LOCATION DATA & INSIGHTS

Buyers' Guide

FOR RETAILERS

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Welcome to Unacast's Location Data Buyers' Guide - For Retailers. Whether you're just dipping your toes in location data, or already diving deep, this guide will help you navigate the complex world of using data to understand trends and population movements. Equipped with this data, we'll walk you through ways that retailers can use mobility data to make real business decisions, from selecting new sites and benchmarking against competitors, to deepening forecasting methodologies.

Why an Insights Buyers' Guide?

The location data industry is growing in both size and complexity. As a result, the needs of buyers are evolving in three major ways:

1 MORE BUYERS WANT INSIGHTFUL, AGGREGATED DATA PRODUCTS VERSUS DEVICE-LEVEL DATA SETS

The number of companies who want to use location data is growing significantly faster than companies who can use location data. Here's why: data without interpretation is like paint in a jar — it's not until you apply it to a canvas that it begins to mean something. Device-level data products are like that proverbial jar: un-curated, and sometimes un-processed, sets of raw data. Companies without a data science team and/or the proper technological tools and/or dedicated time won't have ways to interpret it, let alone make it actionable. They need aggregated products — those that feature built-in processing, curation, and analysis as a matter of course (such as visualizations, reports, or dashboards). This kind of shortcutting offers clients at all different levels of data sophistication the opportunity to leap directly to interpretation so that they can turn location data into actionable insights for their businesses.

2 SMART BUYERS ARE REALIZING THAT DATA QUALITY IS MORE VALUABLE THAN QUANTITY

Many location data providers count on sheer volume as a selling point. While some quantity is critical to achieving statistical significance, more doesn't always mean better. Some providers even pad their coverage* metrics with invalid or low-accuracy data (which is then immediately removed from the set during processing). A good rule of thumb is "garbage in, garbage out"; insights created from high-quality data not only give you a stronger grounding from which to make decisions, but you also won't spend money on data you can't possibly use.

3 THE PRIVACY ISSUE IS PARAMOUNT — AND A MUCH BIGGER DEAL THAN BEFORE

An occupational hazard of location data is the potential "creepiness" factor — something the general public is growing more aware of with each passing day. Privacy regulations like GDPR* and CCPA* notwithstanding, overly intrusive location data is a PR nightmare waiting to happen, and savvy buyers want as much insulation as possible. Any provider unwilling to provide transparency into its operation — in sourcing, processing, sales, or all of the above — should be viewed with suspicion. Location data should be about tracking aggregated population movements and trends, not creepy individual device tracking.

HOW TO TURN OFF LOCATION DATA ON YOUR MOBILE DEVICE

A location data company telling you how to stop creating location data? Absolutely. These are our Norwegian values at work: while most people have decided that handing over their data for convenient services is a worthwhile trade-off, everyone deserves to make their own determinations on privacy.

All major mobile device operating systems allow the users of mobile devices to control the types of data collected in and through apps.

Apple iOS
Apple instructions on how to control iOS device location settings can be found **here.**

Apple instructions on how to limit ad tracking on iOS devices can be found **here.**

For other privacy-related settings on iOS, go to Settings from your mobile device's home screen, and select "Privacy."

Google Android
Android instructions on how to control device location settings can be found **here.**

Android instructions on how to limit ad tracking on Android devices can be found **here.**

What are Human Mobility Insights?

There are three critical ingredients — leave out any one of them, and the data won't mean much.

An insight is the meaning we derive from data: what's happening, what's likely to be causing it, and what conclusions you should be drawing from it. And it's the result of some very technologically-complex processes, combined with good old-fashioned human brainpower.

INGREDIENT #1: THE WHO & WHEN

Location Data

There are many kinds of location data out there. It's possible to determine a device's location through the bluetooth devices it connects to, the wifi networks it joins, and the towers it draws a cellular signal from. But the most reliable option is an oldie but a goodie: the Global Positioning System. GPS works by sending signals, or "pings," from your mobile device to a constellation of satellites in low earth orbit, and back again.

GPS uses triangulation to determine where on the planet your device is, and describes that position using **latitude** and **longitude.** And to prevent the satellites from confusing your device with any of the billions of others using the system, your device has a unique **identifier.** Finally, each ping from your device to the satellites has a **timestamp** to record when the device made an appearance. These four (latitude, longitude, identifier, and timestamp) are the critical components, but GPS can also include enhanced data such as horizontal accuracy*.

THE TRUTH ABOUT GPS

The appeal of GPS data is that it reveals the exact location of any device at any time. Except that it doesn't — at least not all the time, and smart users will always be cognizant of the fact that it's fallible.

For example, determining exactly where a device within a city is, is in many cases, impossible. Tall buildings block the signal to the satellites, while small storefronts packed closely together make it difficult to discern which one the person is in. Any company that claims to have 100% accurate GPS data is either lying or doesn't really understand how the technology works.

This doesn't mean that all location data derived from GPS satellites is useless. It just means that those who use it for insights need to calibrate their expectations, know the data they are buying, and factor the limitations into their partnership agreements and business strategies. It means looking under the hood at the source of the data — especially if it's being sold with a promise of pinpoint accuracy.

INGREDIENT #2: THE WHO & WHEN
Map Data

Most humans couldn't begin to guess which latitude and longitude they're at at any given moment. That's why it's important to "translate" these pairs of numbers into a human context: a map. Unacast's Digital Atlas has multiple kinds of maps to use, depending on which point of view is most relevant.

Venues + Brands: Because we work with several companies who need data on footfall trends and patterns, our Digital Atlas includes nearly every location for the top 4,500 (and counting) retail brands.

Municipal Maps: The smallest scale in our Digital Atlas is the census block group (CBG) — divisions of land and population based on the most recent census. While this is not the finest-grain map out there, we want to make sure that private information, such as people's homes, are obfuscated and not discernible to an address. We can add CBGs together to measure neighborhoods, cities, counties, states, and even the entire U.S.

BYOPOI: Bring-Your-Own-Places-of-Interest is our term for a custom location at any scale. In cases where your venue may not be in our Digital Atlas, we work with you to add it so that you're still able to access all of our groundbreaking human mobility insights.

INGREDIENT #3: THE WHY & HOW
Strategic Intelligence

It's tempting to think that once you put GPS pings on maps, you're done. Au contraire! There are literally an uncountable number of ways to make these data sets say different things, some of which are esoteric, and others that are downright conflicting. This is where the human touch becomes most important: when the answers are infinite, you need a robust team of data scientists and business strategists that helps you "ask" the data just the right questions. In other words, a correlation strategy tailored to your unique needs.

Luckily the smart Unacast brains have also spotted a shortcut: any question can be answered using a combination of just six kinds of calculations:

- **Visits:** how many people visit your location and when
- **Dwell Time:** how long they stay
- **Foot Traffic:** how many people are in the area around your location
- **Capture Rate:** how much of that foot traffic turns into actual visitors
- **Catchment Area:** where your visitors come from
- **Cross-visitations:** where else your visitors go

Human Mobility Insights for Retailers

When it comes to technology, companies can exist anywhere on the sophistication spectrum. But you shouldn't have to have an in-house data science team to harness the power of human mobility data. Unacast will meet you where you are, providing the right services and tools for your business to access human mobility insights, in whichever industry it resides.

A COMPLETE SUITE OF FOOT TRAFFIC INSIGHTS FOR RETAILERS

Measure visitation impact across your business functions and make better decisions for your business with Unacast's data insights and solutions. We help retailers answer questions like:

01 How am I performing compared to my competitors?

02 How is my local trade area changing?

03 How many people are visiting my store and what will this look like in the future?

04 Which areas and venues perform best for my brand and why?

05 How do I evaluate and prioritize new and additional locations?

06 Who is my customer and where do they come from?

Site Selection

Site selection is a very important part of growth and development for many retailers. Evaluating what markets to enter or divest from, where to build or close stores, and which new or additional locations to prioritize can be difficult analyses to conduct. But quality location data can enrich market assessments and trade area analysis allowing retailers to:

01

Uncover areas that residents and/or visitors already congregate or travel to

02

Discover which site characteristics help create a lasting visitor base

03

Pinpoint which sites meet your ideal visitor mix

04

Identify which areas have gaps in the local marketplace

05

Evaluate the foot traffic/performance of a potential site
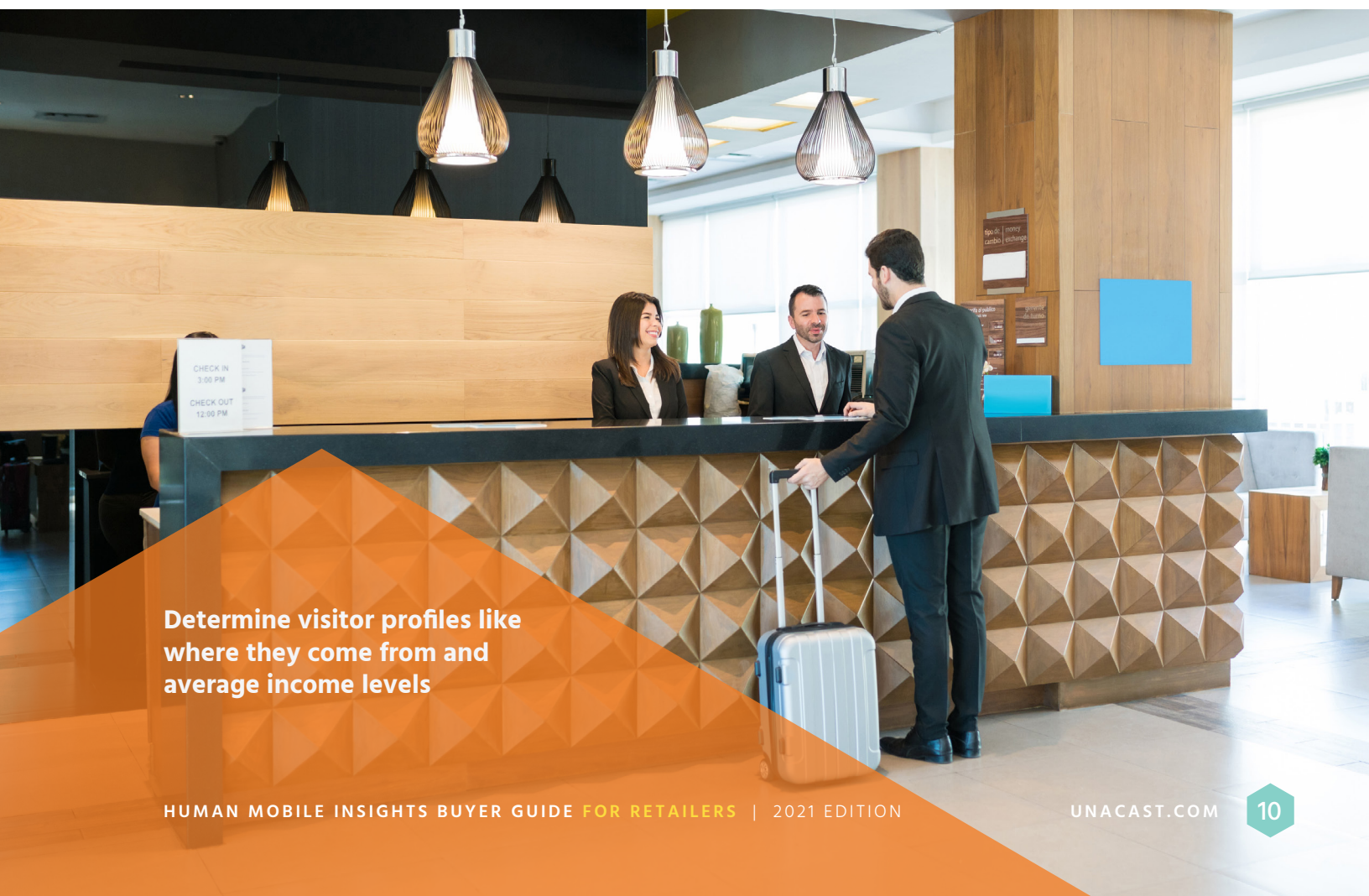
06

Forecast capture rates for new sites

Discover gaps in trade areas based on how far people travel to a location

Site Performance

Understanding a specific venue or brand's performance typically involves internal metrics like sales and revenue, profit, COGs etc. But this data doesn't capture how well a store performs in terms of visitation. By combining internal metrics with visitation data, organizations can better understand overall brand, category or industry vitality as well as consumer behavior patterns. Providing actual foot traffic counts allows users to:

01

Measure the performance of a specific site beyond revenue

02

Benchmark sites against addressable market and competitors

03

Discover patterns in foot traffic and cross-shopping

04

Determine visitor profiles and catchment area

05

Evaluate the impact of promotions, campaigns, new features, etc.

06

Forecast and manage supply chain

Determine visitor profiles like where they come from and average income levels

Competitive Intelligence

Understanding your business's competitive positioning typically involves sample-based methods. This approach can be limited in scope making it difficult to conduct with regular frequency and resulting in outputs that aren't representative of real-world trends. Using actual foot traffic insights helps retailers augment their competitive analysis by allowing them to:

01	02	03
Discover areas that residents and/or visitors already congregate or travel to	Discover which site characteristics help create a lasting visitor base	Pinpoint which sites meet your ideal visitor mix

04	05	06
Identify which areas have gaps in the local marketplace	Evaluate the foot traffic/ performance of a potential site	Forecast capture rates for new sites

Understand consumer behavior with competitors' sites and effects of their omnichannel sales

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Forecasting

Forecasting is essential for any healthy business, whether it's to understand market position and anticipate demand and sales. However many forecasting models are missing a key variable: human mobility data. Leveraging actual foot count metrics adds a real-world dimension to forecasting methodologies and models by allowing retailers to:

01

Measure consumer activity at precise locations to optimize supply chain planning

02

Explore changes in area demographic profiles that impact sales

03

Understand site potential using venue-specific foot traffic as a proxy

04

Plan for opening, closing, or growing of sites and market areas

05

Enhance site analysis with advanced metrics like capture rate, visit duration, customer origin

06
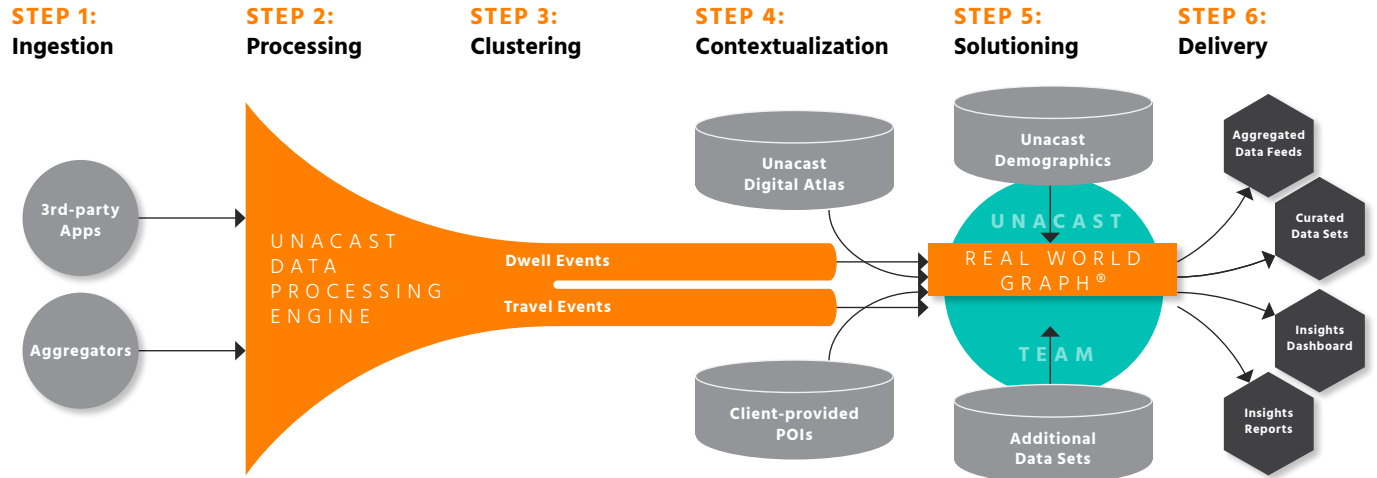
Unlock trends for any area using custom-defined locations

Monitor actual foot counts to project changes in site demand

The Process

How Location Data Becomes...   ...Human Mobility Insights

STEP 1:
Ingestion

STEP 2:
Processing

STEP 3:
Clustering

STEP 4:
Contextualization

STEP 5:
Solutioning

STEP 6:
Delivery

Diagram labels:
3rd-party Apps | Aggregators | UNACAST DATA PROCESSING ENGINE | Dwell Events | Travel Events | Unacast Digital Atlas | Client-provided POIs | Unacast Demographics | UNACAST REAL WORLD GRAPH® TEAM | Additional Data Sets | Aggregated Data Feeds | Curated Data Sets | Insights Dashboard | Insights Reports

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Unacast sources data from three different kinds of sources:

Third-party Apps: Mobile apps that collect GPS data for their own purposes are generally high-quality sources.

Aggregators*: We maintain partnerships with several collectors of GPS data — but only from those that share our commitment to transparency.

Most of the GPS data out there, frankly, isn't very good, and our data is processed to enhance quality:

Filtering: Weeding out invalid data, like duplicates, pings in the middle of the ocean, unrealistic speed or timestamps in the future.

Standardization: Giving all our data a common nomenclature ensures our various sources are apples-to-apples.

Enhancement: Employing several data-science-based techniques, such as bias correction* and extrapolation*.

The Unacast data engine also clusters individual GPS pings into events that indicate human activity:

Dwell Events: GPS pings within 150 meters of each other, in a 1.5 minute - 4 hour time period. A dwell on a certain place (venue or neighborhood) is classified as a visit.

Travel Events: GPS pings less than 10 minutes apart, when the distance between the first and last ping is greater than 100 meters.

Using the Unacast Digital Atlas or client-specified POIs*, proprietary algorithms place events in certain locations to indicate where in the physical world the activity took place:

Maps: Events can be contextualized in the context of venues (such as a store or a brand) or neighborhoods (using municipal maps).

Home & Work: Determined from dwell events that align with typical work or non-work hours, repeat in a 28-day period, and are obfuscated to the census block group to protect privacy.

It's not enough to have great, contextualized data. It still has to be correlated* in a way that gives it meaning and inspires action.

Using tools like the Real World Graph®, our data scientists and business analysts **team up to create a strategy** that accurately answers questions pertaining to your business.

Additionally, we can factor in non-location data (such as demographics, or point-of-sale) to add even more dimension to the data story.

Our insights do more than just inform — they're tailored to help make smart changes and delivered via the method best suited to each client, including:

Aggregated data sets: JSON files and other import-friendly formats.

Unacast API: Easy connections to your in-house systems.

Visualizations: Data formatted into charts, graphs, and tables.

Strategic Recommendations: Bespoke documents that illustrate data and clearly articulate likely interpretations.

Parting Thoughts

Location data is a key piece to understand the new world.

A world impacted and shaped by the COVID-19 pandemic has seen an accelerated need to understand how people move around on the planet. And to no wonder.

As the world is coming out of the pandemic nothing will ever be the same. We will work differently, live differently, shop differently, travel differently, and plan our cities differently. The only effective way to properly understand how the change in our interactions and mobility patterns impact behavior is through trusted and accurate location insights.

It's how you'll know that you have the best possible jumping-off point for strategic decision-making.

That's why, whether you select Unacast or another partner as your human mobility insights provider, our hope is that you'll use this guide to get the highest levels of quality, transparency, and value out there — though you'd be hard-pressed to find a better partner than us.

We look forward to hearing from you.

About Unacast

Creating usable and transformative insights from unwieldy amounts of data

Showing the core data as it is, without bias, skew, or preconceived notions

Unacast is committed to **understanding how people move** around on the planet by harnessing the power of location data. The gold standard for **depicting human movement,** we are **easy, trustworthy** and **international.**

Building on our transparent and open culture to make it even easier for customers to understand, test, and buy location data

Honesty and openness, even in regards to the weaknesses in our data, create the foundation of trust necessary for companies to use location data correctly

Meeting the demand for solutions in global marketplaces with products that span countries and continents

If you'd like to know more, please **talktous@unacast.com.**

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