# Track and Trace Model for Logistics Visibility

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**ABSTRACT**

*In this paper I have successfully completed a Track and Trace Model for Logistics Visibility, Under the Internship Program during my MBA, the company which I choose for the five months internship was Walplast Products Pvt Ltd. It is one of the top wall putty manufacturing company in India. It manufactures products for the building construction materials, the products vary from various types of wall putty to the White and Grey cement-based products. This paper explains the operational and planning activities that are undertaken by manufacturing and construction material company for their different projects. The paper concentrate on Track & Trace of vehicles for potential growth, capturing untargeted market, challenges faced during day to day dispatch, complete logistics visibility and increasing customer satisfaction. The different tasks let me to deal with the difficulties and experiencing the professional working scenario at Walplast Product Pvt. Ltd.*

*Walplast aimed at providing complete solutions to the leading construction industry with full range of allied products like Premium Wall Putty's, Prima bond, Block Jointing Mortars, Ready-Mix Plaster, Crack Fillers, Tile Adhesives, Plato Proof, Quick Bond, Master plast, Texture, Gypsum Plasters and Wall Putty-based colour Wall Putty's.*

*Keywords: -*

*Logistics, Track and Trace, Customer satisfaction, Dispatch, Lead time, GPS, Non GPS, Efficiency and Effectiveness.*

## Introduction

With daily dispatch of vehicle there comes a challenge of delay in transit, detention at loading and unloading point, with no visibility and inefficient tracking as Walplast doesn't have their own delivery vehicles/trucks. Walplast Products Pvt. Ltd and Freight Tiger are exploring ways to engage and bring the best practices of automation to the table in these areas. A collaborative, multi-tier logistics platform for visibility across all freight management, providing a single version of the truth for all stakeholders by using Track & Trace model.

## Modus Operandi

Challenges faced during dispatch of vehicle which are:

- Delay at transit

- Detention at loading at unloading

- Inefficient tracking, and others

To overcome these challenges Walplast Products Pvt. Ltd and Freight Tiger are exploring ways to engage and bring the best practices of automation to the table in these areas. Track &Trace is a software which will have complete logistics visibility on the movement of vehicle. Process include installing software from Freight Tiger at the desktop, where trip has to be generated manually, it is basically Sim card tracking technology, which tracks the live location of the truck driver.

Generating trip following details are required:

- Driver Number

- Vehicle Number

- Origin

- Destination

With the help of above information Trip is generated with unique Trip ID for maintaining data. To map incoming vehicle from supplier with dispatch orders, shipment status update toall the parties by real time tracking of vehicle can be achieved.

**Track and Trace Model**
Walplast Products Pvt. Ltd. has embarked on a journey to Digitalize, automate and optimize transportation and fleet management, with every day dispatch of vehicle there comes a challenge of delay in transit, detention at loading and unloading, no visibility and inefficient tracking thus, Walplast Products Pvt. Ltd and Freight Tiger are exploring ways to engage and bring the best practices of automation to the table in these areas. Software which provide realtime monitoring of vehicle which has been deployed.
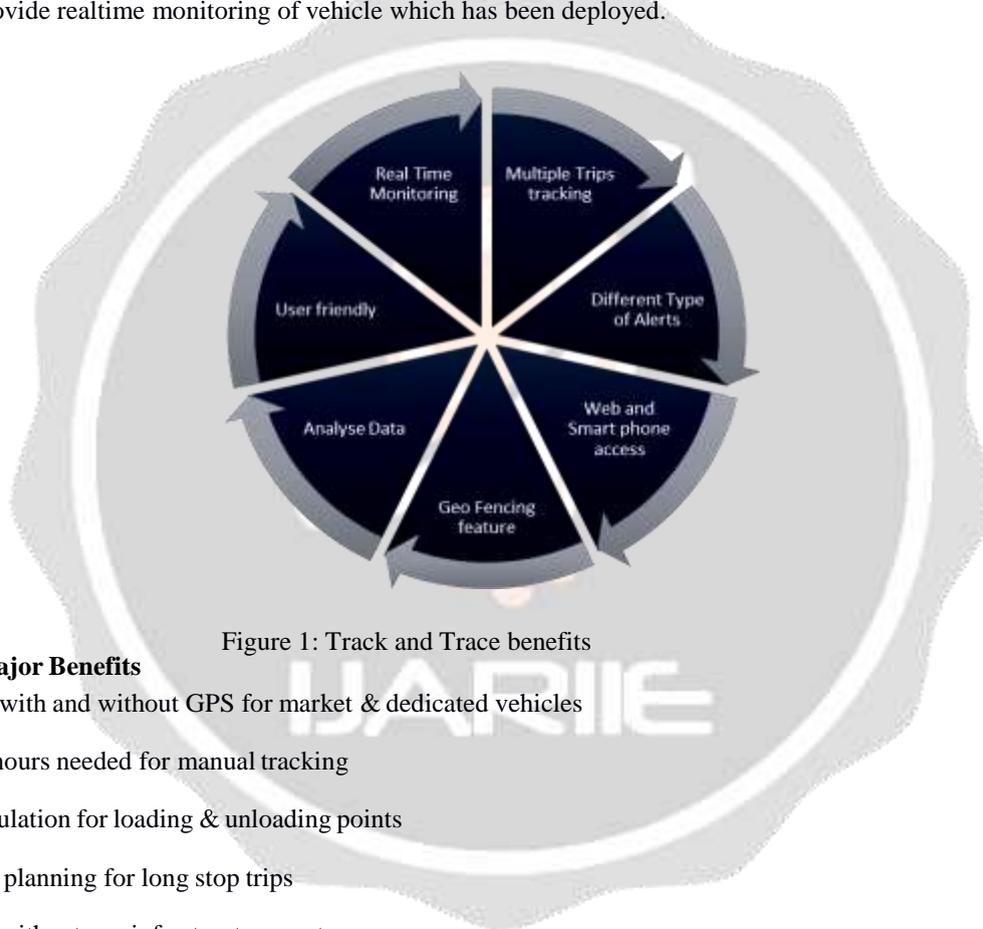


Figure 1: Track and Trace benefits

**Other Major Benefits**
- Tracking with and without GPS for market & dedicated vehicles

- No man-hours needed for manual tracking

- TAT calculation for loading & unloading points

- Proactive planning for long stop trips

- Tracking without any infrastructure cost

- Decrease Vehicle Misroute Issue

- Post tracking of every hour Vehicle data

- Long stoppage of Vehicle Alert

- Last mile arrival Alert

- Route Deviation of Vehicle Alert

With Track & Trace safe and on time deliveries will increase the customer satisfaction level which can helps to retain the customer loyalty. GPS vehicle tracking works to reduce downtime by helping fleet managers and dispatchers optimize their routes, stops, and schedules. GPS-enhanced workforce management gives fleet managers and dispatchers the ability to make informed decisions as needed to optimize their staff's workday. The information on fuel consumption and better fuel management, eliminating unwanted behavior from drivers such as speeding and better management of idle and maintenance time which will lower the Operation Cost. A good GPS fleet tracking system will deliver detailed reports that fleet-owning businesses can use to make data-based decisions for their operation. Insurance companies tend to give discounts for companies, who use vehicle tracking system in their fleet management as it provides more information on fleet and improves safety of employees and the fleet.

**Quotation from Freight Tiger**

Table 1: Quotation

| Trip | Frequency of tracking | Amount per trip |
|---|---|---|
| Within 300km range | 1 hour | 20₹ |
| More than 300km range | 2 hour | 10₹ |

(Excluding Tax 18%)

**Project Scope**

The scope of the project will cover the following steps:

- Step1 Dispatch Planning

- Step2 Vehicle allowance

- Step3 Miss call alert

- Step4 Monitoring vehicle live status

**Functional Scope**

Vehicle tracking to map incoming vehicle from supplier with dispatch orders, shipment status update to all the parties by real time tracking of vehicle.

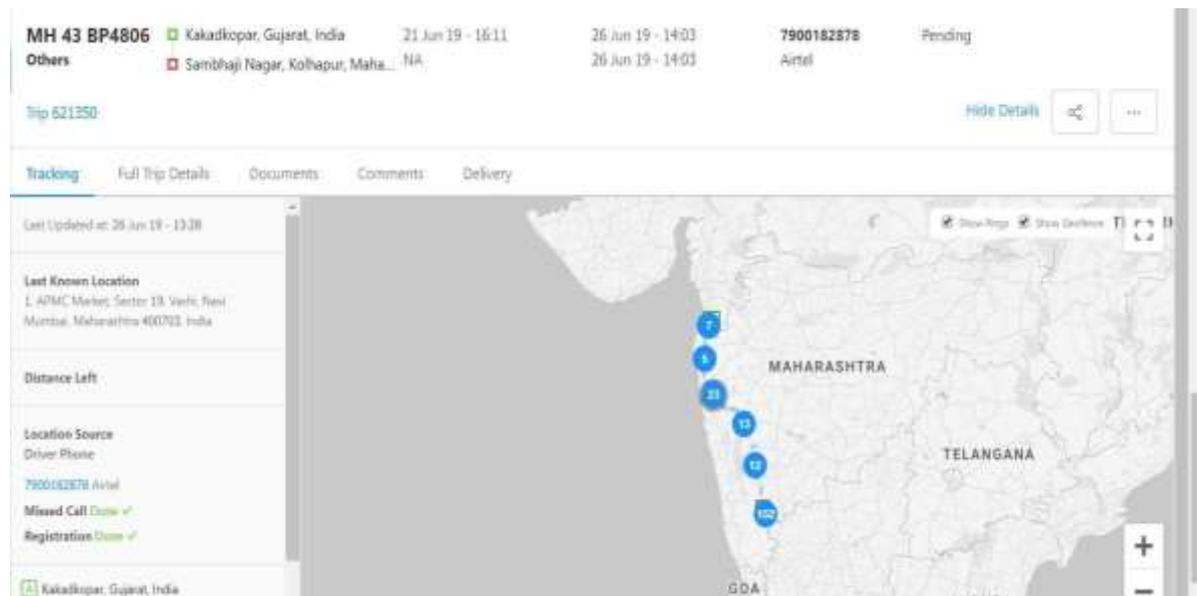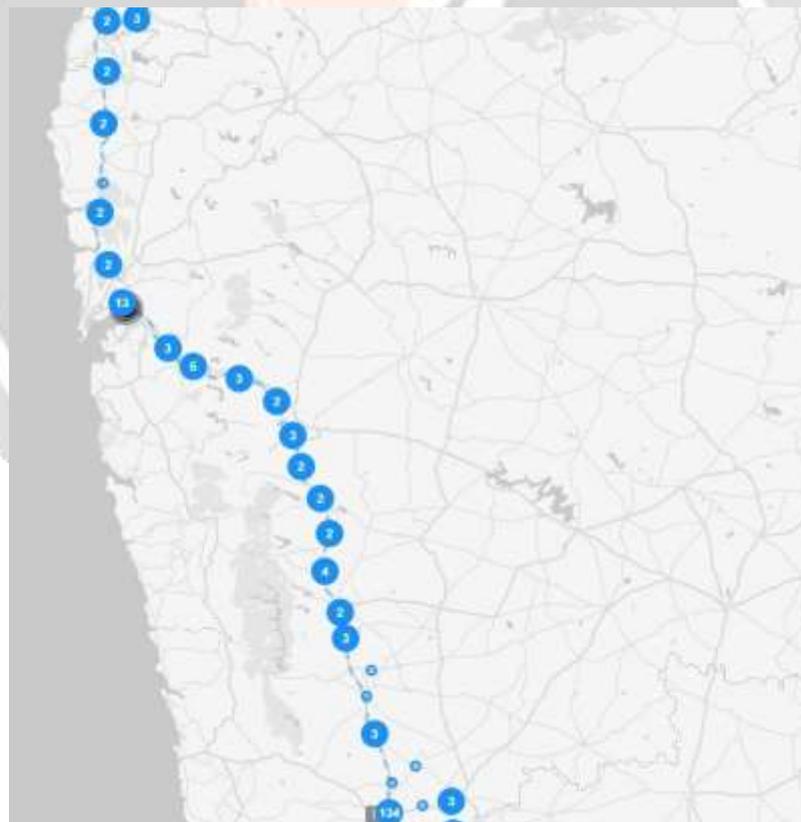**Practical/ Demo**

Figure 2: Demo screenshot



Figure 3: Zoom in view

**Results and Iterations**

Table 2: Excel view of Trip report generated automatically

| Trip Id | Vehicle Number | Driver Name | Driver Phone | Ata Date | Ata Time | Origin | Destination | Trip Creation Time | Trip Closing Time |
|---------|----------------|-------------|--------------|----------|----------|--------|-------------|--------------------|--------------------|
| 637443 | MP6650895 | Ramnarayan | 8717823096 | 01-Jul-19 | 03:16pm | Walplast Products - Katni, Lamtara, Katni, Madhya Pradesh, India | Head Post Office, Marwari Para, Jharsuguda, Odisha 768201, India | 27-Jun-19 05:38pm | 01-Jul-19 03:16pm |
| 637479 | MP09GF3966 | Ramprakash | 9982190271 | | | Walplast Products - Katni, Lamtara, Katni, Madhya Pradesh, India | Balaghat, Madhya Pradesh, India | 27-Jun-19 05:42pm | NA |

| Trip Id | Vehicle Number | Total Distance | Mode Of Closure | Transit Time | Running Time | Stoppage Time | Trip Status | Sim Provider | Last Update |
|---------|----------------|----------------|------------------|--------------|--------------|---------------|-------------|--------------|-------------|
| 637443 | MP6650895 | 560.2 | Manual | 3 days,2 hr,43 min | 1 days,10 hr,15 min | 1 days,16 hr,28 min | Closed | Idea | 01-Jul-19 01:38pm |
| 637479 | MP09GF3966 | 335.3 | NA | 3 days,14 hr,48 min | 1 days,26 min | 2 days,14 hr,23 min | Open | Vodafone | 01-Jul-19 02:42pm |

- Ata stands for Actual time of arrival

- Excel data has been created in transit

- Last 7 days data can access through portal

- Last 30 days data can be access through E-mail

Table 3: Logistics Visibility for Analyzing Data

| Device Label | Updated At | Address | Latitude | Longitude | Distance |
|--------------|------------|---------|----------|-----------|----------|
| 7900182878 | 2019-06-21 17:04:21 | GJ SH 5, Kakadkopar, Gujarat 396191, India | 20.3711 | 73.0811 | NA |
| 7900182878 | 2019-06-21 18:04:52 | Unnamed Road, 4th Phase, Karvad, Dungra, Gujarat 396191, India | 20.3543 | 72.9477 | 14.03067901 |
| 7900182878 | 2019-06-21 19:04:20 | Anwir, Maharashtra, India | 20.1581 | 72.9583 | 35.87407773 |
| 7900182878 | 2019-06-21 20:04:36 | Ranshet, Maharashtra 401602, India | 19.9316 | 72.908 | 61.60073591 |
| 7900182878 | 2019-06-21 21:04:16 | Maharashtra 401404, India | 19.6235 | 72.915 | 95.86607308 |
| 7900182878 | 2019-06-21 23:04:38 | Unnamed Road, Mira Bhayandar, Maharashtra 401107, India | 19.2703 | 72.9107 | 135.1408194 |
| 7900182878 | 2019-06-22 00:05:06 | 48, Thane - Belapur Rd, MIDC INDL Area, Airoli, Navi Mumbai, Maharashtra | 19.1487 | 73.001 | 151.6545921 |
| 7900182878 | 2019-06-22 02:04:34 | Unnamed Road, Sajgaon, Maharashtra 410203, India | 18.7934 | 73.3064 | 202.5655581 |
| 7900182878 | 2019-06-22 03:04:13 | Maharashtra 410204, India | 18.7785 | 73.3658 | 209.0341347 |
| 7900182878 | 2019-06-22 04:04:46 | Mumbai Hwy, Maharashtra 410405, India | 18.7504 | 73.525 | 226.0834032 |
| 7900182878 | 2019-06-22 05:04:08 | NH 48, Ravet, Pimpri-Chinchwad, Maharashtra 412101, India | 18.6595 | 73.7309 | 250.0079029 |
| 7900182878 | 2019-06-22 06:04:47 | 60/1/28, Jambulwadi Rd, Siddhivinayak Society, Dattanagar, Ambegaon BK | 18.4336 | 73.8454 | 277.8751815 |
| 7900182878 | 2019-06-22 07:04:37 | NH 48, Shindewadi, Maharashtra 412801, India | 18.1721 | 73.9527 | 309.079673 |
| 7900182878 | 2019-06-22 08:04:25 | Maharashtra 415536, India | 17.972 | 73.9817 | 331.5388881 |
| 7900182878 | 2019-06-22 09:04:15 | Unnamed Road, Chinchaner s. nimb, Maharashtra 415501, India | 17.6623 | 74.0876 | 367.7530606 |
| 7900182878 | 2019-06-22 11:04:03 | MH SH 144, Nehru Nagar, Karad, Maharashtra 415110, India | 17.2703 | 74.1801 | 412.4298856 |
| 7900182878 | 2019-06-22 12:04:35 | Unnamed Road, Kini, Maharashtra 416112, India | 16.8729 | 74.3005 | 458.4324891 |
| 7900182878 | 2019-06-22 13:04:45 | Power Ln, Bhimnagar Colony, Valivade, Maharashtra 416119, India | 16.7255 | 74.314 | 474.8847093 |
| 7900182878 | 2019-06-22 14:04:28 | Near Commercial Bank, Kolhapur District, Gandhinagar, Maharashtra 41611 | 16.714 | 74.303 | 476.6188223 |
| 7900182878 | 2019-06-22 15:04:03 | Power Ln, Bhimnagar Colony, Valivade, Maharashtra 416119, India | 16.7255 | 74.314 | 478.3529354 |
| 7900182878 | 2019-06-22 16:05:04 | Power Ln, Bhimnagar Colony, Valivade, Maharashtra 416119, India | 16.7255 | 74.314 | 478.3529354 |
| 7900182878 | 2019-06-22 17:05:12 | Unnamed Road, Chinchwad, Maharashtra 416119, India | 16.7112 | 74.3175 | 479.986046 |
| 7900182878 | 2019-06-22 19:08:58 | Power Ln, Bhimnagar Colony, Valivade, Maharashtra 416119, India | 16.7255 | 74.314 | 481.6191566 |
| 7900182878 | 2019-06-22 22:10:13 | Survey No. 21/9, Plot No.-2, Behind R K Nagar Society Hall No 5, Kolhapur, | 16.6618 | 74.2486 | 491.55301 |
| 7900182878 | 2019-06-23 00:04:15 | Power Ln, Bhimnagar Colony, Valivade, Maharashtra 416119, India | 16.7255 | 74.314 | 501.4868633 |
| 7900182878 | 2019-06-23 01:04:22 | Unnamed Road, Shiroli, Maharashtra 416122, India | 16.7393 | 74.2852 | 504.9159933 |
| 7900182878 | 2019-06-23 02:04:13 | Unnamed Road, Shiroli, Maharashtra 416122, India | 16.7393 | 74.2852 | 504.9159933 |
| 7900182878 | 2019-06-23 03:03:54 | Unnamed Road, Shiroli, Maharashtra 416122, India | 16.7393 | 74.2852 | 504.9159933 |
| 7900182878 | 2019-06-23 04:04:19 | Unnamed Road, Shiroli, Maharashtra 416122, India | 16.7393 | 74.2852 | 504.9159933 |
| 7900182878 | 2019-06-23 05:03:54 | Unnamed Road, Shiroli, Maharashtra 416122, India | 16.7393 | 74.2852 | 504.9159933 |

- Every hour frequency data with date, time, location and distance covered

**Conclusion**

At the end of the paper I would like to thank Walplast Products Pvt. Ltd. for providing me with such a great opportunity. During these 5 months of internship I have experienced working in real corporate environment. The internship with this company gave me a chance to experience and learn what cannot be gained during lectures and tutorials. I was working with the logistics department where vehicle placement confirming with Sales executive whether the customer will self-lift the material from the plant. If yes, then communicate the same to the respective plant. If no, then confirm the freight rate, which is bearable by the customer for the order given, from the sales executives. Fetch vehicle for the ordered quantity and the mentioned location and identity the market freight rates. If the freight rates of the Customer and the transporters matches then follow up with the transporters and place the vehicle in the respective plant. If the freight rate does not match, then we ask our sales executive to communicate the same to the customer and negotiate on the freight rate. If the customer agree, then place vehicle else fetch another vehicle. And my task was to bringing efficient solution by working on having a complete logistics visibility on the vehicle in transit which I successfully achieved.

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