



Localpoint®

Location Analytics

**A New Discipline At the Intersection
Of the Digital & Physical Worlds**

digby®

The advent of the internet, and with it the corporate website, created the first notion of what we call Digital Analytics today. Through the Web, businesses gained access to data on what attracted and kept their customers' attention and what did not. This was especially true as ecommerce gained traction and retailers could understand more about the buying behavior of their customers and potential customers. When they bought, how did they arrive at that decision? If not, when did they lose interest?

But analytics on the web remained similar to other types of customer measurement, serving only as a brief window into shopper behavior, lending some hints but not a complete picture. Website visits, visits to physical stores, satisfaction surveys and other customer touchpoints created a disconnected archipelago of analytical data. It was clear that the omni-channel experience customers were beginning to demand would continue to be elusive.

Enter Mobile. With the introduction of the iPhone and the rapid evolution of smartphones and tablets, users could access the web wherever they were. They also became consistently accessible, with most mobile device owners becoming so attached to the technology that they never had it far from them and they never turned it off. As a result, the phone could allow its owner to provide information to brands and receive messages from them in real-time almost 100% of the time.

Forrester Research's North American Technographics survey from 2012 shows that over 42% of North American adults access the internet multiple times a day across multiple different devices from desktops to mobile devices. What used to be a brief digital window into analytics is now growing rapidly into a window that is always open, where mobile users are "ultra-addressable."

By far the biggest single piece of new information that is available from consumers' mobile devices is the accurate location of the device, powered by the onboard GPS that has become a hallmark of all modern smartphones. Because shoppers take smartphones wherever they go, the device's location acts as a proxy for the user's location and provides clues to the shopper's context during the purchase

decision cycle, opening up a powerful new field for analytics. This field, called Location Analytics, is the pairing of digital activity with physical world context. It is likely to be the most important field in digital analytics over the next decade, as it finally provides a more unified visibility into how customers shop and engage with brands across the digital and physical worlds.

For retailers, this concept has existed for some time – the idea of shopper visibility and communication that transcends channel and becomes "omni-channel." Mobile makes this concept possible and Location Analytics is its foundation.

Getting Accurate Location Data & Concerns about Privacy

Before we delve into Location Analytics and the types of insights it can provide, it is important to know how location data is sourced, how to assess data quality, and how to address privacy issues.

The best way to get location data from mobile devices is through a mobile application distributed through that device's app store. Mobile apps can learn a device's latitude and longitude through native APIs for popular mobile operating systems like iOS and Android. Other potential location sources (mobile websites, for instance) do not have proactive and open access to the device's GPS functionality the way native or hybrid apps do. While using these APIs is fairly straightforward on its surface, it is rife with potential pitfalls.

The first pitfall is the trade-off between accuracy and device battery use. GPS uses more battery power but is highly accurate, while using low-accuracy cell tower triangulation is useful for understanding rough proximity ("this device is within 500 meters of this location") but is not terribly useful for Location Analytics. It is simply too inaccurate.

On the other hand, applications that make too-liberal use of GPS drain mobile batteries quickly. These are sometimes termed “handwarming apps” due to the way the GPS chipset generates heat as it drains the battery, good on a cold day but not good for a brand’s app store reviews.

The second and more dangerous pitfall is privacy. For both iOS and Android, an opted-in app allows the developer to access location data at any time. This means that if the developer desires, he or she can track a device as its user goes home, goes to their childrens’ school, goes to church and more. This practice is called “persistent location logging” and it is viewed as a gross misuse of location opt-in. Brands should only record location data that is relevant to the shopper’s engagement with the brand, allowing the brand to improve the customer’s experience at relevant physical world locations. Also, brands must be sure to clearly outline the intended use of location in a privacy policy that app users can access easily.

As Location Analytics becomes more prevalent, analysts will need to understand the variety of methods by which location can be measured. Further, they must require that location is gathered only around locations that are brand relevant with high-accuracy methods like GPS.

Location Analytics Data: The Basics

Location Analytics is often called “web-style analytics for the physical world.” This name is earned because the structure of location-based data, and insights derived from those data, resembles those that you might see from a website. But while website analytics are fundamentally about visits to web properties, Location Analytics chronicles events, statistics, and trends for locations in the physical world including bricks & mortar stores, stadiums, airports, golf courses, etc. Location Analytics visit data answer the following questions:

- **Latitude & Longitude**
What locations did a user visit?
- **Arrival Time**
When did he or she arrive?
- **Dwell Time**
How long did he or she stay?
- **Behaviors**
What did he or she do while he or she was in the location?

Below is just a small and simple sample location data file (see Fig. 1):

Fig. 1

User ID	Location	Arrival	Visit	Tags
1	Store # 1867	03/15/13 02:33 p.m.	47 minutes	Large Store, Region 5, 24-Hour
2	Store # 1867	03/15/13 05:15 p.m.	12 minutes	Large Store, Region 5, 24-Hour
1	Store # 1788	03/16/13 02:30 p.m.	9 minutes	Small Store, Region 5, 9-8 Hour

This very basic data set, which provides insight into two device owners and two stores, is not large in terms of the size of the data but it is dramatic in terms of the impact it could have in the way a business approaches its physical locations. This tiny excerpt of data allows us to ask:

- What does it mean that User #1 visited one store for a long period of time and then visited another store for a short period of time? Was something out of stock? Does this inconsistency happen frequently?
- User #1 visited both stores around 2:30 p.m. Is this a pattern? Why?
- User #2 visited Store #1867 after 5 p.m. but did not stay as long as User #1 did earlier in the day. Does this tell us something about people who shop during the workday vs. after the workday?

It is not difficult to see how similar data across millions of devices and hundreds of millions of visits could not only answer some of these questions but also cause a brand to ask new questions. Add to these inquiries the ability to understand visits to non-store locations like nearby shops, attractions, landmarks or transportation points and to record actions that users complete through the app or through other channels while in different locations, and the potential insight ramps up an order of magnitude. Clearly, understanding behaviors at locations can lend very powerful insight into user intent and help brands devise better ways to serve and market to their customers.

Distilling Location Insights: A Framework

With your customers' mobile devices around the world streaming millions of location data points in real-time, devising the best way to turn this data into information from which actionable insights can be produced is overwhelming.

Creating some simple divisions in how the data is presented can start to make it more manageable, and the best ways to initially slice this data is by using the dimensions of time and perspective.

Perspective

Customer-Focused vs. Location-Focused

The first way to approach location insights is a matter of looking at the data through two different lenses: the customer vs. the location.

Is the objective to gain insight into customer behavior? This can inform broad new segmentation profiles based on location behavior and can help determine marketing or service approaches that are customized to the needs of an existing specific customer or customer profile.

Or is the objective to gain insight into a specific location, such as retail stores? This allows retailers the ability to compare and contrast stores based on their usage and performance in order to fine-tune everything from store layout to merchandising to marketing

Time

Real-Time vs. Long-Term

A second very valuable dimension in dissecting location data is to understand when location insights produce value.

Since data is available in real-time, is the intent to develop insights that are temporary and produce immediate opportunities for modifying marketing or services approaches?

Or is the intent to develop long-term insights supported by a large amount of data, leading to more structural changes to physical and digital experiences?

Taking these two dimensions and mapping them into a quadrant framework produces the view shown on the next page (see Fig. 2, below):

Fig. 2

	CUSTOMER-FOCUSED	LOCATION-FOCUSED
REAL-TIME	Where are customers or customer segments now? How long they have been there? What are they doing?	Currently, how many visits are there to locations? How long have customers been at those locations? What is happening at those locations?
LONG-TERM	Where do customers or customer segments go? When do they go there? How often do they go there? How long do they stay?	Which locations are the most/least visited? When are they visited? How frequently are they visited? How long do customers stay?

While this framework works conceptually, it is useful to see some examples of its application below. Note that for these examples the simple location visits data is expanded slightly to include non-store locations and an understanding of certain mobile activities like barcode scanning and app feature use, capabilities that can all be deployed entirely within a mobile rich application:

Insights

Real-Time, Customer-Focused

- Six loyal customers are currently scanning barcodes of Product 2300088 in Store J.
- Loyal Customer 101113423 has opened and is using their app's My Personal Wardrobe feature.

Long-Term, Customer-Focused

- Cake Decorators are more likely to visit stores in the afternoon whereas Scrapbookers are more likely to visit stores in the evening.
- Local customers tend to visit store locations near concert venues shortly after the concert.

Real-Time, Location-Focused

- Store C currently has nearly twice as many app-holding customers than it typically does during this time period.
- Redemption of Coupon 67099 in Store X in its first three hours since release is only 25% of what similar Coupon 67098 achieved.

Long-Term, Location-Focused

- Store G, which is in close proximity to Store H, receives twice as many visits as Store H.
- Average store dwell time at Store P is 53 minutes, whereas average store dwell time at Store Q is 22 minutes.

Expanding Location Analytics to the Enterprise

Location analytics can be extremely valuable in its own right because the very apps that help to generate the data can also be used to act on insights. Marketing or customer service notifications can be sent in real-time, or the visual and functional appearance of the app can be changed based on insights that have been gleaned, either instantly or over time.

But the concept of Location Analytics is most powerful when systems generating location data are connected with other systems within the enterprise including CRM, Loyalty, Marketing Automation, POS, Customer Service, Space Management, Merchandising and Business Intelligence systems and when these systems are leveraged, provide a new “layer” in the integrated analysis and response system that affects every customer-facing aspect of the enterprise.

The addition of this new, real-time, highly contextual intelligence changes everything for retailers, brands and media companies. Retailers are able to better understand how their online spend and website visits lead to bricks & mortar location visits and how visits to bricks & mortar locations lead to use of online resources during their store shopping experience. Marketers are therefore able to create correlations between on and offline events and their impact on bricks and mortar store locations, measuring how a local radio spot affects store traffic or how an update to store layout affects dwell time.

The real-time aspect of location analytics enables a more adaptive approach to marketing, allowing a business to change their marketing and engagement in real-time to meet an individual consumer's need or to improve the experience for all customers. If we know when the consumer visits the store or uses the mobile app to scan a barcode, we now have a much higher degree of context and can market to that consumer more relevantly. If we know when

traffic is growing at a store location or when key performance criteria like dwell time increases we can correspondingly change the operation, bringing associates off break or opening more registers as just a few examples.

Location analytics allows for comparative measures as well. Tracking activity at store locations and mapping those events to consumer profile information allows the marketer to know which stores are seeing the highest repeat shopping rates or which campaigns generate the highest conversion rate to in-store foot traffic. By comparing results across locations and over time, organizations can optimize the way they plan and execute digital and real-world marketing and operations.

By connecting the location analytics intelligence captured by Localpoint® to other sources of data about consumers and stores, brands are able to develop a more complete, 360-degree picture of the consumer.

The goal of an omni-channel business is to both create consistency of the customer experience across channels, and also to leverage the knowledge of consumers' behavior across channels to market more relevantly to shoppers. Localpoint® is the bridge that allows brands to achieve the omni-channel goal by providing the vital identifying link between channels.

The power of combining a brand's current analytical data with location data across the retail enterprise is summarized on the next page (see Fig. 3).

Clearly, location data gives companies, and in this case retailers, the ability to answer questions they have been asking for a long time. Going forward, the collective data produced by this integrated system allows for more predictive modeling.

Fig. 3

	CURRENT DATA	LOCATION DATA	BUSINESS INSIGHT
MERCHANDISING, LAYOUT, SHOPPER MARKETING	Inventory, Planograms, Focus Groups	Visit Volume & Dwell Time Fluctuations	Is shopper engagement improved by adjusting inventory, layout or in-store marketing?
MEDIA PLANNING & BUYING (OFFLINE & ONLINE)	Timing, Markets and Creative for Campaigns, Brand Recall Studies	Volume and Fluctuations of Local Store Visits	Does store traffic increase with campaigns on local media?
DIRECT MARKETING (MAIL, EMAIL)	Deliveries, Opens, Clickthroughs, Offer Redemptions	Target Location Visits	How does direct marketing convert to store traffic?
LOYALTY PROGRAMS	Purchase Frequency, Offer Redemptions	Visit Frequency, Visit Pathing and Multi-Store Visits	How do loyal customers engage with physical stores to engage with the brand?
CUSTOMER SERVICE & CLIENTELING	Customer Satisfaction Surveys	Return Visits	Which stores produce the most satisfied and loyal customers?
ECOMMERCE	Time on site, purchase conversion rate	In-store mobile browsing and purchase frequency	How do store visits affect ecommerce and vice versa?
MOBILE MARKETING (NOTIFICATIONS / SMS)	Deliveries, Opens	Target Location Visits	How does mobile marketing drive user behavior, store traffic and time in-store?

Connecting shopper profiles with location-based behaviors creates a historical view of real-world shopping behaviors that can be applied to future scenarios. Seasonal visit histories, multi-location pathing and reaction to on- and offline marketing programs are just a few of the models that retailers are building to optimize their bricks and mortar locations' marketing spend and operations footprint.

But the connections between location-sensitive mobile app users and the rest of the IT footprint at a retailer can go beyond providing insight.

It can also enable real-time, location-specific responses in the real world. This is extremely powerful and creates a vast data-driven edge over the competition.

Looking back at the location analytics insight examples presented earlier, one can imagine some omni-channel actions that are led by mobile but executed in every phase of the business.

The use cases below depend on the ability of a retailer's different departments to work together in concert, and it might feel like a future that is years away. However, using mobile and location data as the starting point, linking systems together can happen incrementally with each new integration. Eventually, the retailer will be able to both look clearly and act efficiently across the enterprise.

Insights

Real-Time, Customer-Focused

- **Insight**

Six loyal customers are currently scanning barcodes of Product 2300088 in Store J.

- **Response**

Heavy barcode scanning on Product 2300088 initiates an action in a pricing system that looks up competitive discounts, which discovers a nearby competitor is discounting this product. A price adjustment is scheduled and an offer on a bundle that includes the item is sent out to all in-store app users at Store J and all other stores that are near that competitor.

Long-Term, Customer-Focused

- **Insight**

Cake Decorators are more likely to visit stores in the afternoon whereas Scrapbookers are more likely to visit stores in the evening.

- **Response**

Store signage is skewed toward advertising baking products before 5 p.m. and skewed toward scrapbook products afterward. Staff shifts are optimized to provide more expertise in the appropriate categories at the right time.

Real-Time, Location-Focused

- **Insight**

Store C currently has nearly twice as many app-holding customers than it typically does during this time period.

- **Response**

Associates at Store C are notified of the fluctuation and the normal number of mobile POS associates is doubled temporarily to speed up the checkout process. A "Share the App" incentive goes out through the retailer's app to everyone currently in the store to drive additional downloads through sharing on social media.

Long-Term, Location-Focused

- **Insight**

Store G, which is in close proximity to Store H, receives twice as many visits as Store H.

- **Response**

A brief inquiry with Store H management reveals that staff turnover is much higher than Store G and general customer satisfaction lower. Store G management is staffed temporarily with Store H to share best practices on staff training, customer service and staff retention.

Getting Started with Location Analytics

For brands with a rich application, it is incredibly simple to start gathering location insights that your customers are willing to share in a privacy-sensitive, accurate and battery-friendly way.

These data generate insight almost instantly, and the ability to act on the data through the very application where you gathered them means the data produce an entire closed loop of value at the outset.

Four simple steps form Digby's® Localpoint® Location Analytics Maturity Model and these steps could help any enterprise map its plan and progress:

1. Basic Location Analytics

Begin gathering basic location data and generating insights using the Location Analytics Insight Framework.

2. Basic Mobile Messaging

Develop messaging approaches through mobile apps that provide data with mutual value for brand and customer, either through improved customer service or more relevant marketing.

3. Enterprise Location Analytics

Append location data with other enterprise data to add the "Location Layer" and extend organizational insight and measurement.

4. Enterprise Location Response

Create hyper-targeted responses by linking location-based events and insights across every customer-facing channel.

For brands without a rich application, understanding Location Analytics and how it could change how you interact with your customers forever might rejuvenate the interest in developing an application. Mobile is

driving a new generation of contextual understanding, and brands that understand mobile's impact will have a serious advantage over those who do not. The key for all brands, with or without an app, is to make sure to stay focused on value the app offers users. This new channel, and the location data that go along with it, has to earn and keep its space on customers' phones and in customers' lives.

About Digby®

Digby® leverages mobile and location technologies to help brands achieve their strategic omni-channel goals - to drive store traffic through location-marketing, engage with consumers in the brick and mortar store and provide web-style analytics to the physical store - all through their own branded mobile experience. Though the Localpoint® Mobile Platform, Digby® delivers hosted software, rich mobile application SDKs and full-service, turnkey mobile solutions designed for smartphones and mobile websites, allowing brands to attract, influence and own the relationship with their customers. Digby®, powering millions of apps in thousands of locations around the world, has been enabling top brands since 2006 including HP, Cabela's, RadioShack, Orvis and many more. Learn more about Digby® at www.digby.com.

Contact Us

sales@digby.com
866.802.0298