Grant Thornton

INDIAN CHAMBER OF COMMERCE

Theme 2022-23 INDIA 2047

Towards safer roads

Charting a better future

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Foreword
Indian Chamber of Commerce

Dr Rajeev Singh
Director General
Indian Chamber of Commerce

With millions of lives endangered across the globe, road traffic accidents (RTA) rank high amongst the recent trends in pressing social issues. According to the World Health Organisation (WHO), road crashes are said to have taken more than 1.3 million lives and resulted in 50 million injuries annually, most of which could have been prevented with timely rescue and intervention.

India ranks first in the number of deaths caused by road accidents, with an 11% share of accidents globally. A total of 4,12,432 road accidents took place in 2021, claiming a total of 1,53,972 lives and causing injuries to 3,84,448 people, an increase of 12.6% compared to the previous year. The absolute number of fatalities continues to be high, creating a big challenge for us. However, these accidents are amenable to remedial action. Countries such as Iceland, Norway, Sweden, Switzerland and the United Kingdom have outperformed other countries in terms of road safety measures. In this regard, both the Ministry of Road Transportation and Highways (MoRTH) and several corporates in India have taken active remedial measures pertaining to road safety, followed by the implementation of various schemes to improve national road safety.

This report aims to provide an overview of the current road safety scenario in India and the measures taken by the National Highways Authority of India (NHAI) to enhance road safety. It also elaborates on the prevailing schemes and new initiatives undertaken by the concerned regulatory bodies involved with road safety in India. The report brings out the challenges and opportunities with regards to fortifying road safety in India. We hope that this report on road safety will be a useful reference for our readers on developing a pragmatic approach towards reducing road fatalities in India.

Foreword
Grant Thornton Bharat

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India has about 63.73 lakh km[1] of road network – the second largest in the world, with state highways comprising 3%, followed by national highways at around 2%. With the national average fatality rate standing at 4.0, and the top 10 states accounting for around 77% of total road accidents in the country, there is a significant need to enhance road safety from all four aspects — education, engineering, enforcement and emergency care. With India losing approximately 1.5 lakh people to road accidents annually , it is imperative to recognise the roadblocks we primarily face so that essential solutions can be implemented to improve road safety and security.

The recent inauguration of the Centre of Advancement of Road Safety (CARTS), aimed at working on Zero Fatality Corridors and Zero Fatality District programmes, is a welcome step by MoRTH for implementing and monitoring road safety projects across India. CARTS has developed a Severity Index for ranking districts based on road crashes, fatalities and crash severity, aimed at a 50% reduction in road crashes in 100 high-priority districts and 100 highway national corridors in the coming five years. Additionally, MoRTH recently released guidelines focused on incorporating best practices and providing enhanced visibility and intuitive guidance to drivers, aimed at enhancing road safety and ensuring a secure travel experience for drivers nationwide.

The roadmap to safer mobility in India should focus on both prevention of road accidents and promoting a culture of responsible and safe driving. This agenda towards safer mobility requires adequate infrastructure development and updation, enactment and enforcement of stringent road safety laws, standardised testing procedures, comprehensive training courses to improve the competency of drivers (especially for commercial vehicles), stringent vehicle safety standards, efficient emergency response systems and access to prompt medical care, and educating the public about road safety and responsible driving behaviours.

This report focuses on the analysis of accident data in India, measures taken by the NHAI, and how the road safety ecosystem in India can benefit from proactive engagement by all stakeholders, investments in technology, and collaboration with the private sector. This will help implement positive changes at the grassroots level and enable a pragmatic approach towards reducing road accident fatalities in India.

[1] PIB Press release

According to the World Health Organisation (WHO), road crash is one of the leading causes of death globally, with more than 1.3 billion deaths and 50 million injuries. It is the leading cause of death among youth and children aged 5-29.[2] On average, road accidents cost around 3% of a country's Gross Domestic Product (GDP), with 93% of the fatalities occurring in low- and middle-income countries.

Decade of Action for Road Safety 2021-2030

The World Health Organisation and the United Nations have collaborated with the United Nations (UN) Road Safety partners to 'Improve global road safety'. The target of the programme is to prevent 50% of road traffic deaths and injuries by 2030. Over the next decade, there are expected to be 13 million deaths and 500 million injuries on the road, particularly in low and middle-income countries.

The WHO's strategies to control road accidents include strengthening laws, increasing enforcement, redesigning streets, and using data to enhance road and traffic safety. The UN provides a strong legal framework for countries to build domestic legal foundations to contribute to road safety.

Recommended actions include

Multimodal transport and land use planning – With **70%** of the population expected to live in urban settings by **2030**, it is imperative that there is an optimal mix of multimodal transport to ensure safety as well as equitable access

Safe road infrastructure – Must be planned, designed, built and maintained to enable multimodal mobility

Safe vehicles – This should be paramount; vehicle safety should be at the centre of vehicle design

Safe road use – Road traffic laws must be implemented effectively

Effective post-crash response – Appropriate, integrated and coordinated care must be provided

Requirements for implementation

- Financing – Long-term sustainable investment for developing safe road infrastructure
- Legal frameworks – UN road safety legal instruments provide a strong foundation, which can be embedded in domestic legal frameworks
- Speed management – Appropriate speed management impacts both crash likelihood and severity, as well as improves the effectiveness of other safety interventions
- Capacity development – Continuous knowledge development and sharing
- Technology – Vehicle-to-vehicle and vehicle-to-infrastructure intelligence data can contribute to safer and more sustainable mobility
- Focus on low - and middle-income countries – With over 90% of fatalities occurring in low-income countries, proactive emphasis and support from high-income countries can help in combating the critical issue more effectively

Road safety is a shared responsibility - among government, the civil society (NGOs, academia, youth) and the private sector.

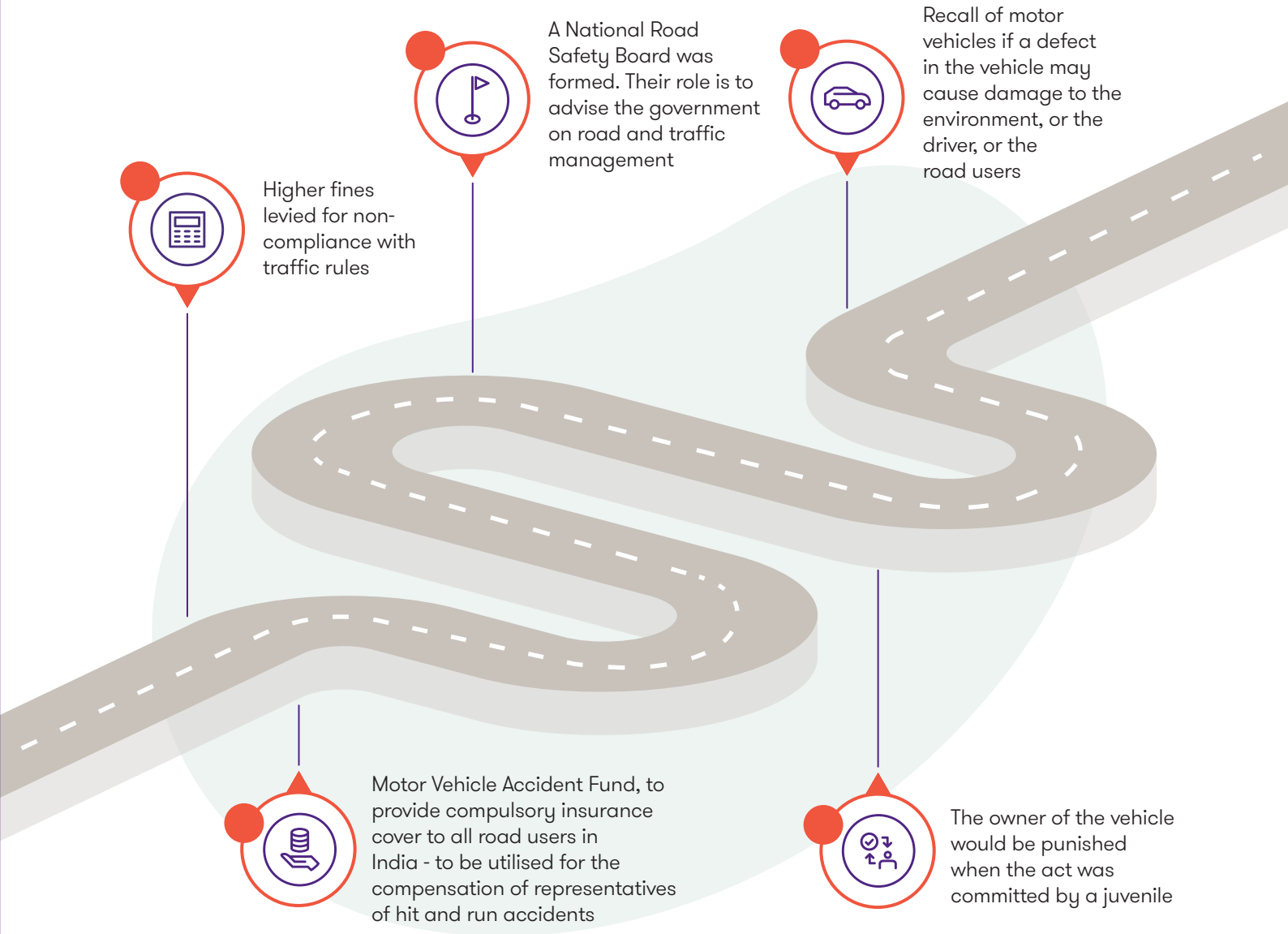
[2] WHO

Road safety in India

India has about 63.73 lakh km[3] of road network, the second largest in the world - with state highways comprising 3%, followed by national highways at 2%. Other roads comprise around 95% of the total road network in India. This expansive transportation network has not only contributed towards the growth of infrastructure but is also responsible for supporting other sectors, mobility of labour, movement of inputs and outputs, etc. Despite the numerous initiatives to enhance road safety, India still ranks first in the number of road accident deaths, with an 11% share in accidents globally.[4]

In 2020, MoRTH recognised road accidents as one of the leading causes of death in the country. India is a signatory to the 'Brasilia Declaration' of 2015, which entailed a commitment towards a target of reducing road accidents by 50% by 2020, further reset to 2030.

The Motor Vehicles Act was amended by the Indian government in 2019. It aimed at enhancing various road safety measures. These measures now include:



[3] PIB Press release
[4] ET

Statistics at a glance

The number of deaths and injuries due to road accidents in 2021 increased by 16.9% and 10.39%, respectively, vis-à-vis 2020.[5]

Total number of road accidents in 2021 increased by 12.6% as compared to the previous year.

The total number of fatal accidents increased from 1,20,806 in 2020 to 1,42,163 in 2021, resulting in an increase of 17.7%. Overall, fatal accidents constituted 34.5% of total accidents during 2021.

In 2021, there were 1,55,622 deaths due to road accidents in India, and 59.7% of fatalities occurred due to over-speeding. In fact, 62% of these accidents were recorded on just 5% stretch of the highways, hinting that preventive measures must be taken to reduce accidents on these stretches.

Road accidents caused injuries to 3,84,448 persons (2021).

Tamil Nadu recorded the highest number of accidents (13.5%) in 2021, followed by Madhya Pradesh at 11.8%.

The highest number of deaths in road accidents were reported on the national highways - 34.5%, followed by state highways at 25.1%.

An accident that results in the death of more than one person is a fatal accident.

Break-up of deaths in road accidents: Vehicle type

45.1% Two-wheelers

18.9% Pedestrians

12.9% Cars taxis and vans

2.0% Buses

21.1% Others

Others include: trucks/lorries, bicycles, auto-rickshaws, other non-motor vehicles, etc.

[5] MoRTH

- National average fatality rate is 4.0. Fatality rate here is defined as road accident fatality per 10,000 vehicles.
- Top 10 states accounted for 77.3% of total road accidents in India.
- During 2021, Sikkim recorded the highest fatality rate (8.7), followed by Bihar (6.8).
- Almost 50% of the Indian states had fatality rates above the national average of 4.0 during 2021.
- Although Maharashtra has the largest road network (6,28,715 km with a 11.6 % share in 2019), it recorded a fatality rate of 3.1, which is lower than the national average.
- Andaman & Nicobar and Manipur are the only two regions which witnessed a y-o-y decline in the number of road accidents: -18.4% and -15.3%, respectively

- Two-wheelers are one of the most popular means of transportation in India and account for the highest number of road accidents.
- The reasons for two-wheeler accidents include poor roads, unsafe (or no) helmets, and a lack of awareness.
- According to the WHO, using helmets could reduce the risk of fatal injuries by 42% and head injuries by 69%.[6]

Break-up of accidents:

71.7%
Over-speeding

5.2%
Driving on the wrong side

1.6%
Use of mobile phone while driving

2.2%
Drunken driving/ consumption of alcohol and drugs

19.3%
Others

[6] WHO
Source – Road Accidents in India, 2021 by MoRTH

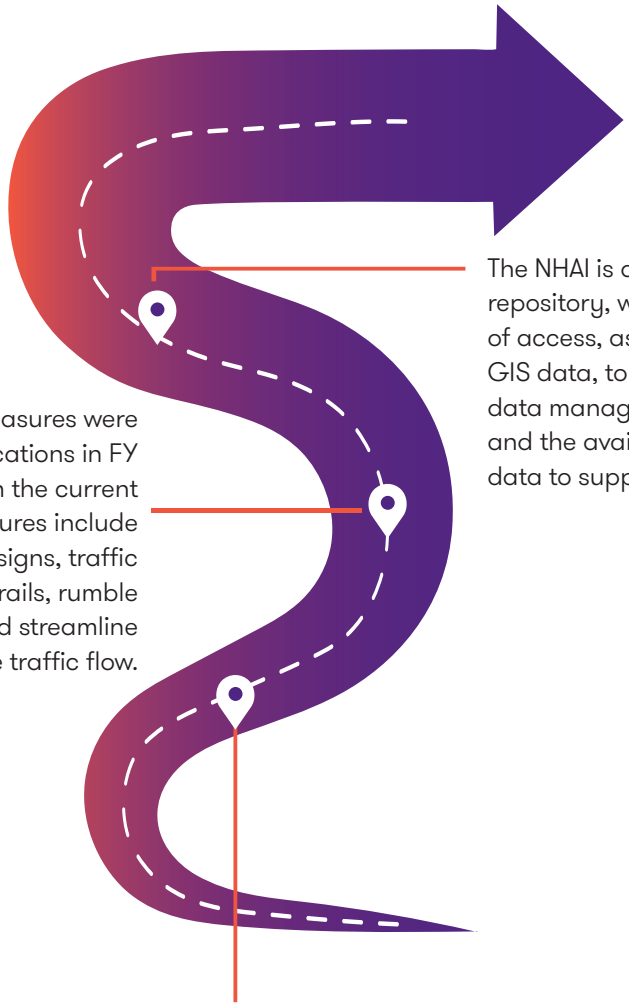
Break-up of accidents: Rural and urban

Rural areas	Urban areas
63%	37%
Total accidents: 2,59,846	Total accidents: 1,52,586

In terms of fatalities, 30.8% fatal accidents were reported in urban areas and 69.2% accidents in rural areas.

- There is a lack of awareness regarding road safety and measures to ensure road safety among the rural population of the country.
- Along with increased awareness, improved road and transportation system is imperative to reduce accident cases in the rural areas.

Measures taken by NHAI to enhance road safety:



The NHAI is developing a GIS repository, which would facilitate ease of access, as well as management of GIS data, to ensure streamlining in data management, data standards and the availability of readily available data to support decision-making.

Safety mitigation measures were undertaken for 6,179 locations in FY 21-22 and 2,015 locations in the current financial year. These measures include installing lights, road signs, traffic barriers, pedestrian guard rails, rumble strips, etc., to regulate and streamline the traffic flow.

NHAI completed the safety audit of the 19,300 km stretch of highways till December 2022 (in FY 22-23). To ensure the implementation of the recommendations, 260 audit safety reports have been shared by the safety consultants, and are monitored for implementation.

Top performing countries in road safety:

1. Iceland

It is the safest country in the world as per the international transport forum. The fatality rate per 1,00,000 population is **1.66**[7]. The country gives immense importance to following road safety laws, such as wearing seatbelt, ensuring children's safety equipment, and no off-road driving.

2. Norway

The fatality rate per 1,00,000 population in Norway is **2.02**. The country adopted a Vision-Zero strategy, which was implemented by addressing 13 priority areas, including driver behaviour, vehicle technology, risk groups, etc. There is target-based progress management, which is followed by targeted safety measures.

3. Sweden

The fatality rate per 1,00,000 population in Sweden is **2.15**. The country adopted a Vision-Zero strategy in 1997, aiming to eliminate deaths or any serious injuries in road accidents. The Swedish Road Administration (SRA) follows an in-depth analysis process to analyse the pattern of accidents, the reasons, and the measures that can be brought about to lower accident risks.

4. Switzerland

The fatality rate (per 1,00,000 population) is **2.18**. The country witnessed a 74% decline in road accidents per 1,00,000 people between 2000 and 2019. Switzerland has implemented a wide range of safety measures since 2013.

5. United Kingdom

The fatality rate (per 1,00,000 population) is **2.70**. Awareness is created at the school level, and innovative practices are introduced to ensure citizen safety on roads. The driving test in the UK keeps evolving as vehicles, technology, and driving conditions change.

[7] International Traffic Safety Data and Analysis Group (IRTAD)

Measures taken to improve national road safety:

To boost awareness around road safety, MoRTH is taking active steps to remedy the issues pertaining to road safety. The Road Safety Cell, Department of Road Transport and Highways, implements the Annual National Road Safety Plan. In order to implement the Road Safety Policy in India effectively, 11 policy statements have been identified that focus on raising awareness, ensuring safer infrastructure, and enforcing safety laws.

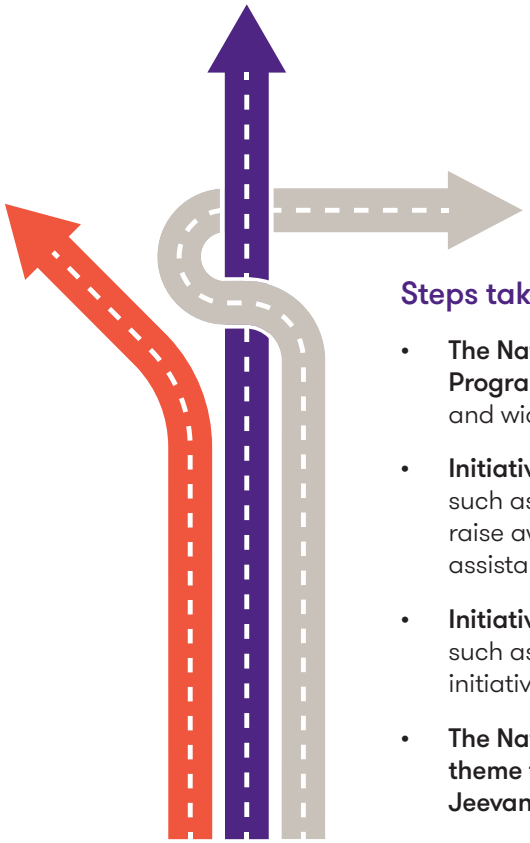
Other than that, various schemes, steps undertaken, and bodies involved in road safety are listed below:

Bodies involved in road safety

- **The Global Road Safety Partnership (GRSP)** works with the Mumbai Traffic Police to strengthen the enforcement of Road Safety rules
- **The Road Safety Patrol (RSP)** programme aims at grooming students in road safety rules
- **The Traffic Warden Scheme,** driven by volunteers, who support the police in traffic management
- **The Motor Vehicles Driving Regulations** lays out regulations for the driving of motor vehicles, and duties towards drivers and riders

Schemes

- **The National Highway Accident Relief Scheme,** to provide funds for catering towards immediate needs for accident victims
- Collaboration with agencies such as the World Bank and the Asian Development Bank
- **Grants-in aid to NGOs** for organising road safety programmes



Steps taken

- **The National Highway Development Programme,** to upgrade, rehabilitate and widen major highways
- **Initiatives by the Road Safety Cell,** such as publicity programmes, to raise awareness, provide financial assistance to NGOs, etc.
- **Initiatives by police departments,** such as the Road Safety Culture initiative
- **The National Road Safety Week; the theme for 2023 'Sadak Suraksha, Jeevan Raksha'**

The government's strategy to enhance road safety - Education, engineering, enforcement, emergency care.

Education

- This entails creating awareness among road users. This is done via NGOs, reports, magazines, electronic media, etc.
- The National Road Safety Week is celebrated every year for spreading awareness and strengthening road safety.
- The Certification Course for Road Safety Auditors has been commenced in the Indian Academy of Highway Engineers.
- Setting up Institutes of Driving Training & Research (IDTRs), Regional Driving Training Centres (RDTCs) and Driving Training Centres (DTCs) at state/district level across the country.

Engineering

Entails road engineering and vehicle engineering

a) Road engineering

- Identifying and rectifying accident-prone spots on national highways.
- Incorporation of road safety at the planning stage.
- Officers of MoRTH involved in the rectification of black spots.
- Guidelines for pedestrian facilities on national highways for persons with disabilities.

b) Vehicle engineering

- Safety standards improved: Airbags, anti-braking system, tyres, crash test, etc.
- Speed limiting devices on all vehicles.

Enforcement

- Motor Vehicles (Amendment) Act, 2019, ensures strict enforcement through technology and strict penalties.
- Issue of guidelines for the protection of good samartians and draft rules as per Motor Vehicle Amendment Act have been published.

Emergency care

- Cashless treatment of victims of the accident during the golden hour.
- National Highways Authority of India: Ambulances at all toll plazas.
- Around 297 ambulances have been upgraded to basic life support.

Challenges and opportunities:

India faces a continuous challenge of lack of adherence to the rules and policies in place, which are largely attributed to negligence from citizens and lack of proactive enforcement by the authorities.

To be able to further the safe mobility agenda, it is pertinent to promote a culture of responsible and safe driving, in addition to supporting initiatives aimed at reducing road accidents, fatalities and injuries.

A few challenges and some opportunities, which can be leveraged to enhance road safety in India, are listed below:

Challenges

Safe road transport system

Carelessness by drivers, congestion caused due to population density-coupled with over speeding leads to unsafe mobility.

Shortage of road and traffic engineers

Identification of relevant resources (such as road traffic engineers) to proactively address road safety and traffic issues, and to increase the frequency of safety audits.

Unavailability of accurate accident data

Central data repository pertinent for root-cause analysis. Gap in using technology for assessing driver behavior to implement effective safety solutions.

Opportunities

Collaboration with private sector

On both fronts - financial investments and becoming active stakeholders in road safety.

Use of technology

Use of advanced analytical tools for identifying patterns, trends and areas that require specific attention. Should continuously monitor and work towards improving driver behaviour through ongoing trainings.

Need for a National Road Safety Index

Consistent ranking mechanism to recognise the overall safety and efficiency, including aspects such as road quality, maintenance of roads, etc.

Highlights of regional road safety initiatives by corporates

Ambuja Cement

Initiative overview

The company started a programme to train and mentor commercial heavy vehicle drivers who worked through the carriers to drive more cautiously and responsibly. The company decided to focus its initial efforts on journey management, vehicle upgrade and driver management. The DMC (Driver Management Centre) was established with trained personnel in order to work on behaviour management and skill improvement. Additionally, it leveraged technology during different phases for the interventions to be successful. Around 21,000 trucks have iVMS (in-vehicle monitoring systems) installed to track driving habits continually. In addition, voice boxes were installed to assist drivers in making prudent judgements by ensuring they receive voice messages in their native language. The company put up transport towers to assimilate data, examine it and produce daily actionable information for each of its site DMCs. Furthermore, since the carriers own the trucks and hire the drivers, including them in this journey was crucial. The project was completed two years before the intended five-year deadline and with zero fatalities.

Challenges faced

Since the transport ecosystem is so widespread in the sector, leading this endeavour was a challenging undertaking. Getting all stakeholders on board was time-consuming.

Key benefits from the initiative

With more than 65,000 trucks on the road year-round, the intervention assisted in raising the driver safety score from 14% to 86%, which has led to zero fatalities over the last two years.

Indian Oil

Initiative overview

Vehicles carrying petroleum products pose extra hazards due to the volatility and flammability of the product.

Since January 2023, a special drive has been undertaken to curb road accidents, focusing on the causes and remedial measures. Extensive training, health check-up, eye check-up, VTS monitoring, etc., were done and the results are visible within six months. Implementing the Driver Recognition scheme played an important role, wherein the best drivers were awarded.

Challenges faced

The main challenge was handling a huge number of drivers and helpers, monitoring each vehicle and the violations, be the route, harsh braking, improper driving, night driving, etc. Technological interventions and qualitative data analysis had to be conducted with utmost accuracy.

Implementing training programmes and ensuring they reached the drivers was an added challenge, which included the development of small modules for drivers and making them aware of the whole process, including defensive driving, simulator-based training, etc, in a short span.

Key benefits from the initiative

The key benefits included fewer accidents and injuries, high morale and better health of the crew, and also better well-being of the drivers, helpers and the society at large.

Bengal Gas Company Limited

Initiative overview

The Petroleum & Natural Gas Regulatory Board (PNGRB) has authorised Bengal Gas Company Limited to undertake the City Gas Distribution (CGD) project to lay, build, operate and expand the CGD network at Kolkata.

Challenges faced

As of date, natural gas is unavailable through the pipeline network/grid near the vicinity of Kolkata GA. It is being transported from Panagarh, Burdwan (a distance of around 180 kilometres), through cascades (bank of cylinders), which involves inherent hazards, logistic issues, and high transportation costs compared to the availability of gas through the pipeline network.

Adequate **safety measures** are in place to address the hazards involved in **road transportation of natural gas**; a few are highlighted below:

1. Cascade cylinders (through which natural gas is transported at very high pressure) are tested periodically as per the PESO guidelines
2. The commercial vehicles carrying cascades are driven by trained drivers having certificates of driving hazardous goods
3. The commercial vehicles are equipped with fire extinguishers
4. The commercial vehicles are equipped with GPS tracking
5. Mutual agreements with peer organisations

Snap-e-Cabs

EV mobility, being the future of all types of mobility across the globe, is evolving daily and is highly dependent on the health of the battery. The company has implemented state-of-the-art IoT services across 100% of vehicles deployed in Kolkata.

Initiative overview

Driving behaviour analysis and scorecard

Driving behaviour is monitored and recorded continuously during the drive time. The driver score is generated based on the following major parameters:

- Harsh acceleration
- Harsh breaking
- Harsh curving
- Over speeding
- Continuous driving
- Night driving
- Route deviations

Challenges faced

The driver partners were rigid in adopting certain monitoring mechanisms to ensure the customers' safety and security.

Key benefits from the initiative

The company has ensured greater safety and assurance for its customers, with proactive monitoring helping to reduce accidents on a month-on-month basis.

There has been no major casualty for any customers or driver partners since the adoption of this initiative (since the company initiated its operations).

Conclusion

Roads are the arteries of our economy. However, road accidents can have a number of negative economic consequences, including lost productivity, medical expenses, and property damage, and therefore, road safety is essential for the country's health, well-being, and economic prosperity. A study by the World Bank Group and Bloomberg Philanthropies shows evidence that reducing road fatalities and injuries over time would lead to a significant increase in economic growth and national income, particularly for developing countries like India.

By continued efforts towards the following 4 Es, India can save lives, improve health and boost the economy:

Education
Enforcement
Engineering
Environment and emergency care of road accident victims

The state and central governments must work together and join hands with the private sector and local communities to strengthen the road safety ecosystem at the grassroots level. Collective approach from all stakeholders towards infrastructure improvement, educating people and pedestrians, stricter law enforcement, leveraging technology, availability of data and better emergency services will help make our roads safer.

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About Indian Chamber of Commerce

Founded in 1925, the Indian Chamber of Commerce (ICC) is the leading and only national chamber of commerce operating from Kolkata, and one of the most proactive and forward-looking chambers in the country today. Its membership spans some of the most prominent and major industrial groups in India.

ICC works closely with various ministries and state governments on policy and industry issues. ICC has hosted sessions with national and global leaders like David Cameron, former PM of United Kingdom, Sheikh Hasina, Prime Minister of Bangladesh, the Prime Minister of Bhutan, the Deputy Prime Minister of Mauritius, Pranab Mukherji, former President of India, the Industry and Commerce Ministers of Thailand, the Industry Minister of Singapore, chief ministers of various states and prominent Indian ministers, including Amit Shah, Piyush Goyal, Nirmala Sitharaman, Nitin Gadkari, Rajnath Singh, Smriti Irani, and several others.

ICC's Northeast Initiative has gained a new momentum and dynamism over the last few years. ICC has a special focus upon India's trade and commerce relations with South and Southeast Asian nations, in sync with India's 'Act East' policy, and has played a key role in building synergies between India and its Asian neighbours through trade and business delegation exchanges, and large investment summits.

ICC also has a very strong focus upon economic research and policy issues. It regularly undertakes macro-economic surveys/studies, prepares state investment climate reports and sector reports, provides necessary policy inputs and budget recommendations to governments at the state and central levels.

ICC's forte is its ability to anticipate the needs of the future, respond to challenges, and prepare the stakeholders in the economy to benefit from these changes and opportunities.

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