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TCI
LEADERS IN LOGISTICS



Digitalisation : A Revolution in Logistics



#TechThatTracks



Cover Story

Digitalisation: A Revolution in Logistics

Pandemic has paved the way for innovation in logistics

The driver carrying mission critical logistics truck was much tensed, he had the onerous task of supplying oxygen to a hospital; save life! His speed was as per norms, GPS tracking at control tower demonstrated that there was no harsh breaking. However, the Fatigue Meter readings were not encouraging, the driver was showing signs of restlessness, yawning; a tell-tale sign of NEAR DANGER. The control tower gave a signal to park the vehicle at the designated rest point, rest for an hour then move to the destination.

This is the role technology can play in today's logistics, not only to ensure visibility but save lives!! The role of innovation is clearly visible i.e., Fatigue Meter which read the behaviour of driver. Such innovations and automation got accelerated at an unprecedented level, not witnessed before in the logistics Industry in India and globally.



Digitalisation: Way forward to increase Logistics Efficiency in the New Normal

The Indian logistics sector is valued at USD 215 billion and has been witnessing a CAGR of 10.5% (Source: Outlook India, 2021). Since the pandemic, massive changes in supply chains are being fuelled by digital transformation. The sector has undergone an end-to-end transformation in the last one and a half years – from first-mile delivery and warehousing to handling and last-mile delivery. There has been a

GPS Tracking		Big Data		Analyze
	Fatigue Meter		Last-Mile	
WMS		Control Tower		SDLE
	Visibility		Drones	
Automated vehicles		GHG Calculator		RFID Tags
	SUFC		Sarathi	

significant uptick in the adoption of WMS (warehouse management system), on-demand warehouses/ fulfilment centres, Big Data analytics, self-driving carrier trucks, and the use of automated vehicles and drones in the last mile delivery. The industry has also witnessed the mushrooming of fulfilment/ warehousing aggregators, which provide on-demand, flexible and cost-effective warehousing solutions to businesses on a pay-per-use model.

In the New Normal, from planning to execution, every element of the logistics process is being reconsidered, repurposed and digitized. The sector has been in-step matching the dynamic requirements of the varied customers both small and large scale; and as digitization takes the hold, new technologies and collaborative business models have helped in changing the business landscape, meeting evolving customer expectations and setting new trends.

The government of India has been instrumental in fostering innovation in the logistics segment, and it has launched several initiatives to accelerate digitization across the industry. Some of the recent examples include the launch of SDLE (Secured Document Logistics Exchange) and GHG calculator to enhance logistics efficiency, bring down the overall cost incurred by the industry, and promote multi-modal logistics with a focus on sustainability. Other than that, the government, in association with TERI

(The Energy and Resources Institute), has recently introduced the Sustainable Urban Freight Coalition (SUFC) to facilitate sustainable urban freight solutions that will help achieve India's vision of decarbonisation of the transport and logistics sector by 2030. Other notable initiatives aimed at driving innovation in the industry are Radio-frequency identification (RFID) tags, and process automation applications such as Vahan and Sarathi, among others. Another trend that has emerged during the pandemic is increased automation of in-house operations to reduce manual processes by automating repetitive, time-consuming tasks. When it comes to last-mile delivery, drones, autonomous vehicles, delivery robots are proving to be efficient solutions to logistics disruptions while saving both delivery cost and time. While automated last-mile deliveries are still in their trial/pilot phases, continuous developments in the mobility tech and self-mobility sectors are likely to fast-track their commercialization in the coming years. With



both start-ups and legacy companies bringing new innovations, along with the government sharing the approval for permission-compliant drone operations, we expect more logistics players to incorporate these technologies into their operations.

Similarly, tech-based intervention in the last leg of delivery is the use of GIS-powered devices to ensure on-time deliveries and improving the efficiency of last-mile logistics. Customers do not see the supply chain process before the last mile - they likely only remember how the goods reached their hands.

Further, the spotlight has shifted on analysing customer data using digital analytics, machine learning and chatbots that help to make better decisions using the actionable insights. Companies that are capable of deriving insights from data are likely to invest essentially in their own last-mile solutions, since it is going to be a critical differentiator. Some of the technological developments that have taken place in the industry in recent years are focused on driver safety. Deployment of driver apps with advanced features such as fatigue measuring meters has enabled logistics companies to detect any potential fatigue risks. These technologies are designed with data analytics engines and smart sensors to analyse pertinent data (number of miles covered, stops taken in between) and monitor physical signs of tiredness to send warnings to the driver for taking rest.

Digital Transformation leading to Productivity & Efficiency

Digital transformation has the potential to create a leaner and smarter logistics by ensuring smoother interface among logistics stakeholders for seamless delivery as it enables:

- Extensive use of data analytics to predict the demand and supply.
- Tracing and tracking both. The demand and supply convergence is consequently possible using technology. The final result is – efficient, accurate, and organized mobilization of resources.
- Accountability with transparency.
- Digitization has added economic value to the entire supply chain.

Technology at TCI

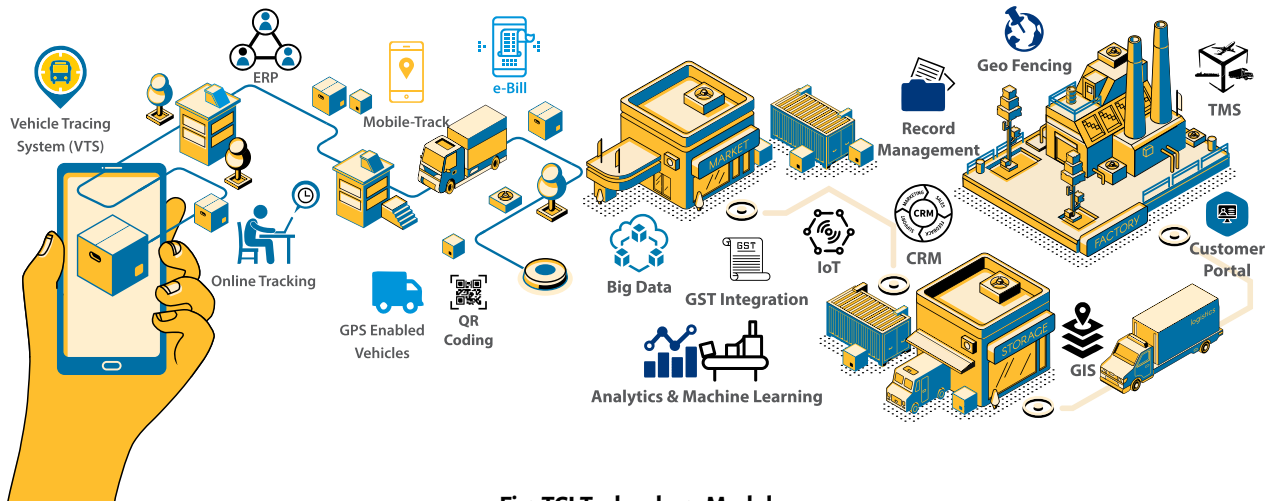


Fig: TCI Technology Model

TCI has been investing in technology on the logistics front, including complete warehouse automation and robust digitization. Today, the Company is undergoing a complete digital transformation. TCI already has advanced GPS tracking of the vehicle, real-time tracking system is enabled through mobile application, and Operation Command Center (OCC) where hubs are monitored by team located at the centralized location.

The TCI Customer application provides increased visibility to customers, as to the current status of their cargo movements, in real-time, no matter where they are. It helps them track and coordinate the delivery of their shipments with greater ease and convenience. Customers can send order requests, report a claim, pay their dues online and of course, track their shipments in real-time thus enabling them to track time-sensitive shipments and adapt their planning, where necessary. In an age of real-time information availability, finger-tip convenience is a must for all customers. Customers can also access information and get in touch via various other platforms such as the chatbot, websites and the social media.

Technology adoption in the ‘New Normal’

Please click on the image to watch the video




It is important for logistics and supply chain players to be proactive, identify potentially disruptive changes at an early stage and implement the right technologies into their business to fulfill customer expectations and excel as an industry.



Case Study

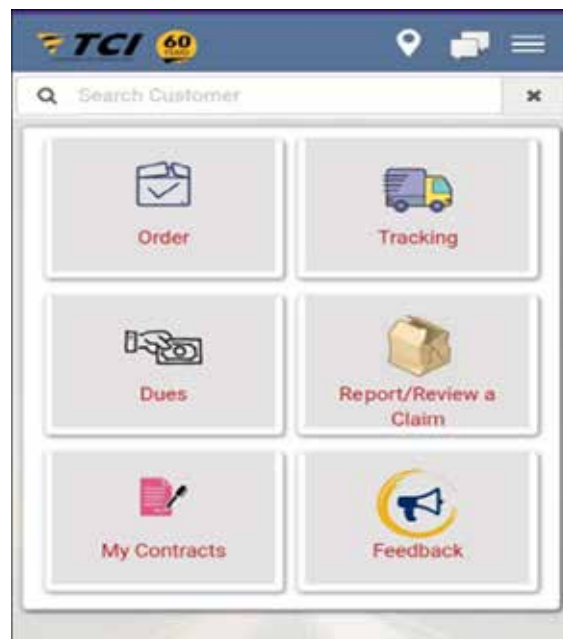
TCI Customer App



TCI Customer 
Transport Corporation Of India Limited
★★★★★ 5.0 + 3 Ratings
Free

app in 2019 to enable our customers perform all important functions like – tracking a consignment, booking a consignment, communicating with our chatbot to resolve queries in just a few clicks. Hence, saving time, improving efficiency and eliminating offline constraints.

Since the very beginning, TCI has always abided by the value of treating customer as the ultimate king and making his experience with us better, not just in terms of business we do but also in relationships we build. Taking it a step further with technology, we launched our customer

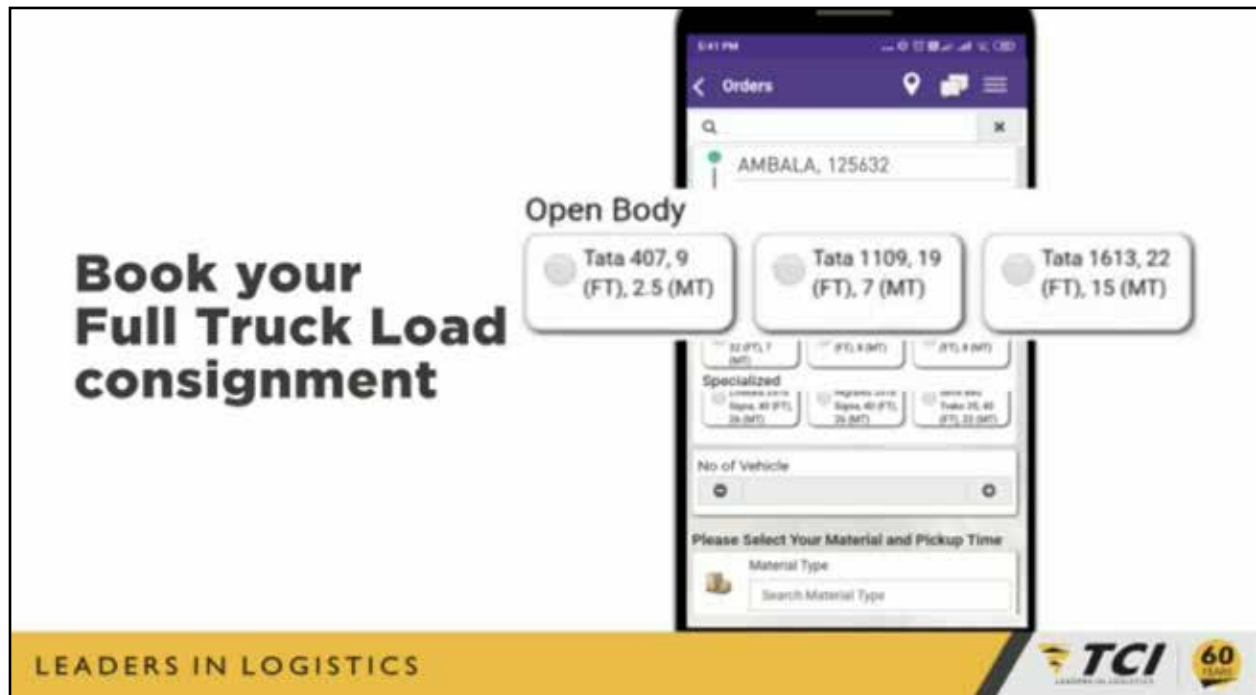


The mobile application includes Registration, Services, Enquiry, and consignee app. Following are some of the features:

1. Orders:

- Place a Pickup Request
- Open Order Status
- Negotiations
- Cancel Order
- Pickup Schedule (Xls,EDI)

Please click on the below image to watch how you can book your consignment online using TCI Customer App



2. Track & Trace:

- CNS Tracking
- GPS Tracking
- Vehicle Tracking

Please click on the below image to watch how you can track your shipment



3. Tools:

- Auto MIS/emailer
- EDI Integration
- Customized Bills
- Digitally Signed eBills
- ePOD

From placement to delivery and billing, every process can be performed and tracked online through our Customer App:



Placement

- » Vehicle Availability
- » Vendor Bidding
- » IBL Pickup Sheet
- » Auto Vanning
- » Driver app



Pickup

- » eWaybill Verification
- » CNS Entry – Mobile, against order
- » Load VIN Data
- » VIN Scan
- » Auto CNS Gen.



Dispatch

- » Open LHC
- » Challan Against CNS
- » Driver SIM Tracking
- » Auto Challan against vehicle with LHC/TEV
- » eWayBill Part B Update



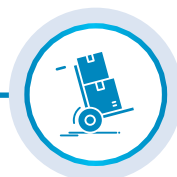
Visibility & Alerts

- » Non Placement Report
- » IBL Dashboard



Intimation

- » Auto Mailer for in Transit Shipments
- » SMS On Arrival
- » Consignee APP



Delivery

- » E-POD
- » IOD
- » IOA



Billing

- » Centralized Billing
- » Auto email Digital eBill



Corporate News

Mr. Vineet Agarwal, MD – TCI shared his insights on the future of India's transportation ecosystem with Cargo Talk

TECH TALK

therefore focus on the research, development, manufacturing and scaling of more novel chemistries and build apt use cases around the same. With that approach, our country can achieve global leadership in multiple niche applications, and the manufacturing of batteries deployed in such cases is also supported in governmental policy."

Expounding further on the government policies, Agarwal says, "The government has undertaken multiple initiatives to remove these obstacles, and the recent amendments in FAME II will further promote the manufacturing and adoption of electric vehicles in India. Both EV manufacturers (including OEMs) and customers stand to immensely benefit from the revised FAME II, which aims to lower the purchasing cost for EVs by 10-15

✈ Despite the remarkable growth that the EV industry has witnessed in recent years, there are not enough charging stations, and most of them are located in the metros ✈

— Vineet Agarwal

per cent through increased subsidies. In addition to demand incentives, the policy changes will bolster India's efforts to develop a robust EV charging station network. The commercial EV segment, will receive a significant boost in this regard. Such interventions coupled with the ongoing focus on infrastructure development can accelerate the growth of EV adoption."



Vineet Agarwal
MD
Transport Corporation of India (TCI)



Vipul Bhalla
Senior Regional Manager Cargo Indian
Sub-Continent, Oman Air

seeing the adoption of EVs for last-mile deliveries in the logistics sector, especially in the e-commerce segment. As an integrated multimodal logistics solutions provider, we can envision a future where electric trucks will play a key role in sustainability and supply chain automation. The collaboration between large OMCs (Oil Marketing Companies) and DISCOMs will play a crucial role in strengthening the EV charging infrastructure. We also expect an increase in the number of home-grown manufacturers of semiconductors, which will contribute to the growth of India's EV industry. Local production will pick up the pace, with leading automobile manufacturers coming forward to assemble EVs in India."

Adding further to the future of EVs, Bhalla says, "It is extremely bright. The community is growing with a lot of people showing interest. As an EV owner, and perhaps the only one at the moment at the Delhi Cargo Terminal, I get stopped very often as people are curious about the vehicle and its potential. People have been driving EVs for nearly 10 years since the time of Reva/ e20 brands. As the ecosystem settles down, it is just a matter of time before the larger electric vehicles will take to Indian roads.

A number of start-ups are already pushing the EV story to every corner of India. EV owners have already been to destinations like Lahaul-Spiti and Gangotri, high up in the Himalayas. EV journeys have been undertaken on long routes like Mumbai-Delhi-Mumbai and many more.

Most people are not aware that some of the EVs recharge themselves coming downhill, so a vehicle leaving Mussoorie

Mr. Vineet Agarwal, MD – TCI shared his insights in Cargo Talk's Industry Story on the theme – 'Future is electric, Take Charge!' He talked about the emergence of electronic vehicles as a viable solution to the current climate crisis that we are facing and said, "As an integrated multimodal logistics solutions provider, we can envision a future where electric trucks will play a key role in sustainability and supply chain automation."

To read the full story on pg. 36 please click on the link -

<https://online.fliphtml5.com/yzsfr/fxvi/#p=40>

TCI Express Ltd. launched virtual assistant on the website



With the newly launched TCI Express' Virtual Assistant, the customers can now connect with us directly on the website: www.tciexpress.in. The virtual assistant can help you track your consignment, book a pickup request and resolve other shipment related queries.

TCI's Vaccination Drive

- TCI organised Vaccination drive across various locations Pan India



In our constant endeavor to fight against the pandemic and safeguard our employees and their families, vaccination drive at TCI Express Gurgaon, TCI Corporate Office, TCI Supply Chain Solutions Bidadi, TCI Pataudi (LNRO), TCI Freight Rewari Office and TCI Freight Hub were organised throughout the months of June and September.

- **TCI Foundation in collaboration with Khushi Clinics organised vaccination camps**



TCI Foundation in collaboration with Khushi clinic teams at Ludhiana and Chandigarh organised Covid vaccination drive, health camp and CBS Testing at Transport Nagar with the support of local transporters.



Dengue and Malaria Awareness by TI Staff



Blood Donation by Truck Drivers



**HIV/VDRL, BP and Sugar testing by TCIF
TI Trucker staff**

e-presence



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www.tcil.com



TCI's health and safety programme

www.tcisafesafar.com

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