Impact of
Digital Transformation
in Logistics Industry

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The logistics industry is no stranger to challenges. Seeing its market capitalization erode by $300 billion during the 2008 financial crisis, it turned around to deliver a stellar return of 15% in the next six years. But now the logistics industry faces a greater challenge; this time from within. With digital transformation making inroads into the industry, companies need to adopt new business models, make data-driven decisions, reduce its carbon footprint and meet the expectations of the digital consumers.

As new players emerge, the boundaries are being redrawn and it remains to see who will be the top players of what is predicted to be a $15.5 trillion industry carrying 92.1 billion tons in the next six years. How large a role will data-driven analytics play in helping companies to cut cost and gain efficiencies? What would be the impact due to maturing of nascent technologies such as drones, 3D printing and autonomous delivery vehicles? How can the ecological impact due to increased shipping volume be minimized? These are some of the questions we look to answer in this white paper.

Whether it is rescuing animals, supplying goods across industries and continents, carting away waste and hazardous products or transferring high-value artifacts and objects, the logistics industry does it all. With 85 million shipments a day, its impact is far reaching and diverse. This makes it all the more surprising that the industry has been slow to transform itself, especially in comparison with adjacent industries such as retail and ecommerce, where digitization is making a serious impact.

The logistics industry is on the cusp of change. While the market is expanding, there are no easy pickings and the companies that embrace digital technologies will succeed in the future. What does the future hold in terms of challenges and opportunities?

Demographic Trends, Market Dynamics and Emerging Technologies

1 The rise of the digital consumer and e-commerce platforms have had a tremendous impact on the volume of shipments, but have led to increased expectations and demand for highly customizable solutions to meet individual needs. Emerging nations are also becoming fast growing markets, and companies need to shift their focus accordingly.

2 The demographic shift predicts over two-thirds of the population will be living in cities. This will present new logistics challenges as companies will have to cater to rising demand in a gridlocked environment.

3 With larger sets of data being available, companies that can easily harness the power of analytics will gain competitive advantage over those who do not.

4 Digitization and software have democratized industries, paving the way for new entrants with nimble and disruptive business models. They will look to challenge the current dominant players in the industry.

5 On top of this, new technologies such as drones, autonomous vehicles and 3D printing will have a great impact in the industry.

Oil of the 21st Century: Digitization, IoT and Big Data Analytics

Data is the 'oil' of the 21st century. In its raw form, it is of no value; but when it can be collected, cleaned, compiled and analyzed to give insights and spot trends, it becomes a powerful tool. Companies can harness the power of advanced data analytics to improve operational efficiencies and reduce cost. The prevalence of IoT sensors and devices makes it easier for companies to track and monitor their fleet in real-time. Warehouses too can be equipped with sensors to ensure seamless flow of information regarding inventory levels and early detection of shrinkage or natural loss of goods.

Control Towers are automated logistics management systems providing end-to-end visibility and greater transparency for all the players involved. Some of the common features are:

Route Optimization: Perform route analysis to find the best alternative, presence of tolls, traffic congestion or blockades to improve performance and on-time delivery.

Real-time Tracking: GPS enabled vehicles allow real-time tracking, give end-to-end visibility and provide warning alerts to manage situations and breakdowns.

Performance Metrics: Data of on-time delivery, delays, accidents and response time can be evaluated to find areas for improvement.

Business Functions: Activities such as planning, tracking, billing and making payments can be automated.

The benefits companies stand to gain are enormous. As per the World Economic Forum report, companies such as Procter & Gamble, Dell and Pfizer have already invested in such technologies and the benefits that stand to be gained in terms of reduced inventories amount to $500 million, 10% - 20% reduction in delivery cost, up to 25% reduction in warranty costs, and so on. Control towers could also lead to a 25% reduction in waiting time at major canals such as the Suez and Panama.

Analytics as a Service is an emerging sphere of activity, which helps businesses make data-driven decisions with the help of cloud storage and analytics. In 2012, the US Army teamed up with IBM to shift its logistics data into the IBM Hybrid Cloud system to manage a volume of over 40 million data entries that allowed the movement of supplies and goods to the US Army bases across the world. According to Anne Altman, general manager of IBM's federal practice, "The Army not only recognized a trend in IT that could transform how they deliver services to their logistics personnel around the world; they also implemented a cloud environment quickly and are already experiencing significant benefits."

And the benefits? Reduction in costs by 50% and an almost near-perfect reliability of 99.99% with reduction in downtime.

Analytics as a service can serve logistics companies in the following ways:

Improved Demand Forecasting to understand peak seasons, customer profiles and geographical impact. This leads to more dynamic reorder points and lower buffer stock with general inventory levels being optimized.

Reduced Service and Maintenance Cost as there would be predictive maintenance and early warning signals. This leads to lesser breakdowns and quickens the recovery up-time.

The primary challenge for companies, however, would be acquiring and training resources with analytics skills. A cost-effective and faster alternative for companies would be to outsource their analytics tasks to third party service providers.

At Suyati, we have **tested and delivered a warehouse and logistics management systems** for a US based Customer Engagement Solutions provider to help them stay competitive and deliver world class customer service experience. You can read their story here.

Breaking the Monopoly: Shared Capabilities and Open Source Platforms

The rise of ecommerce platforms such as Alibaba and Amazon have allowed small and medium enterprises to directly cater to the international market. The entry of numerous SMEs has opened the window of opportunities, but not without its own set of challenges.

One of the challenges the SMEs face when shipping to international customers is the over-reliance on large service providers who consolidate smaller shipments into one lot and complex process documentation involved. Now, however, there are platforms emerging that match individual packages to individual capabilities.

With **open cross border platforms** emerging, it has broken the monopoly held by global companies when it comes to international shipping. From matching packages to delivery capabilities, suggesting appropriate mode of transportation, fulfilling the import procedures

and paying taxes, customized pick-up and delivery requests can all be handled by different independent smaller firms as an end-to-end service.

Crowdsourcing Services in logistics will also prove to be a game-changer as multiple users contribute to make a more efficient and optimized system. For example, Cargomatic connects shippers with carriers who have extra space through web and mobile technology. This results in better space utilization for carriers and real-time tracking for the shippers.

Waze is an app that allows drivers to share traffic and navigational information. It is a community platform, which shows the real-time traffic situations, best routes and cheapest gas stations on the route, resulting in operational gains in terms of time and cost.

Shared Warehouses allow companies to convert the large fixed costs of owning and running warehouses into a variable cost spread over a host of companies who share the facility. This leads to better capacity

utilization, while labor, inspection, equipment and IT costs can be shared with others, bringing the overall cost to manageable levels.

Pepsico and Nestle have teamed up with STEF (as their common logistics operator) to jointly operate the storing, packaging and distribution of their products in Belgium and Luxembourg. They also appointed TRI-VIZOR as an independent third-party to overview the neutrality of operation. This joint effort has significantly cut costs and reduced CO_2 emissions.

The Future is Here: Drones, Autonomous Vehicles and 3D Printing

The next five to ten years may redefine how the whole logistics industry operates as digital transformation turns sci-fi with the maturing of drone technology, automated delivery vehicles and industrial scale 3D Printing.

Amazon is already testing and privately delivering packages using **autonomous drones** in under 30 minutes of placing the order. While the technology is nascent and there are regulatory issues in commercially operating drones, we expect them to be resolved in the wake of the benefits they possess. In megacities, drones could reduce traffic congestion and accidents, and improve the response time and costs of last-mile delivery.

Google's self driving car could be making heads turn, but **autonomous delivery vehicles** are equally disruptive and will soon become a reality. Mercedes-Benz recently tested their Freightliner Inspiration Truck and this is set to radically change the notions behind cargo delivery. Not only would there be a reduction in accidents, but the driver can now focus on managing the administrative and maintenance aspects of the logistics increasing overall productivity.
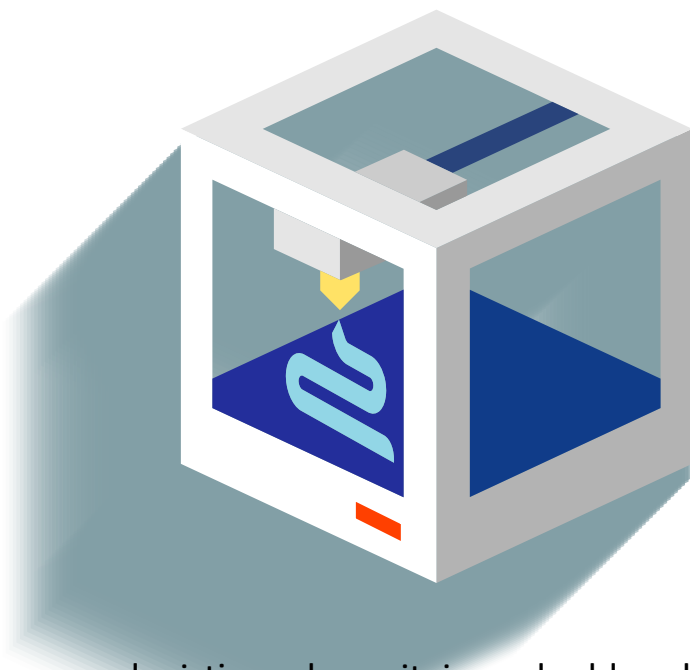
Saving the craziest for last, 3D printing looks like something right out of a Star Wars movie; but it is as real as it gets. **Additive Layer Manufacturing** (as it is more formally known) is a manufacturing process that uses digital blueprints to literally print a product, layer by layer. With scores of practical applications across industries, 3D printing will disrupt all areas of our lives, including logistics where it is a double-edged sword. Companies can start 3D printing spares and consumables on site and that could negatively impact shipping volumes. Alternatively, logistics companies can act as distributors for manufacturing companies by 3D Printing products from company-authorized digital blueprints and directly ship it to customers.

Airbus has been tinkering with the notion of 3D printing parts and spares in an effort to make the process cheaper and the aircraft lighter. The airline maker is in the process of testing its 3D printed parts for commercial production. While these are all in nascent stages of development, the potential is there for rapid progress and large-scale adoption in the near future.

Remembering the Earth: Clean Logistics for a Green Tomorrow

The exponential rise in global shipping has lead to the increase in carbon emissions, inefficient utilization of energy and resources, and greater waste generation resulting in many voicing concerns about the ecological impact of the logistics industry. While a lot of the technologies discussed here have the potential to reduce carbon footprint and will lead to better utilization of scarce resources, there is a need to focus on ensuring the ecological impact on the environment is minimized. This would mean collecting and reusing the packaging and materials, finding alternatives to fossil fuels and safer packaging and transporting of hazardous chemical and materials.

The Logistics Industry is in the cusp of change. Which technologies will prosper, and how fast, is open to speculation. But who would be the dominant players in five years' time will be decided by the way they successfully adopt digital technologies in streamlining their operations and enhancing their capabilities. Companies must invest in data analytics capabilities, shared logistics services and place intelligent bets on long-term delivery capabilities to strike the right balance while envisioning their future. After all, the future belongs to those who are ready to face it.

About Suyati

Suyati is a fast-growing, digital transformation solutions company that helps you rebuild your customer experience for the digital consumer. We collaborate with businesses to strategize and implement impactful digital initiatives that position our clients ahead of the competition. We are digital-first and we focus on delivering digital transformation solutions that support your various engagement strategies. With our niche and rich expertise in a wide range of technologies and services- CMS, CRM, e-commerce, Cloud, IoT, Data Analytics, and Product Engineering- we help companies leverage their best on web/cloud/mobile platforms.

We enable you to create insights driven customer engagement across all touch points to build a unified marketing approach. Our custom technology solutions have been deployed successfully in companies across the globe, especially in the US, UK, Europe and Australia.

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