Safeguarding against uncertainties



Bharti Airtel has achieved global success through a culture of innovation and high performance. As we explore new markets, embrace emerging technologies, forge strategic partnerships, and introduce innovative products, we recognise the accompanying risks and uncertainties. At Airtel, our Board and leadership team proactively address potential disruptions to ensure smooth business operations. Our robust risk management framework encompasses strategic, legal, financial, operational, and climatic risks. We employ a rigorous process to identify critical risks across the organisation and develop relevant action plans for mitigation, fostering a reliable and secure business environment.

Responsibility and accountability

Board of Directors

An annual evaluation of the Company's risk management framework is conducted by the Board of Directors along with periodic evaluation and assessment by the Risk Management Committee. The Risk Management Committee formulates a detailed risk management policy and monitors the implementation of the same. The Chief Risk Officer works closely with the Risk Management Committee on an independent basis and conducts a complete review of the risk assessments and associated management action plans. The Board of Directors is the apex body that reviews critical risks and deliberates and approves action plans which can effectively mitigate those risks.

Airtel's Management

The CEOs of Airtel businesses in India and South Asia are responsible for managing the strategic risks that may impact their operations. These risks are generally identified by their Circle teams, the national level leadership and teams from the international operating companies. The management team draws on internal audit reports for the identification of risks and scans internal and external environments to ascertain developments that could pose material risks for the Company. Internal assurance reports are also considered for the identification of key risks.

Operational Teams

The Executive Committees (EC) of Circles in India and operating companies from international operations manage risks at the ground level. The EC has local representation from all functions, including central functions like Finance, SCM, Legal & Regulatory and customer-facing functions, such as Customer Service, Sales & Distribution and Networks. It is the responsibility of the Circle CEO or Country Managing Director to engage functions and partners to manage the risks. They are also responsible for the identification of risks and escalating them to the central teams for agreement on mitigation plans.

Risk Identification Process



Scanning the entire business environment internal and external, for identifying potential risks

Classifying the various risks in terms of probability, impact and nature

Developing objective measurement methodology for

such risks

Fixing accountability of people and positions to implement the mitigating action plans



Agreeing on detailed action plans to manage key risks

Listing and prioritising the key risks to be addressed and managed

Approving resources, including budgets for risk management

Reviewing the progress of action plans, taking stock of gross and net exposures and mandating



Reporting progress to the Board and Audit Committee/Risk Management Committee Reporting on specific

issues to the Audit Committee/Risk Management Committee corrective actions

Regulatory and Political Uncertainties (Legal and Compliance)

Outlook from last year > Emerging

Definition

The Company operates in India, Sri Lanka and 14 African countries. Some of these countries (or regions within countries) are affected by political instability, civil unrest, pandemic and other social tensions. Besides, the political systems in a few countries are also fragile, resulting in regime uncertainties; and hence, the risk of arbitrary action. Such conditions tend to affect the overall business scenario. In addition, regulatory uncertainties and changes, like escalating spectrum prices, subscriber verification norms and penalties, and EMF norms among others are potential risks being faced by the business.

Mitigating actions

As a responsible corporate citizen, the Company engages proactively with key stakeholders in the countries in which it operates; and continuously assesses the impact of the changing political and social scenario. The Company contributes to the socio-economic growth of the countries in its area of operation through high-quality services to its customers, improved connectivity, providing direct and indirect employment, and contributing to the exchequer.

These activities are covered in detail through its annual Sustainability Report. It also maintains cordial relationships with governments and other stakeholders. The Country MDs and Circle CEOs carry direct accountability for maintaining neutral Government relations. Through its CSR initiatives (Bharti Foundation etc.), it contributes to the social and economic development of the community, especially in the field of education.

The Company actively works with industry bodies like the Cellular Operators Association of India (COAI), Confederation of Indian Industry (CII), Associated Chambers of Commerce of India (ASSOCHAM), GSMA, Internet Service Providers Association of India (ISPAI) and Federation of Indian Chambers of Commerce & Industry (FICCI) on espousing industry issues e.g. penalties, right of way, tower sealing amongst others.

The regulatory team along with legal and network, keep a close watch on compliances with regulations and laws and ensures the operations of the Company are within the prescribed framework and has also implemented business continuity plans wherever required.

Capitals impacted

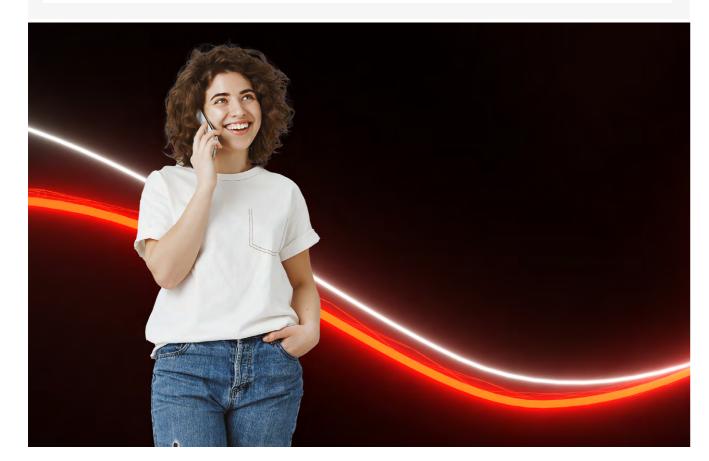






Material issues for Airtel

- Regulatory compliance
- Corporate governance & business ethics



Economic Uncertainties (Operational)

Outlook from last year > Emerging

Definition

The Company's strategy is to focus on growth opportunities in emerging and developing markets. These markets are characterised by low to medium mobile penetration, low internet penetration and relatively lower per capita incomes, thus offering more growth potential. However, these markets fall under countries which are more prone to economic uncertainties, such as capital controls, inflation, interest rates and currency fluctuations. Since the Company has borrowed in foreign currencies, and many loans are carrying floating interest terms, it is exposed to market risks, which might impact its earnings and cash flow. These countries are also affected by economic downturns, primarily due to commodity price fluctuations, reduced financial aid, capital inflows and remittances. Slowing down of economic growth tends to affect consumer spending and might cause a slowdown in the telecom sector.

In the greater part of the previous year, there have been also some challenges in the global supply chain market due to geopolitical tensions, inflationary price pressure, recessionary environment and uncertain disruptions. Ensuring supply security has always been the core of our supply chain strategy.

Mitigating actions

As a global player with a presence across 16 countries, the Company has diversified its risks and opportunities across markets. Its wide service portfolio including voice, data, Airtel Money, Digital Services and value-added services helps widen its customer base.

To mitigate currency risks, the Company follows a prudent risk management policy, including hedging mechanisms to protect the cash flows. A prudent cash management policy ensures that surplus cash is up-streamed regularly to minimise the risks of blockages at times of capital controls. It has specifically renegotiated many foreign currency-denominated operating expenditure and capex contracts in Africa and converted them to local currency, thereby reducing foreign currency exposure.

To mitigate interest rate risks, the Company is further spreading its debt profile across local and overseas sources of funds and creating natural hedges. It also enters interest rate swaps to reduce the interest rate fluctuation risk.

To mitigate supply chain risks, the Company had implemented various digital systems and processes to ensure any disorder in the Global supply can be timely addressed and jointly mitigated with our partners. In addition, the Company also developed an ecosystem of suppliers, where the majority of our partners are now manufacturing indigenously. The Company's Supply Chain strategy aims at ensuring optimum and timely supplies through innovation and process simplification in order to develop a sustainable supply chain network.

The Company adopts a pricing strategy that is based on principles of mark-to-market, profitability and affordability, which ensures that the margins are protected at times of inflation, and market shares at times of market contraction.

Capitals impacted



Material issues for Airtel

Regulatory compliance

Poor quality of networks and information technology including redundancies and disaster recoveries (Operational)

Outlook from last year > Stable

Definition

The Company's operations and assets are spread across wide geographies. Telecom networks are subject to risks of technical failures, partner failures, human errors, willful acts or natural disasters. Equipment delays and failures, spare shortages, energy or fuel shortages, software errors, fiber cuts, lack of redundancy paths, weak disaster recovery fallback, and partner staff absenteeism, among others, are a few examples of how network failures happen. This risk may have negative financial implications. The Company's IT systems are critical to run the customer-facing and market-facing operations, besides running internal systems. In many geographies or states, the quality of last-mile IT connectivity is sometimes erratic or unreliable, which affects the delivery of services e.g. recharges, customer queries, distributor servicing, customer activation and billing, among others. In several developing countries, the quality of IT staff is not adequate, leading to instances of failures of IT systems and/or delays in recoveries. The systems landscape is ever-changing due to newer versions, upgrades and 'patches' for innovations, and price changes, among others. Hence the dependence on IT staff for the turnaround of such projects is huge.

Mitigating actions

The Company has a state-of-the-art Network Operations Centre for both India as well as Africa to monitor real-time network activity and to take proactive and immediate action to ensure maximum uptime of the network.

Network Planning is increasingly being done in-house, to ensure that intellectual control on architecture is retained within the Company. It continuously seeks to address issues (congestion, indoor coverage, call drops, modernisation and upgrade of data speeds, among others) to ensure a better quality of the network. Recent efforts also include the transformation of microwave transmission, fiber networks, secondary rings/links and submarine cable networks. The Company consistently eliminates systemic congestion in the network and removes causes of technical failures through a quality improvement program, as well as embedding redundancies and carrying out internal checks to ensure all preventive and corrective actions as per process are in place to ensure Network availability and quality to end users.

Tighter SLAs are reinforced upon network partners for their delivery. The Company's Network Team performance is measured based on network stability, customer experience

and competitor benchmarking. The Company follows a conservative insurance cover policy that provides a value cover, equal to the replacement values of assets against risks, such as fire, floods and other natural disasters. Disaster management guidelines have been shared with all stakeholders to ensure all actions are in place covering identification of risk, preparedness for the disaster, resource allocation, emergency response & reporting, and disaster recovery. The Network Recovery Plan (NRP) is being followed by all circles as per the BCP guidelines.

The Company's philosophy is to share infrastructure with other operators and enter into SLA-based outsourcing arrangements. We have been proactively seeking sharing relationships on towers, fiber, VSAT, data centers and other infrastructure. The disposal of towers in Africa to independent and well-established tower companies and long-term lease arrangements with them will ensure the high quality of assets and maintenance on the passive infrastructure. The Company has put in place redundancy plans for power outages, fiber cuts, VSAT breakdowns, and so on, through appropriate backups such as generators, and secondary links, among others. Similar approaches are deployed for IT hardware and software capacities, and internal IT architecture teams continuously reassess the effectiveness of IT systems.

Operational processes such as alarm management, preventive maintenance and acceptance testing are being constantly automated with a vision to move towards zerotouch operations. The Company works with its partners to enhance network availability and reduce failures. Spare management and repair processes are streamlined to ensure no spare shortages.

Continuous removal of a Single Point of Failure (SPOF) on fiber routes and equipment level is being done. To improve transport resiliency, BSC, core nodes interconnectivity and signalling links are being shifted on the MPLS network.

In-house-developed workforce management tool now supports field and NOC teams across LOBs to enhance productivity and seamless flow of information to solve customer-impacting issues proactively and reactively.

Airtel continues to work towards climate-proofing the infrastructure by building geographical redundancies and resilience, multiple fiber paths for critical sites, and strengthening tower infrastructure in cyclone and floodprone regions.

Fiercely competitive battleground (Operational)

Outlook from last year > Stable

Definition

The mobile market remains competitive and price sensitive. Delivering a strong network experience at affordable rates remains core to winning in the market. Rollout of 5G services started in the second half of the year. While the eco-system is in the early stages of development, our key competition has started to offer unlimited 5G Data as a welcome offer to the customers. The intense competition to acquire customers is leading to large amounts of money being spent on MNP acquisition programmes. This is expected to intensify with an increasing focus on winning a share of 5G phones.

Mitigating actions

Our ongoing efforts toward product simplification have led to us finally becoming a Truly Unlimited Network. We successfully shut down all per-minute charging tariff products & our revised ladder now offers unlimited calling on all products for our customers.

Airtel has always been a staunch proponent of sustainable and healthy business growth, while at the same time ensuring its customers get best-in-class products and services. To aid this, we launched multiple new data products – helping drive higher customer engagement

We have also doubled down on bridging the rural coverage gap compared to our peers and have kickstarted a large-scale rural rollout programme. This allows us to offer every customer the option to enjoy our best-in-class network coverage.

On the 5G front, we were the first operators to launch last year. To ensure we gained a disproportionate share of 5G customers, we have launched an unlimited 5G offer on the Airtel Thanks app. With this, customers can now experience ultrafast, reliable and secure 5G Plus services without having to worry about data exhaustion.

Capitals impacted







Material issues for Airtel

Corporate governance and business ethics

Increase in cost structures ahead of revenues thereby impacting liquidity (Operational/Strategic)

Outlook from last year > Stable

Definition

Across markets, cost structures have been increasing both from volumes (new sites rollouts, capacity) and/or rate increases (inflation, foreign exchange impacts, wage hikes, energy, etc.). This puts pressure margins and cash flows thereby leading to debt burden (leverage). Increased investment in the network to ensure the quality of service, continued spending on distribution and maintaining world-class customer service are expected to sustain.

Mitigating actions

The Company has institutionalised the War on Waste (WOW) programme, an enterprise-wide cost-reduction program. This has been rolled out across all functions, business units and countries. All functions/business units/countries are targeting cost reductions and cost efficiencies. The Company continues to focus on capex optimisation through various programmes like tower sharing and fiber sharing through IRU or co-build.

Digitisation and automation with significant programmes on self-care, paper less acquisition, e-bill penetration, online recharges, indoor to outdoor conversion and digital customer interactions are continuously monitored through our WoW initiatives.

The Company has progressively managed to keep debt levels at acceptable levels.

Capitals impacted









Material issues for Airtel

Network quality, expansion and satisfaction

Capitals impacted









Material issues for Airtel

Corporate governance and business ethics

Data Loss Prevention (Operational)

Outlook from last year > Stable

Definition

Personal data is any information relating to a customer, whether it relates to their private, professional, or public life. In the online environment, where vast amounts of personal data are shared and transferred around the globe instantaneously, it is increasingly difficult for people to maintain control of their personal information. This is where data protection comes in.

Data protection refers to the practices, safeguards, and binding rules put in place to protect your personal information and ensure that you remain in control of it. In short, you should be able to decide whether or not you want to share some information, who has access to it, for how long, for what reason, and be able to modify some of this information, and more. Data protection must strike a balance between individual privacy rights, while still allowing data to be used for business purposes, whilst adhering to data privacy norms and regulations.

Efforts to update regulations regarding privacy and personal data protection are underway in several countries and regions, most notably the European Union, which has introduced the General Data Protection Regulation (GDPR) package. Within India a data privacy bill has been proposed that regulates how customer data can be used and how it should be protected; Airtel has already initiated multiple activities towards achieving compliance with this bill; this is to ensure that, as and when the bill becomes a law, Airtel is fully complaint.

Mitigating actions

The customer base of Bharti Airtel Limited has been expanding at a tremendous rate. We also collect and process a large amount of personal information belonging to employees, temporary staff and third-party personnel. This, coupled with the introduction of new innovative value-added services, has led to an increase in the personal information handled by Airtel. We are committed to ensuring that the privacy of personal information is maintained during its entire lifecycle, through the implementation of stringent processes and relevant technologies.

Bharti Airtel Information Privacy Policy (BIPP) is in alignment with the Information Technology (IT) Rules 2011 and best practices of the industry and GDPR. Airtel's privacy policy provides management direction and support to ensure the privacy of personal information collected by Airtel, in order to allow collection, processing, retention, dissemination and destruction of the personal information in accordance with the appropriate laws, regulations and contractual obligations.

BIPP is applicable to all employees of Airtel and all third parties (including strategic partners) of Airtel who have access to the personal information of customers, employees and vendors. It is also applicable across all business functions of Airtel and across all geographies of Airtel in India including Airtel Centre, all circles and other Airtel locations.

Data leakage protection (DLP) is a strategy for making sure that those in possession of sensitive information do not advertently or inadvertently share that information outside the virtual boundaries of the corporate network. The term is also used to describe software products that help organisations control what data end users can transfer. The data leakage strategy at Airtel has been designed to protect information at their most vulnerable points, i.e. at the endpoint, at the web layer, and at the email layer.

All Airtel endpoints are equipped with specialised software. This software helps monitor various channels for potential data leakage. Should a potential violation be detected, an alert is generated, and the incident is investigated. Similar solutions are deployed on the email gateway and web gateway, to monitor emails and internet-bound traffic respectively. A centralised monitoring team reviews the alerts and raises an incident for investigation and resulting action. All incidents are tracked to closure in a time-bound manner. Additionally, a monthly review of all incidents and their closure is conducted, to enable the organisation to regularly refine the existing policies. Airtel continuously evaluates the data protection landscape for new and innovative technologies to further enhance its data security posture. This risk may impose negative financial implications for Airtel.

Capitals impacted









Material issues for Airtel

- Information security
- Customer data privacy

Inability to provide high quality network experience with exponential growth in data demand (Strategic)

Outlook from last year > Stable

Definition

In order to keep pace with rising data demand of customers and to ensure competitive parity traffic, telecom companies will be required to invest heavily in building data capacities and broadband coverage expansion. Operators are adopting new strategies to provide unlimited voice and significant data benefits to customers. Additionally, today's customers are looking at seamless mobile internet experience and technology agnostic.

Mitigating actions

Airtel has launched 5G in NSA mode in 3,500 MHz in 28,000 sites across 700+ towns across the country within 6 months of allocation of spectrum. This is one of the fastest 5G rollouts in the world. Airtel also has sub-Ghz spectrum pan-India to enable deeper indoor penetration and cover a larger population footprint than ever before. Spectrum addition in 1,800, 2,100 and 2,300 bands will help mitigate the capacity needs due to ever-increasing data consumption, resulting in a much better-improved experience. Airtel added an additional 35,500 new 4G sites to expand its footprint and strengthen coverage in rural and urban areas. This is a step towards providing better experience to our customers.

Airtel added capacity in the network for fulfilling customer needs due to increased data consumption expected with

the 5G launch and 4G Data Growth. Various tools like the addition of TDD, L2100, Twin Beams, m-MIMO, and Spectrum addition were used for enhancing the capacity. Airtel is continuing to step up backhaul readiness and capacities on sites with increased fiber-isation and capacity expansion of transmission backbone and internet to cater to additional data load.

Airtel has been investing in digitisation of its operations using automation and machine learning practices. This would help us in improved customer experience through faster resolution of the complaints and queries along with bringing in efficiency in the network. Airtel has developed a state-ofart in-house tool 'Airtel Self Optimisation Network (A-SON) to predict degradation and proactively makes changes in the network to enhance customer experience greatly. Airtel is the proud recipient of 'Innovative Mobile Service and Application Award' at the prestigious GTI Awards 2023 Global TD-LTE Initiative (GTI) for our in-house platform, Vision - a unified customer analytics and self-healing platform. This award reinforces Airtel's exceptional contribution towards creating innovative and impactful solutions and ensuring our teams are able to deliver seamless experiences towards our consumers. Airtel has been accelerating the broadband rollout (Fiber to Home) in multiple cities across India through the LCO model bolstered with our own rollouts.

Capitals impacted







Material issues for Airtel

- Innovation in product and services
- Enhancing customer experience and satisfaction

Gaps in internal controls (financial and non-financial) (Operational)

Outlook from last year > Stable

Definition

The Company serves its customers with extensive load due to voice networks and huge data carried on wireless networks. Gaps in internal controls and/or process compliances not only lead to wastages, fraud and losses. but can also adversely impact the Airtel brand. Also, any gaps in compliance with laws, regulations or contractual obligations may lead to penal consequences, work disruption or reputational damage.

Mitigating actions

The Company's business philosophy is to ensure compliance with all accounting, legal and regulatory requirements proactively. Compliance is monitored meticulously at all stages of operation. Substantial investments in IT systems and automated workflow processes help minimise human errors.

Capitals impacted













Besides internal audits, the Company also has a process of self-validation of several checklists and compliances as well as a 'maker-checker' division of duties to identify and rectify deviations early enough. The Company has implemented a 'Compliance Tool' that tracks and provides a comprehensive list of all the external compliances that the Company needs to abide by, function-wise. The Compliance Tool's ownership lies with the head of the respective function with oversight by the Legal team to ensure compliance.

The Company has Internal Financial Controls and the Corporate Audit Group has tested such controls. The Audit Group has asserted that the Company has in place adequate tools, procedures and policies, ensuring orderly and efficient conduct of its business, including adherence to the Company's policies, safeguarding of its assets, prevention and detection of frauds and errors, accuracy and completeness of accounting records, and timely preparation of reliable financial information.

Material issues for Airtel

Corporate governance and business ethics

Lack of Digitisation and Innovations (Strategic)

Outlook from last year > Emerging

Definition

Digitisation is reshaping the telecom sector and will be a key driver for innovation within the Company as companies compete in a digital ecosystem away from a pure connectivity-based environment. Further evolving technologies result in changes in customer value propositions. Digital content and apps have now become the favourites for mobile customers. Digital Mobile money technologies, innovative mobile apps, Cloud, M2M, SaaS and other technology-based SAS products are also evolving. Such rapid technological evolution may impact the functionality of existing assets and accelerate obsolescence. Keeping pace with changing customer expectations is a big agenda for the telecom sector. Lack of digitisation of internal business processes may render the Company unable in turn to respond to customer needs. Rapidly evolving technologies like robotics, blockchain, and app automation for internal processes in Customer, Finance, Supply Chain and HR can render the Company slow in decision-making and reacting to new and emerging customer, vendor, and partner expectations.

Mitigating actions

Digitisation for our customers continues to be the prime area of focus, with several digital initiatives being undertaken. 'Digital strategy' for Airtel Business is embedded within 'business strategy' and powered by an agile operating model driving a culture of innovation and agility to respond to changes in the business environment. To achieve purposeful and impact-driven digital

transformation, we have developed the organisational capability to attract, retain and develop talent at par with digital natives to drive digital initiatives with velocity. The digital strategy of Airtel Business has three key pillars:

- Launch of new products with digital-first approach
- Simplify acquisition and experience of customers with Omni channel capabilities
- Make the core of business digital to improve the experience and bring efficiency

To make the customer lifecycle completely digital, Airtel Business is developing self-service and omnichannel capabilities across the value chain. The new product launch is powered by a digital-first approach to ensure consistent experience on all touchpoints. We are driving simplification of 'lead to order' and 'order to cash' cycles to boost conversions and improve service levels by empowering customers with the following initiatives:

- Digital discovery and buy
- Digital-first onboarding and visibility
- Digital payments
- Digital self-serve platform 'Airtel Thanks for Business'

Material issues for Airtel



Capitals impacted











Digital inclusion and enhanced access to ICT

Climate Change (Strategic)

Outlook from last year > Emerging

To counter the changing climatic conditions and re-occurrence of extreme weather events, Airtel's new infrastructure should be designed in such a way that can withstand changing climate conditions. For existing infrastructure, some retrofitting would be required basis field surveys by experts to make it climate resilient. Such infrastructure has the potential to improve the reliability of service provision, increase asset life and protect revenue loss and thus best customer experience.

In recent times, we have been experiencing a series of natural disasters across India, leading to severe impacts not only on livelihoods but also on engineering structures which include Telecommunication Infrastructure.

To mitigate the impact of such plights, especially floods, heavy rainwater logging and cyclones, it is recommended for the reengineering of infrastructure, particularly telecom infrastructure in these areas. Telecommunication plays a pivotal role at each stage of disaster management, from early warning and mitigation to response, and then to post-disaster recovery and rehabilitation.

The above climate-related risks may have negative financial implications. It may translate to the following impacts for Airtel: Infrastructure degradation, affecting service availability and quality, Increase business costs, affecting maintenance and repair operations, contributing to the degradation of telecom infrastructure and posing health and safety risks to personnel.

Mitigating actions

Flood-prone areas design criteria

- New lean tower design with EPF at 3m/5m considering heavy flooding of areas near riverbank or dam discharge stream
- Equipment to be preferably at higher altitude areas to avoid inundation of water.
- The plinth should be kept high in coastal and floodprone areas.
- Plinth height (1-1.5m), To Co partners need to build the site with a plinth depending upon the area and historical data and Data published in the CWC report on the intensity
- Passive infra should be moved from the ground to raised platform in high flood-prone areas.
- Pathway access to passive infra in low-lying areas.
- Active infra should be moved to height more than flood level in flood-prone areas.

Cyclone and wind-prone areas design criteria

- Towers in cyclone-prone areas shall be designed adequately to survive the high wind speed to with peak wind speed.
- An adequate factor of safety needs to be considered while designing Telecom infrastructure. Zoning for Wind Load IS 875 Part-III indicates the wind speeds and wind load intensities in various parts of the country based on measured and collected data on wind speeds.
- Periodical checkup and tightening of mechanical parts.

- COW removal, MW removal and unsafe towers from coastal belts and permanent structures to be built.
- RRU's to be installed behind the Base station antenna to reduce wind exposure area.
- Mw of >1.2m dia. should be avoided.
- Mw should be installed with a supporting rod to avoid misalignment.
- Clamp should be crocodile clamp rather than U clamp for improved grip.
- Tower loading in terms of antennas and other equipment loads should be as per the design document.
- Preventive maintenance and health checkups at regular intervals
- For rooftop tower (RTT), the base should be adequately designed to transfer the load of the tower on the RCC grid and further where steel beams are used for the transfer of load, adequate lateral strengthening shall be designed especially for the web region. The building taken on lease shall have proper structural safety and same shall be certified by the structural engineer of the Company.
- To ensure the safety of towers during such disasters the towers should be designed by incorporating the provisions of latest B.I.S. codes of practice governing the design.
- A structural safety certificate should be obtained from a qualified structural engineer.

Capitals impacted





Material issues for Airtel

- Climate change and carbon emissions of telecom infrastructure
- Sustainable supply chain management

