

Challenges & Responsibilities

THE ECONOMIC TIMES, THURSDAY, JANUARY 30, 2014

AN INTERNATIONAL ADVERTORIAL & PROMOTIONAL FEATURE



ON THE FAST TRACK OF DEVELOPMENT

Transport infrastructure is one of the most important factors for a country's progress. Although India has a large and diverse transport sector with its own share of challenges, they can be overcome by energy-efficient technologies and customer-focused approach

NAMRATA KOHLI

One cannot overemphasize the importance of transportation than call it the 'lifeline' of a nation. It has been proven by so many instances how transport infrastructure has added speed and efficiency to a country's progress. Good physical connectivity in the urban and rural areas is essential for economic growth. India, the seventh largest nation with over a billion population, has one of the largest transport

sectors. But not one without its own set of challenges.

"Domestic transportation is a key factor for economic growth," agrees Amitabh Kant, CEO, Delhi Mumbai Industrial Corridor (DMIC), "Transportation issues and infrastructural delays affect a nation's progress and India needs much faster and efficient transportation systems."

Take the case of Singapore Metro, so vital for the capital to function as an economic powerhouse.

But some of the big challenges the Metro faces are capacity increase, improved reliability in the system and delivering a more customer-focused approach. It is not just about modernising stations, track and introducing new trains to the Metro; it is also about how intelligently and efficiently the system is run.

In India, there are equal number of challenges and opportunities. Rail experts believe that the rail transport systems are six times more energy-efficient than road and four times more economical. The social costs in terms of environment damage or degradation are significantly lower in rail. Rail construction costs are approximately six times lower than road for comparable levels of traffic. Historically, the Indian railways have played a leading role in carrying passengers and cargo across India's vast territory.

However, today the country's high-density rail corridors face severe capacity constraints. There is a definite need for capacity enhancement, upgradation, creation of new passenger and freight

corridors. Other issues plaguing the rail transport are the differential speeds of trains, inadequate connectivity to ports and mines, inability to carry longer and heavier trains and lower throughput and longer turn-around period.

A senior railway spokesperson reveals that the biggest problem they face is the choking of important routes. The second as he reveals is that of increasing demand of power in India and its shortage. It becomes

RAIL EXPERTS BELIEVE THAT THE RAIL TRANSPORT SYSTEMS ARE SIX TIMES MORE ENERGY-EFFICIENT THAN ROAD AND FOUR TIMES MORE ECONOMICAL

imperative to locate power-efficient technology in Railway systems that will help tackle this problem as well as ecological concerns.

India has taken certain very important decisions to modernise the

rail transport networks - one, by launching the Dedicated Freight Corridor (DFC), an ambitious programme that involves the construction of two corridors- the Eastern Corridor from Ludhiana to Dankuni, covering a length of 1,839 km; and the Western Corridor from Dadri to Jawaharlal Nehru Port, Mumbai, covering 1,499 km for promoting a seamless movement of rail freight traffic.

Second, India is allowing 100 per cent foreign direct investment in new rail sectors such as suburban corridors, high-speed train systems and the freight line projects implemented through public-private partnership. Foreign investors will be allowed to fully own new services in suburban areas, high speed tracks, and connections to ports, mines and power installations.

Finally, the country's last state-controlled industry is open to foreign investors. These measures should lead to eco-friendly, high speed and efficient transport infrastructure leading to the accelerated growth of the country itself.

CUSTOMERS SPEAK

Taiwan High Speed Rail



Toshiba is a member of Taiwan Shinkansen Consortium and one of the leading companies specialized in High Speed Rail Technology, including design, manufacture, supply, installation, integration, commissioning and testing. It has outstanding expertise in all these areas and has delivered high quality products. For more than seven years, the Taiwan High Speed Rail System has continuously maintained very high standards of reliability, punctuality,

efficiency and safety. On this basis, we have not only been able to provide convenient and comfortable travel to our many passengers, but have also been able to continuously improve our maintenance and operation. We expect Toshiba will continue to deliver highly reliable products to THSRC.

Jackson Tseng
Assistant Vice President
Taiwan High Speed Rail
Corporation

Singapore Metro Rail



Toshiba's PMSM Propulsion System was chosen for its high efficiency and proven energy saving system. Having been used for commercial operations on Tokyo Metro's Marunochi, Chiyoda and Ginza lines for more than three years, the PMSM Propulsion System will be installed on two train sets for one to two years of trial running.

The trial run result is expected to achieve 30% reduction in traction energy consumption. We hope Toshiba continues to introduce more energy-saving systems, such as PMSM for use by its customers.

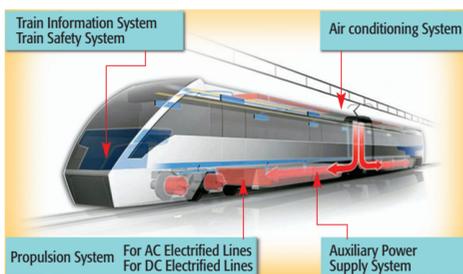
Ng Peng Hoe
Principal Fellow,
SMRT Trains Ltd.

Railway systems for India's growing future

In the next five years, Indian railway market will be the 3rd largest, accounting to 10% of the global market and Metro rail is going to be 70% of the railway market in India. Japanese major Toshiba is keen to tap the opportunity

In India, due to increasing population and economic expansion, the electricity demand and supply balance is skewed. To tackle the situation we need to develop eco-friendly cities with more public transports. This need leads to the expansion of Metro rail network.

Toshiba, with over 115 years of R&D in railway technology, has worked to improve every requirement of railway transportation, such as environment adaptation, safety, punctuality, comfort and reliability. Toshiba can contribute in reducing electricity consumption and greenhouse gas emission by introducing its excellent energy-saving technology as well as solution know-how for railway systems, which will lead to improving the city environment. Toshiba has recently been assigned the contract of Heating, Ventilation and Air Conditioning (HVAC) system for 486 cars for Delhi Metro RS10 project. DMRC



TOSHIBA'S ENERGY-SAVING TECHNOLOGIES FOR ROLLING STOCK SYSTEMS

- ▶ 39% energy-saving with PMSM (Permanent Magnet Synchronous Motor) propulsion system*
- ▶ 30% energy-saving ATO (Automatic Train Operating System)*
- ▶ 16% more efficient and 40% smaller air conditioning system*
- ▶ 30% energy-saving with Toshiba LED*
- ▶ 16% more efficient, 18% smaller and 35% lighter APS (Auxiliary Power Supply) system*

* Compared to Toshiba's conventional systems under certain conditions

(Delhi Metro Rail Corporation attaches much importance to the reduction of life-cycle cost incurred by train

operation and maintenance; that is why Toshiba's inverter-based HVAC system with high efficiency and maintainability has received a good evaluation.

Toshiba, in its commitment for future progress, has consistently achieved technological breakthroughs on the railway systems that shape the future - the freight rail, rolling stock systems, power supply systems and information systems.

The company has a long history of manufacturing electric locomotives (EL) and is the only integrated manufacturer of locomotives in Japan. Over 2000 locomotives equipped with Toshiba's propulsion system are being operated all over the world. This is a prominent number that explains its acceptance in the global market. Toshiba can be a lead contributor to India's potential market for electric locomotives. In fact, under the Dedicated Freight Corridor (DFC) Project, where freight rail lines will be constructed along the Western Corridor from Dadri to Jawaharlal Nehru Port, Mumbai, and the Eastern Corridor from Ludhiana to Dankuni, Toshiba is preparing

for the project and is ready to provide high-performance technology and products.

The company is also a leader of the Taiwan High Speed Rail Project, which is the first instance of a Japanese company exporting a high speed rail system (Bullet Train). Toshiba has integrated and delivered electrical and electronic systems for the high speed rail, including train traffic management system with signaling system, power supply system, communication systems and all electrical equipment for rolling stock. India's high-speed rail projects have also started taking steps forward and Toshiba can play a significant role as a key player with its wide experience in Taiwan.

In India, there are lots of varied new railway projects such as high speed rails, dedicated freight corridors and Metro projects. With its total solution capabilities, Toshiba will make steps with customers and partners in India to contribute in constructing transportation infrastructure, which is indispensable for India's further economic growth and people's better life.

ETC: The answer to seamless highway transportation

India has the 2nd largest road network in the world and the effective utilization of road plays an important role in the nation's progress. The increase in the number of highways across the country increases the number of toll gates and queuing up at each toll gate costs us time. ETC (Electronic Toll Collection) is the most widely used solution around the globe to avoid toll gate congestion. With the installation of a transmitter in your car, the ETC toll gate can automatically read your registered information and allow you to pass

through the toll gate seamlessly without you needing to stop to make cash payment or touch a card. It is a combination of the right facilities with the right management applications that can realize the ideal solution. For over 40 years, Toshiba has been providing stable, advanced yet indispensable highway systems that support 24x7 operations.

Toshiba can integrate ETC system, Central Server system, Toll Gate system and CCH (Central Clearing House) system as one-stop solution provider. Toshiba is working closely



with central and state government agencies for various highway projects to offer their state-of-the-art highway solution systems like ETC systems and Highway Traffic Management system, which can

provide the optimum information for a comfortable drive by acquiring real time traffic data. In near future, Toshiba would like to collaborate with local partners on scope sharing basis including design, supply, commissioning and operations and maintenance of highway solutions.

The company would focus on private concessionaire and state-owned projects. Toshiba is committed to support India realize swift and smooth transportation for its growing future.

DEMONSTRATION VILLAGE

The power situation in India is not something to be proud of. The gap between demand and supply is around 10.5%+ and the demand increases by 6% every year.

Rural people get power only when the urban people or industries do not need it.

A survey of 15 villages in Maharashtra about the electricity condition in rural areas revealed that the location got power for about 16 hours/day. It also revealed that 48% of people were ready to pay more if it helped their children to study at night whereas 34% were ready to pay extra if it helped them live in a better

condition. Toshiba is committed to solve social problems by technology and business. Along with sponsorships and other CSR activities that can be immediate temporary solutions, Toshiba is actually trying to get into the core problems in rural India and create custom solutions by understanding the actual needs of the people. With the reverse innovation approach to develop an economic ecosystem in these rural areas, Toshiba has come up with the concept of Demonstration Villages where power is sourced and utilised within local

community by self-sustainable way. Workshops are executed in villages in different parts of India that have led to some interesting outcomes. Toshiba prides itself for these successful small steps that would lead the way for India's growing future.

LED study light prototype co-created with people of Chikhalgao Village near Dapoli, Maharashtra
Due to absence of desks and chairs at home, lack of enough light and power cuts for about eight hours per day, the students have to sit on the floor putting



the book on their own knees.

Toshiba developed a prototype to fit their lifestyle and solve their problems in coordination with local NGO Lokmanya Public Charitable Trust. **Power Stand Micro Grid, Odisha Biennale**

Festival 2013

Toshiba executed a pilot project at the Odisha Biennale Festival to light up the art works using solar panel. The outcome is used to spread the prototype to rural areas in Odisha where there is need for power self-sustainability.

At Odisha biennale, we wanted to present a programme that challenges traditional thinking and encourages new levels of enthusiasm for innovative and creative expressions. Toshiba supported our thoughts through its expertise in innovation and technology. The solar battery system that lit up the art works has created hope for the rural areas that are in need of such innovations.

—Masako Ono

Masako Ono is a Japanese Odissi and contemporary dancer and Managing Director of Odisha Biennale event held in Bhubaneswar in 2013. It is a global convocation of artists from around the world with diverse dance and art forms. She has lived in India since 1996 and was selected as one of the 100 most respected and outstanding Japanese in the world in their respective fields by the Japanese issue of Newsweek in 2008.

