of business processes for internal efficiencies (e.g., finance, tax, billing and operations)
  - Fundamental shift in market structures (e.g., formation of Netcos)
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