A Definitive Guide on using

Location Data to Achieve Operational Efficiency

In your Logistics Operations

In 2020

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What is this Whitepaper about?

Supply chain and logistics functions are vitally important to get products and services to customers on time and at the right location. There are so many bottlenecks along with the movement of your supply, to understand and fix them, you need to cast a detailed eye at every action along with a live map.

Just like Superman's X-Ray vision, this whitepaper will show you the power of analyzing location data in real-time to - unearth bottlenecks, make critical business decisions and solve problems on-the-go.

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Who is this Whitepaper for?

If you are a logistics sleuth always on the lookout for insightful new clues and find it challenging to solve questions like:

Which of my assets is moving on the ground but not making money for me?

Then, this whitepaper is for you. We understand that at the end of the day you need insights to solve business problems by-the-hour and to;

- use your resources to the best to
- ensure smooth movement of goods

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What do you take away from this Whitepaper?

The elements of this guide are purely written to address the most pressing supply chain and logistics problems you face every day. At Locale, we solving complex business problems using spatial intelligence. Our experience has led us to solve those very same issues which plague you every day. This is what you will take away from the whitepaper:

01 Understanding the power of location data.

02 Solving the supply chain and logistics bottlenecks using location intelligence.

03 What happens when you ignore location intelligence.

04 Case studies on how organizations solve problems using location intelligence.

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Logistics is vibration, it's a symphony

To put it in simple words - logistics is pure movement. Movement of goods from factories to warehouses, and then onto distribution hubs, driven through the streets and straight onto the customer's lap. What if the customer wants to return the product? Someone has to pick it up, that's logistics too.

In essence, logistics is the beating heart of the entire body that is commerce. The overall logistics system performs vital functions such as packaging, storage, handling, and transportation along with proper information flow. The challenges of delivering rides or vehicles at the right time and location persist.

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Analytics of "where" actions happen

Today, it's become mainstream for organizations to leverage user data to understand their behavior. This has led to the mass adoption of cloud-based tools to store, analyze and generate prediction models. After all, analyzing user data can unlock hidden doors to understand user behavior at a more granular level.

Though modern analytics tools help you uncover many elements of user behavior, what they don't tell you is the 'where' part. You might know when leads convert to sales and when they drop off - the question is, do you know where they happen? Understanding where users behave in a certain way may lead you to know why they do it. You get the drift, right? So, when it comes to granular analysis, we believe that the 'where' part has been completely ignored.

This brings us to the crux of our argument. If you ask the torch bearers of the supply chain and logistics of any company, their songs sing the same tune - optimal usage of time, location, and resources to achieve 100% junk-free movement of goods and services.

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Today though, the ability to analyze data in real-time is giving companies more transparency and insights to track, predict, course-correct anomalies of every movement of each good across distribution and finally onto the consumer.

However bold the technologies are, however strong the conviction is to eliminate inefficiencies in the logistics journey - there still seems to be delivery delays, order cancellations, high cost of delivery and a whole host of bottlenecks constantly festering.

If we look at it closely, all these parameters or actions happen across time (when) and space (where). Can granular, real-time analysis of location data give you untold insights, leading to better business decisions? The answer is yes, and that's why we wrote this whitepaper.

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Challenges Faced in the Supply Chain and Logistics Industry

When it comes to accessing real-time, actionable insights, businesses have their task cut out in 2020. Amazon Prime pioneered the practice of fast, free shipping, forcing all the players in the industry to do the same. As a result, consumers now expect their packages to appear in a matter of days—and sometimes hours—placing tremendous pressure on local logistics systems and infrastructure.

Moreover, with consumers demanding super fast, on-demand delivery, logistics companies are in a race to bring efficiency to each aspect of the delivery journey. But the challenge is to optimize the deliveries while delivering the best experience to customers. Every logistics organization aims to achieve these two tasks:

01 *Giving a fantastic experience to the end-user: ensuring on-time delivery, right turnaround times and undamaged goods, etc.*

02 *Optimizing unit economics: decreasing the cost per delivery, decreasing deadhead miles and empty miles, etc.*

Let's dive deeper into five of the biggest challenges.

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1 - Transportation Cost Control

We both agree that the lack of proper resource utilization leads to higher transportation costs. We know that you are very pedantic about deadhead and empty miles. Deadhead miles are the number of miles you need to drive from the point of unloading to the point where your new load is ready for pickup. Empty miles mean the distance traveled while generating no income. Empty miles are a waste of fuel, time, and money. They make your supply chains sluggish and inefficient.

What can be done about this: *Analyzing the movement of your assets in near-real-time can help you spot under-utilized resources. Once you know that your assets are not utilized, you can modify your delivery strategy and keep your assets informed on-the-go, thereby achieving operational efficiency.*

2 - Delayed SLAs and ETAs

Your customers want full transparency into where their delivery is at all times. Real-time tracking, like how Uber does it, has raised the bar for logistics transparency. These days the location of a package is as interconnected as our social networks. The trouble is that as customer expectations have increased, their willingness to pay for fast shipping has decreased. Today you are required to achieve super-precise deliveries at dwindling budgets.

What can be done about this: Analyzing and charting all inefficiencies in your delivery outcomes is a good start. With real-time analysis across locations, you can uncover insights on the most optimal routes and times. And also fix late delivery bottlenecks, among others. All this to achieve fast and safe delivery. Once you get to the crux of the problem, you can modify your delivery strategies accordingly.

3 - Inventory Control & Visibility

To prevent dead inventory at your warehouses, you need to know where each inventory is. This is the first step to eliminate inefficient allocation and damaged inventory.

What can be done about this: *Monitoring the movement of goods from a warehouse can highlight product demand across each location. This is why you need to assess the 'where' factor. Location data can help you understand area-wise demand and movements. If you know what goods are necessary at each warehouse, you are on your way to optimizing inventory at an individual warehouse level.*

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4 - Inability to Track Journey KPIs

We know that you scrutinize KPIs such as total kilometers covered daily, on-time delivery percentage, delays due to loading or unloading requirements, deadhead miles, and empty miles. We both agree that failing to fix these aspects directly leads to loss of customer satisfaction and revenue. And you wouldn't want that.

What can be done about this: Your logistics operations can become better at predicting delivery outcomes if you could measure those vital metrics in real-time. This is why analyzing every action across location helps you plug inefficiencies on-the-go.

5 - Reverse Logistics

Like it or not, Reverse logistics is part of every eCommerce business. Your customers need a way to return items for many reasons, and this process needs to run smoothly. Without an efficient reverse logistics platform, you can turn off customers.

What can be done about this: What if you could analyze existing data on a live map. Develop the ability to pinpoint hotspots that are likely to generate a lot of order returns. And uncover areas where you get a lot of such repeat customers from. With the right geospatial analytics tool, you can uncover insights across locations, even at a street or a building level.

The Bottomline

To understand how your business performs on the ground, you need to analyze the movement of all your assets across a live map. Else, questions such as why your assets take a certain route at a given time, which delivery routes they complete sequentially, etc. remain unanswered.

Until now the analysis of asset and goods movement has been confined to tabular data sets. However, we see an emerging trend in 2020. Since every action along a logistics journey generates lat/long data, companies will warm up to leveraging location intelligence. This is where analyzing asset and goods movement across a live map can help you optimize operations.

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Why do you Need Location Intelligence?

"Loading and unloading happens at specific times at different locations — and delays mean demurrage borne by either party. Proactive ETA allows all stakeholders to plan their activities, and reduce costs."

Nitin, CEO Pando

Why do you need location intelligence?

> **"** *"Location isn't a point, it's a line"*
> ***Kashyap Deorah, CEO, Hypertrack***

We both agree that there is no 'mobility' without a dynamic location. In other words, location is a fundamental aspect of the movement of assets (people, vehicles, cargo, parcel) on the ground. However, analyzing how assets move across space and time is different from analyzing static points on a map.

After all, cities and towns are dynamic, where environments change every square mile. As a result, it is important to add the 'location points' of those areas to contextualize your strategies.

And finally, for consumers, successful location-based experiences are based on sequential activities at a very granular level. Where are they? Where do they need to go? What do they want to do when they get there? Understanding such behavioral themes lead to better acquisition and retention of customers.

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How to Use Location Intelligence to improve key metrics

Deriving insights via location data is challenging on two levels. Firstly, you need to derive insights daily, in fact in real-time. And lastly, these insights need to be actionable and configurable leading to time and cost savings.

So, lets deep dive and see how location intelligence can help you solve logistics and supply chain problems outlined above.

Inventory Optimization

In the supply chain, your ultimate goal is to optimize stocks and make the right products available at the right warehouses. Underutilized inventory leads to lost opportunities in driving business efficiency and ultimately affecting your company's bottom line. Here are some questions to analyze inefficiencies in real-time:

- Where are my idle inventories?
- Which products are in demand and in what locations?
- How do I plan my inventory based on the order patterns and order repeat-ability across each location?
- What and where are my mismatched inventories and warehouses?
- Can I cross-sell inventory from one warehouse to another one nearby?

Distribution Planning

Location data can guide you to plan your next set of warehouses and hub points. Jam-packed cities and clogged up streets demand smart storage of goods as close to high-demand areas as possible. With the help of location data, you can find actionable insights to streamline your distribution and eventually plan your network. Location Intelligence helps you get answers to questions like:

- Where should I place my new warehouses or distribution points?
- Which streets act as bottlenecks and where to place appropriate hub points to reduce delivery friction?
- Which locations are ideal to expand inside a city?
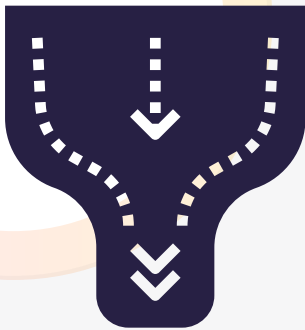
Transportation Bottlenecks

Every action and movement of goods from the factory to the warehouse, and on to hub points and eventually to the customer's residence - generates location data. However, once packages leave a distribution center or a warehouse, you are unable to track friction in real-time. With location intelligence, you can find actionable insights to get more visibility into the inefficiencies in your supply chain and get answers to questions like:

- What are my delivery costs across time, day, location, season, traffic density?
- What and where do delays crop up along the logistics journey?
- When and why do my delivery executives deviate from a fixed route of delivery?
- When, why, where, and how do product returns happen?
- Why am I not able to meet all my SLAs?
- What are my high pick-up times at warehouses, retailers & manufacturers?
- How many kilometers do I cover daily and what are my high origin-to-destination pairs?
- Which routes contain the maximum amount of empty and deadhead miles?
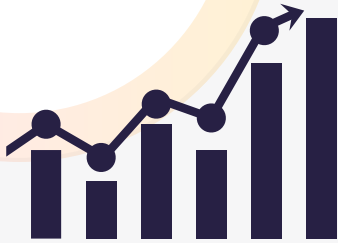
Demand Mapping and Generation

Imagine if you could analyze metrics across the demand for goods and assets. Especially across hubs and delivery points - all in one place. Understanding these metrics can help you eliminate friction and optimize each resource and touchpoint. However, the challenge is to gain deep insights by-the-hour. Real-time actionable insights lead you to answer questions like:

- Where and when can I cross-sell products across locations?
- Where are the demand clusters for different SKUs and product categories?
- Which locations do I prioritize for conducting offline marketing campaigns?
- Where do my repeat users come from?
- Where do high-value-low-frequency vs high-frequency-low-value orders come from?
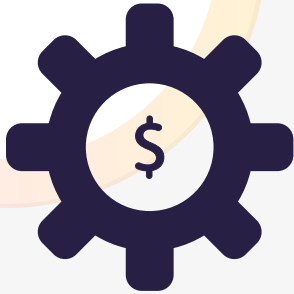
Cost Optimization

Every delayed movement adds to your transportation cost. But, how do you analyze which routes and what times impact your unit economics? Location intelligence can help you derive actionable insights for questions like:

- How much am I spending every day on deliveries across different areas?
- How much time and money do I spend to complete each journey?
- Which route plans can lower my cost of transportation
- What delays and hurdles are causing my transportation costs to spike and when?

Fraud Detection and Prevention

If you are an eCommerce company, fraudulent transactions such as misuse of coupon codes, to high-repeated order returns for no obvious reason - directly impact your unit economics. You not only fulfill a questionable order but end up wasting your supply (delivery executives) fulfilling them. Analyzing such patterns across locations can help you detect and prevent fraudulent transactions. Using location data, you can answer questions like:

- At which location are the most fraudulent orders generated?
- Which areas are prone to frequent reverse logistics?
- Do fraudulent orders have a pattern across time, location, and seasonality?

Last Mile Efficiency

The most challenging parts of the delivery journey are to get goods to their final destination, which is commonly called last-mile delivery. What if these packages are received by specialized teams that are allowed to enter the city center, thus reducing the need for multiple trucks to drive down the same streets.

Imagine if your delivery vans could drive up to strategically placed meet-up points (hubs) and distribute their packages to a team of cyclists and pedestrians (your delivery executives). This team takes packages to their final destination while the vans go back to their depot to reload and drive to another hub point. Leveraging location intelligence can help you answer the following questions:

- *Where should I place your hubs and drop-off points?*
- *Where should I allocate delivery executives?*
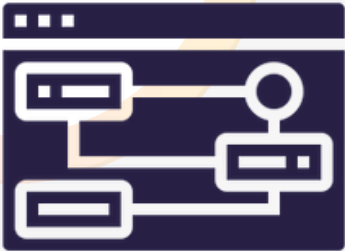
Actions and Workflows

Every dollar you spend on analytics should lead to insights and corrective actions in real-time. What you need is a way to configure metrics thresholds. Once metrics hit a certain number, automatic triggers should be sent to optimize your route planning and resources. With location intelligence, you can set actionable triggers.

- *Configuring an alert when SLAs are not met during on-loading and offloading*
- *Configuring a notification when my asset is not getting utilized on the ground*

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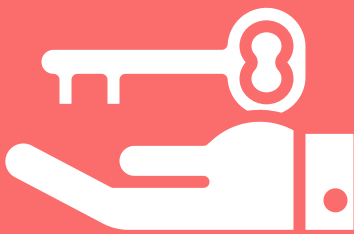
The Cost of Ignoring Location Intelligence

Location intelligence is one such component that can move you beyond tabular data analysis and bring you a live interpretation of anomalies and friction happening across time on the ground in your business. Here are three ways, turning a blind eye to location intelligence can impact your business:

"One of the things I learned back at Uber is that you really have to empower teams that are locally situated."

Manik Gupta, ex Uber CPO
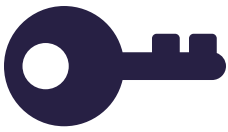
Impact on Missed Opportunities

Failing to analyze KPIs across location components would lead to a lack of insights. Insights on how close inventories and delivery resources should be to high-demand areas, quickly spot idle inventories and friction in delivery. When and where to allocate inventories and resources etc.

Direct Impact on Revenue Bottom-line

If you don't know what opportunities your business is missing, you will fail to drive more revenue from new business cases. Imagine the doors you can unlock if you knew your highly affluent areas where customers don't mind paying a premium price for your product on a certain day of the week? You could move inventories and delivery executives closer to this area and boost sales.

Impact on Customer Experience

Customers always want products and services to be delivered immediately. Do you know what's worse? They are unwilling to pay a premium for super-fast delivery. If you fail to analyze your location data, you wouldn't be able to gain an in-depth understanding of 'when' and 'where' orders come from.

You also wouldn't know which streets are causing delivery deviations and delays. Lack of such granular understanding leads to poor customer experience and tarnish your brand reputation.

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How Locale can help you

Locale helps you analyze and increase asset utilization, demand in high supply areas and eventually improve your cost per delivery. We help you create bespoke, intelligent maps by getting all your location data in one place. This would enable you to generate operational insights within a minute, to solve your mobility and logistics problems at scale.

What does this mean for you?

As a decision-maker, every dollar you spend on analytics should lead to insights and corrective actions in real-time. We understand that you live and die by taking strategic calls to plug inefficiencies every day. However, even before you get to experiment and predicting the outcome of your decisions, you need the right set of capabilities to analyze and detect bottlenecks spatially. Locale's location intelligence platform helps you optimize your four key functions:
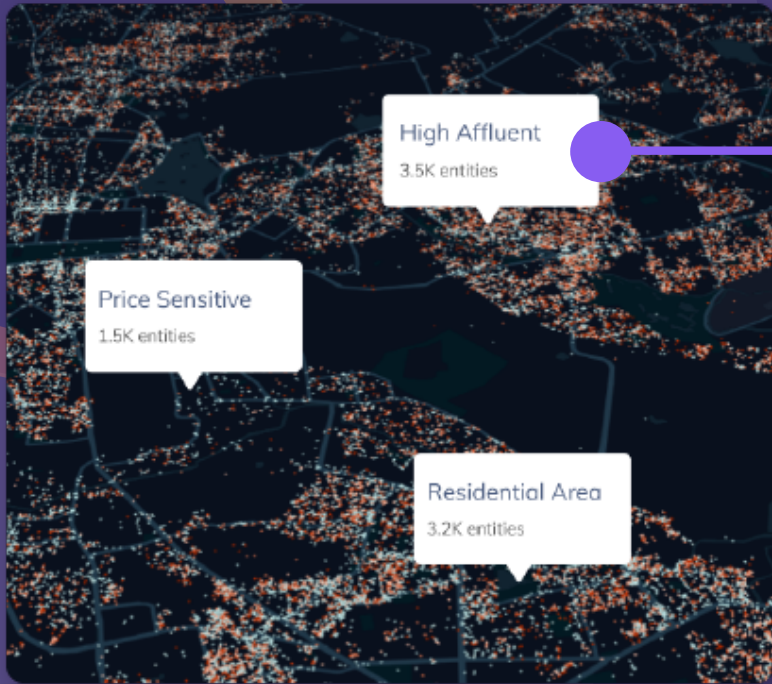

1 - Monitoring

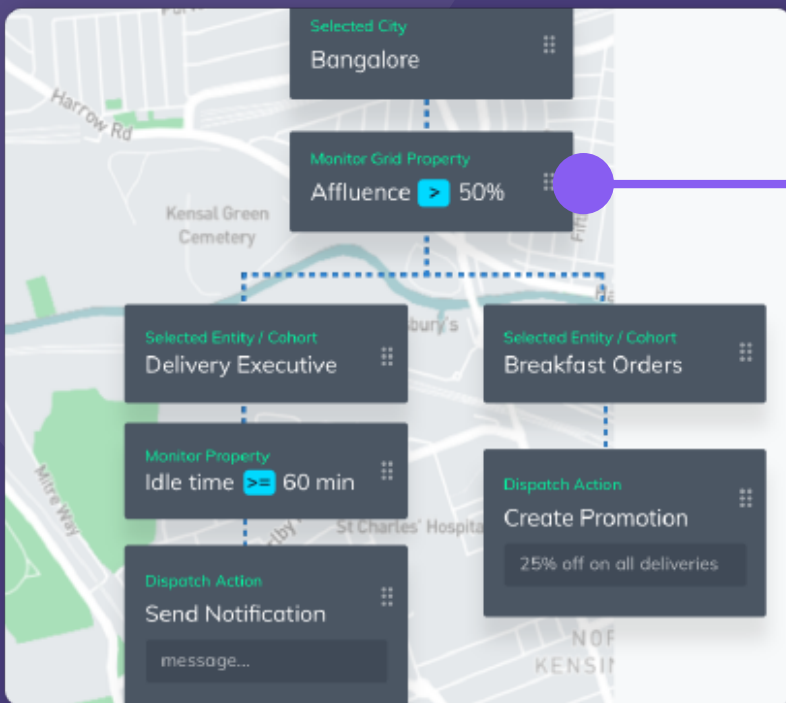Track and learn each activity on the ground level, in real-time to make more tactical decisions.

2 - Detecting

Find patterns on what's breaking repeatedly and in what areas.

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3 - Profiling

Create location profiles driven by supply and demand of each, specific location.

4 - Testing and Iterating

Observe, test and iterate strategies. Automate strategies that work and turn them into workflows calling our API.

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Hope you enjoyed this whitepaper as much as we enjoyed creating it.

At Locale, we provide Uber-like location intelligence to every company with moving supply or demand.

We belive that success in today's business environment is purely driven by context. Context of who your customers are, where they come from, how they decide and get influenced, where and how they buy, etc. - the whole nine yards. We created Locale to give your business an extra edge to your context, via location intelligence.

If you encounter operational challenges in logistics and supply chain every day and want to create contextual, sustainable, and scalable solutions in real-time, we can help you achieve it. Talk to us today.

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Location is at the center of what we do, just so you know, we are on the following social media platforms. Follow us there (pardon the pun).