

THE MACHINIST

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Gearing Up for the change

Automotive industry is transforming
with EVs & connected cars.
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IT IN MANUFACTURING
Investing in future

MATERIAL HANDLING
Being future ready



Industry's tomorrow demands 'Industry 4.0' today

An overview of how the use of technology can make supply chains more effective and efficient

By Anil Lingayat

The average turnaround time of ships at Indian ports has improved from 4.01 days in FY15 to 3.44 days in FY17. However, this is still high in comparison with ports such as Singapore and Shanghai wherein turnaround time stands at between 1-2 days and 0-1 days respectively. The reason for this isn't only better loading and unloading infrastructure, such as material handling equipment, but also the reliance on advanced technologies.

As a nation, India enjoys many cost advantages vis-à-vis other nations due to lower labour costs and other overheads. However, the logistics cost in India, at 13-14 percent, is unfortunately much higher than the United States (9.5 percent) or Germany (8 percent). Such inefficiencies add to the cost of manufacturing local products thereby increasing final pricing and reducing our competitive edge in the global marketplace.

With the adaption of Industry 4.0, most Indian companies will be able to reduce logistics and warehousing costs while having enhanced control over deliveries and quality.

What we need is to adapt smart automation practices and not necessarily increase spend on machinery. An average Indian truck covers a distance of 400-450 km per day which is much lower than the nearly 804 km (about 500 miles) per day achieved by trucks in the United States.

Few premium truck models in India already include electronic control unit (ECU) which is essentially a computer with internal pre-programmed and programmable computer chip. This ECU can easily detect faulty components or parts in case of unforeseen break-downs thereby reducing downtime. This ensures that the time spent on diagnosis is minimized and immediate

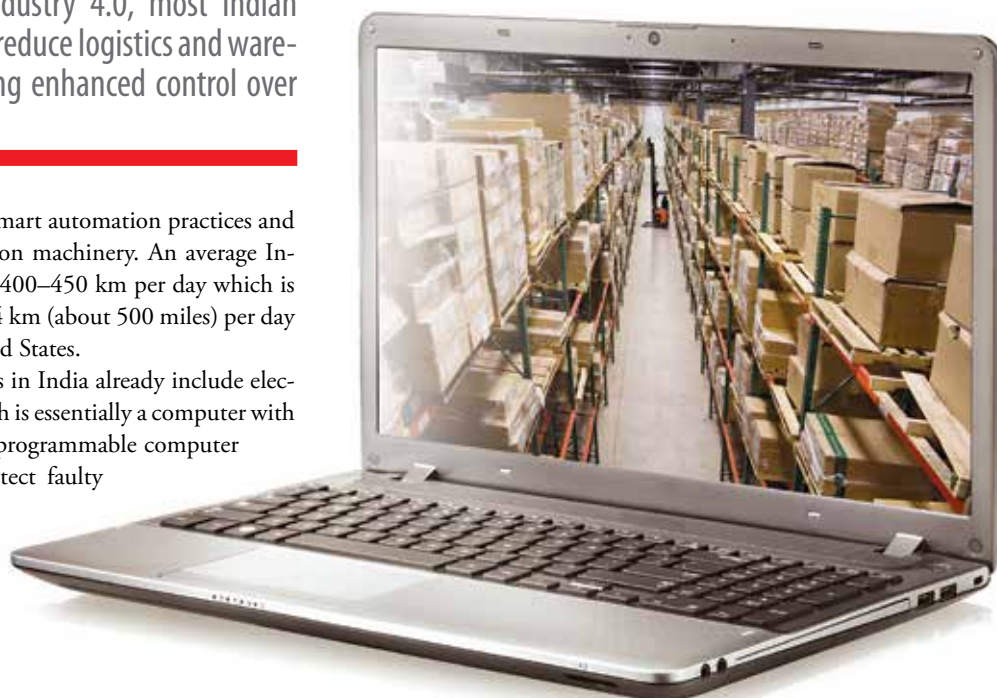


communication can be sent to the nearest service center for making identified spare parts available and for servicing.

The same principle could be applied to the logistics and warehousing scenario wherein material handling machines could be programmed to detect faults and timely remedial measures can be taken. In addition, new-age demand forecasting techniques could allow warehousing managers to plan out their stocking requirements. This would also allow

warehousing managers to meet any sudden rise or fall in demand for particular products thereby ensuring optimum utilization of available space.

Many of us look towards mechanization in warehousing or logistics processes as a move towards labour cuts. However, mechanization without technological augmentation such as automation and data exchange, especially in warehousing and logistics technologies, is meaningless and will not yield optimum results.





This predicted technological revolution such as the ability of machines, devices, sensors, and people to connect and communicate with each other via cutting-edge technologies like the Internet of Things is also known as 'Industry 4.0'. Industry 4.0 is a communication led rejuvenation that could be optimally utilized in the warehousing and logistics industries. This could be achieved through reliable connectivity of data, people, processes, services, systems and IoT-enabled industrial assets or machines.

As part of this 'Industry 4.0' initiative, the vast multitude of vehicles or machines would be able to seamlessly transfer data or communicate with one another in real-time. This data could thereafter be quickly analyzed and having a decentralized decision making structure would enable remedial measures to be quickly initiated.


The most basic adoption of technology in everyday transportation could be that of using Google Maps to not only find the best available route but also to avoid congested and traffic clogged roads thereby saving both time and money.

Across the logistics and warehousing industry, there is a need to enhance automation by increasing the number of machines. However, the more important and pressing issue is to ensure that these machines work smartly aided by cutting-edge technologies.

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nies will be able to reduce logistics and warehousing costs while having enhanced control over deliveries and quality. Furthermore, the robust data sharing between various logistics and warehousing modules will allow companies to prioritize deliveries and execute future plans flawlessly.

In conclusion, it would be appropriate to point out that supply chain networks have increasingly become complicated today since operations and manufacturing happens across geographies. In addition, logistics and warehousing models have to quickly adapt to this new globalized way of conducting business. Hence, ecosystems such as Industry 4.0 remain more relevant today than ever before and have become a necessity for not only growth but also business continuity. 

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UPDATE

Audi & Airbus testing flying taxi concept

At Drone Week in Amsterdam Audi, Airbus and Italdesign are presenting for the first time a flying and driving prototype of "Pop.Up Next".

This innovative concept for a flying taxi combines a self-driving electric car with a passenger drone. In the first public test flight, the flight module accurately placed a passenger capsule on the ground module, which then drove from the test grounds autonomously. This is still a 1:4 scale model. But as soon as the coming decade, Audi customers could use a convenient and efficient flying taxi service in large cities – in multi-modal operation, in the air and on the road. Without changing vehicles, passengers will enjoy their leisure time, relax, or work.

This innovative concept for a flying taxi combines a self-driving electric car with a passenger drone.

"Flying taxis are on the way. We at Audi are convinced of that," says Dr. Bernd Martens, Audi board member for sourcing and IT, and president of the Audi subsidiary Italdesign. "More and more people are moving to cities. And more and more people will be mobile thanks to automation. In future senior citizens, children, and people without a driver's license will want to use convenient robot taxis. If we succeed in mak-



ing a smart allocation of traffic between roads and airspace, people and cities can benefit in equal measure."

To see what an on-demand service of this kind could be like, Audi is conducting tests in South America in cooperation with the Airbus subsidiary Voom. Customers book helicopter flights in Mexico City or Sao Paulo, while an Audi is at the ready for the journey to or from the landing site. Audi is also supporting the Urban Air Mobility flying taxi project in Ingolstadt. This initiative is preparing test operations for a flying taxi at Audi's site, and is part of a joint project of the European Union in the framework of the marketplace for the European Innovation Partnership on Smart Cities and Communities.