



ITU Workshop on "Telecommunication Service Quality"

Resilience in crisis: Telecoms quality of service in the face of natural disasters



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Maputo: March 5, 2024

tmcel

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Abstract:

This presentation aims to analyse Telecommunication service quality in the face of natural disasters, taking into account the experience of Tmcel as one of Telecom Operators in Mozambique, recalling that in the last 5 years, Mozambique experienced four high ranked cyclones and one Tropical Storm with massive destruction of infrastructure, and the fact that more than 60% of the population lives in low-lying coastal areas.

Also takes as on board on the strategies for enhancing network resilience before, during and after natural disasters.

Introduction

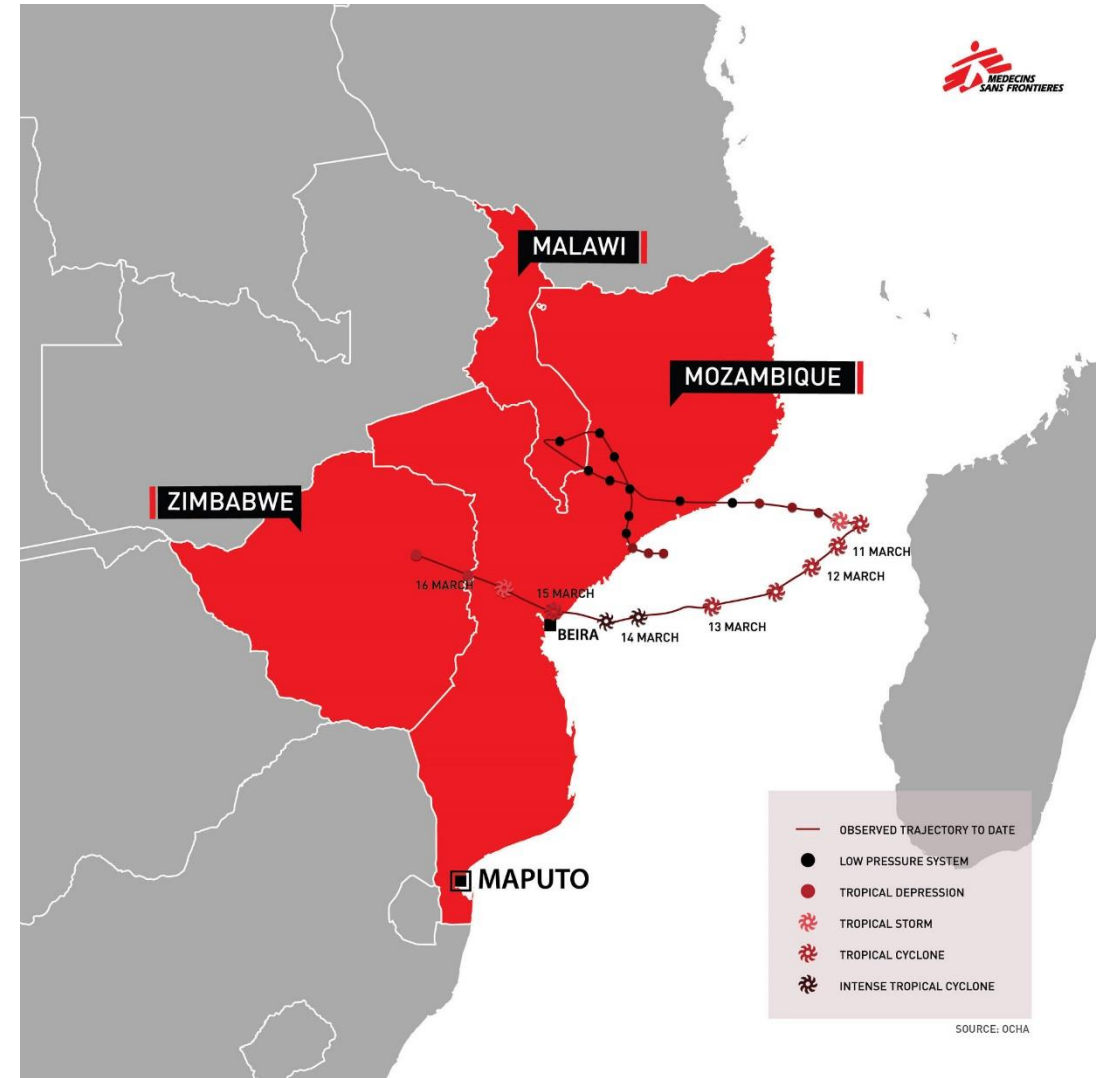
- In the face of natural disasters, Telecom quality of service becomes a critical factor in ensuring effective communication and response.
- This is particularly relevant for Tmcel, Mozambique, where resilience in crisis is a top priority. By enhancing its telecoms infrastructure and implementing robust disaster management protocols, Tmcel greatly minimized disruptions and delivered reliable connectivity when it was needed the most.
- This is despite the fact that the company loses infrastructure worth several millions of dollars on every natural disaster occasion.
- This presentation explores Tmcel's strategies for ensuring telecom quality during natural disasters.

Natural Disasters in Mozambique

Since 2019, Mozambique has faced several natural disasters, namely:

- Cyclone Idai (2019)
- Cyclone Kenneth (2019)
- Tropical Storm Ana (2022)
- Cyclone Tropical Gombe (2022)
- Cyclone Freddy (2023)

These disasters affected all three regions of Mozambique (South, Center and North). However, the Center region is the most affected of all regions and it has a population of more than 10 million.



Cyclone Idai

Source: Doctors Without Borders

Challenges faced by Tmcel

During these disasters, Tmcel encountered various challenges:

- Infrastructure damage: Power, towers, microwave, fibre backbone, buildings
- Lack of access to infrastructure due to flooding and damaged roads and bridges
- Limited resources for repairs and maintenance
- Communication blackouts in affected provinces and those which depend on transmission from affected provinces. For example, fibre cuts in the Center region can cause blackouts in the northern region
- The well-being of Tmcel employees affected by the disaster (injuries, damage to houses, failure to travel to work due to lack of road access etc)



Tmcel Strategies for Enhancing Network Resilience

Tmcel implemented several strategies to prepare and enhance network resilience before, during and after natural disasters. These include:

- Tmcel developed and maintained a comprehensive disaster response plan to quickly address infrastructure damage and restore services. This includes setting up emergency response teams, activating communication protocols, and coordinating with relevant authorities.
- Tmcel established backup power sources to ensure continuous operation during power outages.
- Tmcel has implemented transmission redundancy in most of its backbone transmission routes.
- In case of increased congestion due to capacity outages, network optimization techniques were implemented.
- Tmcel has built strong partnerships with other telecom providers in this case Vodacom and Movitel to share resources and improve response capabilities in times of crisis.

Tmcel Strategies for Enhancing Network Resilience Cont

- Tmcel regularly provides specialized training on emergency response procedures to its staff, equipping them with necessary communication tools and equipment, and conducting regular drills and simulations to ensure preparedness.
- Tmcel invested significant resources to swiftly replace infrastructure damaged during natural disasters, ensuring the restoration of vital telecom services to affected areas.

These strategies were bolstered by collaboration with the regulator (INCM), government/municipal agencies, emergency services, telecom operators, businesses, and NGOs. Effective communication protocols and coordination were crucial during these times.



STRATEGY 101

Lessons Learnt by Tmcel

Amidst the challenges posed by natural disasters, Tmcel has gleaned valuable insights that will inform its future strategies. Key lessons learned include:

- **Proactive Planning:** Preparing for potential disasters ahead of time proved essential. Tmcel recognized the importance of having a comprehensive disaster response plan in place, enabling swift and coordinated actions when crises struck.
- **Resource Sharing:** Collaborative efforts with public and private entities highlighted the significance of resource sharing and coordinated efforts. By pooling together expertise, equipment, and manpower, Tmcel was able to effectively mitigate the impact of natural disasters on its telecom infrastructure.
- **Community Engagement:** Engaging with local communities played a crucial role in Tmcel's resilience efforts. By fostering strong relationships and open lines of communication, Tmcel was better equipped to understand the unique needs of each community and tailor its response accordingly.
- **Continuous Improvement:** The dynamic nature of natural disasters necessitates a commitment to continuous improvement. Tmcel remains dedicated to refining its disaster response protocols, investing in cutting-edge technologies, and conducting regular training exercises to ensure readiness for future crises.

Looking ahead, Tmcel is committed to upholding its role as a reliable telecommunications provider, actively contributing to the resilience and recovery of Mozambique's communities in the face of adversity.

Conclusion

- The resilience demonstrated by Tmcel amidst natural disasters underscores the critical importance of robust telecom infrastructure and proactive disaster management protocols.
- As we reflect on the challenges overcome and lessons learned, it is evident that collaboration, innovation, and a steadfast commitment to service are paramount in ensuring continuity during times of crisis.
- Tmcel remains steadfast in its dedication to upholding telecom quality standards, not only for the people of Mozambique but also as a beacon of resilience for the global telecommunications community.
- With ongoing support from our esteemed regulator INCM and organisations like the ITU, we are poised to navigate future challenges with confidence, resilience, and unwavering determination.
- Together, we can continue to strengthen telecom resilience, ensuring that connectivity remains a lifeline for communities in need. ESTAMOS JUNTOS

Thank You