Making People's Lives Better with Transformative Data and Analytics – And How Spatial Analysis Plays a Key Role
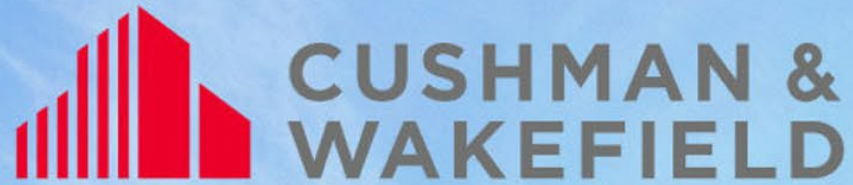
February 15, 2022

Confidential

ENVIRONICS
ANALYTICS

Cushman & Wakefield Asset Services (CWAS) provides comprehensive property management services across Canada and ensures maximum, measurable outcomes for all types of real estate investments.

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ANALYTICS

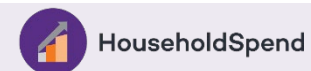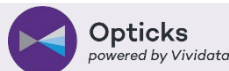# Case Study: Cushman & Wakefield

CUSHMAN & WAKEFIELD

Challenge

To better inform business decisions, CWAS was seeking actionable data about their visitors. The hyper-competitive retail real estate industry required them to take a deeper dive into their markets to appeal to the most attractive local customers.

Solution

1. Used mobile movement data to determine trade areas, develop visitor profiles and understand competitive visitation

2. Created target groups by linking to commercial off the shelf segments, allowing CWAS to analyze their trade areas and the impact of local competition

3. Used primary research to understand consumer preferences re desired attractions, retailers, etc

Opticks *powered by Vividata* ▸ PRIZM ◉ SocialValues ⤵ MobileScapes 📊 HouseholdSpend

ENVIRONICS ANALYTICS

Case Study: Cushman & Wakefield

CUSHMAN & WAKEFIELD

Results

The insights from this initiative are informing everything from property design and amenities, to the retailers and events that attract shoppers.

CWAS properties also saw a **40% increase in engagement and a lift in sales** through geo-targeted online ads.

"We wanted a simplified solution that wouldn't just sit on the shelf. Environics Analytics has helped us market the shopping centres more strategically, and in some cases, redefine trade areas. We've seen great results in terms of reaching new audiences, and increased traffic and sales."
—*Director Retail Marketing | Cushman & Wakefield Asset Services*

ENVIRONICS ANALYTICS

General Motors of Canada Company is the Canadian subsidiary of General Motors. The company markets Chevrolet, Buick, GMC and Cadillac vehicles through Canada's largest dealer network.

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Case Study: General Motors (GM)

GM CANADA

Challenge

GM wanted to pursue a new data-driven analysis to understand its Toronto buyers. However, it needed buy-in from its Toronto area Chevrolet dealers to switch to a local segmentation approach using data and analytics.

Solution

1. Used EA segments to divide GM's customers into 1 of 7 direct marketing groups

2. Personas were developed for each group and analyzed for sales values and projections

3. Media plan developed for each segment via links from EA segments to media and channel preferences from reliable surveys and media measurement suppliers

DemoStats   **PRIZM**   **SocialValues**   **ENVISION**

ENVIRONICS ANALYTICS

Case Study: General Motors (GM)

Results

The analysis helped dealers with their local marketing efforts.

They are now more discerning about their sponsorship spend because their efforts are aligned with the target audiences.

"The foundation of the EA data is to determine who we are already selling vehicles to and where can we find more of them. Most dealers plan to use the information in their marketing plans."

—Jason Easton, Director of Sales, Service and Marketing for Toronto/GTA | General Motors Canada

The Downtown Vancouver Business Improvement Association (DVBIA) supports and promotes the shared interests of 7,000 businesses and property owners in the central 90-block area of Vancouver's downtown core.

ENVIRONICS
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Case Study: Downtown Vancouver BIA (DVBIA)

Challenge

To better understand the business impacts of COVID-19, the DVBIA needed to compare their visitor base with pre-pandemic levels. These data insights would be used to support their member businesses with pandemic recovery.

Solution

1. Provided automated template and reports including visualizations to analyze monthly visitor traffic based on mobile movement data;

2. Visitor distribution files, maps, summary tables and visualizations are updated to allow agile adaptation of products and services

DemoStats   PRIZM   MobileScapes

ENVIRONICS
ANALYTICS

Case Study: Downtown Vancouver BIA (DVBIA)

Results

The data helped identify what the DVBIA's primary visitors now look like—young, single and diverse—and respond to sudden changes in visitor traffic.

These insights are helping the DVBIA plan future events and retailers that are appropriate for the area and determine their ideal marketing mix.

"Understanding who visited the downtown core pre-pandemic and who continued to visit throughout has helped inform our recovery efforts. Environics Analytics' support has been vital in highlighting opportunities for our member businesses to better target their marketing campaigns."
—*Gavin Duffus | Economic Development Manager | Downtown Vancouver Business Improvement Association*

Harry Rosen is an iconic Canadian brand in high-end men's clothing. The proudly Canadian company has 17 stores in eight major Canadian markets and employs more than 1,000 associates.

Case Study: Harry Rosen

Challenge

Harry Rosen did not have a complete view of their customer base and wanted to attract more millennials. Occasional shoppers represented 80% of total sales and the company needed to gain a better understanding of them to enhance business decisions.

Solution

1. Customer database was linked with EA segments and target audiences were created.
2. Neighbourhoods were identified with the highest concentration of target customers to improve direct mail campaigns and OOH advertising opportunities.

PRIZM

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Case Study: Harry Rosen

Results

Insights allowed Harry Rosen grow lifetime value by identifying brands with the greatest appeal to specific target segments.

They saw a **16% lift in targeting accuracy**, translating to significantly more sales.

"If a customer had only one transaction with us, we could never estimate their potential, but with PRIZM we are able to get a sense of what that might be. If we can up our incremental transactions by just a tiny bit, that's a huge win."

—Jay Sewell, Director of Analytics | Harry Rosen

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Tourism New Brunswick is a government organization that is responsible for growing tourism in the province. The organization operates the province's official travel portal and collaborates with cities and attractions to reach and engage their target audiences.

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Case Study: New Brunswick Tourism

Challenge

Tourism New Brunswick wanted to improve targeting and marketing effectiveness of its campaigns. They lacked transactional data to verify whether their target segments were visiting the province and where they were travelling.

Solution

1. Mobile location data was used as a proxy for transactional data
2. Areas of interest were geofenced, analyzed with mobile data and visitors assigned their common evening location
3. EA segments (for Canada and the US) enabled better understanding of travellers' behaviours, preferences and attitudes, and detect travel patterns to better target campaigns

DemoStats   PRIZM   SocialValues   Opticks *powered by Numeris*

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Case Study: New Brunswick Tourism

Results

The tourism department gained insights about their visitors, such as the difference between Canadian and American travellers.

With this approach, they can refine marketing efforts and understand why certain segments are underperforming.

"No-Hassle Travellers' are 93 percent more likely to visit New Brunswick than the average Canadian Household. We never would have known this before."

—*Stéphanie Robichaud, Senior Business and Data Analyst | Tourism New Brunswick*

True North Sports + Entertainment (TNSE) is a sports and entertainment company based out of Winnipeg, Manitoba. TNSE owns and operates the Winnipeg Jets (NHL) and Manitoba Moose (AHL), in addition, hosts concerts and other events at Bell MTS Place, Burton Cummings Theatre and Bell MTS Iceplex.

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Case Study: True North Sports + Entertainment

TrueNorth | SPORTS + ENTERTAINMENT

Challenge

TNSE wanted to better understand their fanbase and build a robust picture of who attended Winnipeg Jets and Manitoba Moose Games. To do this, they needed to identify target segments to drive local fan acquisition and engagement efforts. TNSE also aimed to use this data to help acquire new corporate partnerships.

Solution

1. A profile analysis was done using TNSE's existing data to reveal fan demographics and purchase behaviours relative to the Canadian market

2. Four target groups were developed and defined by key demographic differences between them

3. Further analysis created target groups based on ticket purchase behaviour for acquisition-focused marketing initiatives

DemoStats   PRIZM   Opticks *powered by Numeris*

ENVIRONICS ANALYTICS

Case Study: True North Sports + Entertainment

Results

The segmentation analysis gave TNSE a more complete view of their fans and market potential.

By focusing on these target groups, TNSE's campaigns saw **improved response rates and fan conversions**. Overall, the project work is driving TNSE's business forward on multiple fronts.

"The depth and breadth of data available to us through Environics Analytics has allowed us to glean detailed depictions of the demographics, behaviours, and interests inherent to our guests and fans."

—*Kyle Braun | Business Analyst | True North Sports + Entertainment*

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Walmart Canada is the Canadian subsidiary of Walmart. Since its inception in 1994, Walmart Canada has grown more than 400 stores nationwide serving more than 1.2 million customers daily.

Case Study: Walmart Canada

Challenge

Walmart Canada wanted to evaluate the opportunity of launching a nationwide online grocery business. The retailer wanted to anticipate their customers' behaviour and predict sales from the new service at an individual store level.

Solution

1. Linked EA segment data and transactional data to identify best performing lifestyle segments

2. Developed a model to identify a unique combination of five variables – that were driving response

3. Prioritized launch locations according to lifestyle and demographics of store location's customers and developed target

Opticks eShopper
powered by AskingCanadians™

PRIZM

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Case Study: Walmart Canada

Results

Online grocery expansion was a strategic and financial success, with annual sales exceeding the company goal by **more than 40 percent**.

Insights from this project were also used to refine offerings beyond grocery.

"The project has shown that there is a wealth of information available about customers beyond in-house databases that can be leveraged in innovative ways throughout an organization."

—*Tom Maryniarczyk, Director of Site Experience & Analytics | Walmart Canada*

Westoba Credit Union is a full-service financial institution, serving over 37,000 members and with 16 locations scattered across Manitoba.

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Case Study: Westoba Credit Union

Challenge

Westoba wanted to develop a clear picture of their members, identify their needs and serve them effectively. By leveraging member behaviour data, they sought to identify growth opportunities, optimize retention strategies and develop customized sales and marketing plans.

Solution

1. Performed data hygiene, integration across departments and filling of gaps with our data
2. 10 custom segments were developed, and key segments were personified to differentiate between market
3. A dashboard was developed to help socialize the segments and personas across its entire operation

DemoStats   SocialValues   WealthScapes   MoneyMatters
powered by Canadian Financial Monitor   Behavioural

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ANALYTICS

Case Study: Westoba Credit Union

Westoba CREDIT UNION LTD.

Results

Strong results in digital e-blasts, which had a **30% open rate** and a **13% click rate**, far higher than the financial industry's standards.

Preferred shares offering sold out and a new chequing account was created called WestobaONE.

"[Environics Analytics] goes above and beyond to make sure the end products they deliver meet your needs and you fully understand how to implement them. This is a big help because when it comes to data analytics, not everyone is an expert and having people to lean on for assistance is key."

—Amy Doerksen, Marketing & Communications Director | Westoba Credit Union

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But what, you may ask, does this have to do with GIS and spatial analysis?

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Building Mission Critical Data

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From Many Sources, Using Best Methods

DATA PROVIDERS
(85+ SOURCES)

TomTom · ENVIRONICS RESEARCH · cleanlist.ca
nielsen · askingcanadians a Delvinia company
NUMERIS · vividata
UberMedia · mastercard · nlogic
EQUIFAX · OXFORD ECONOMICS · BARON LISTS
CANADA POST / POSTES CANADA · Experian A world of insight
Ipsos · EnsembleIQ · CAP Index
Statistics Canada
Bell Media · Kalibrate
CSCA · EPSILON · dun & bradstreet
House Price Index TERANET AND NATIONAL BANK OF CANADA

Geodemography
KNN
Microsimulation
Predictive Analytics
Typological projection
Machine Learning
Benchmarking
Control total calibration
Clustering
Normalization
Bootstrapping
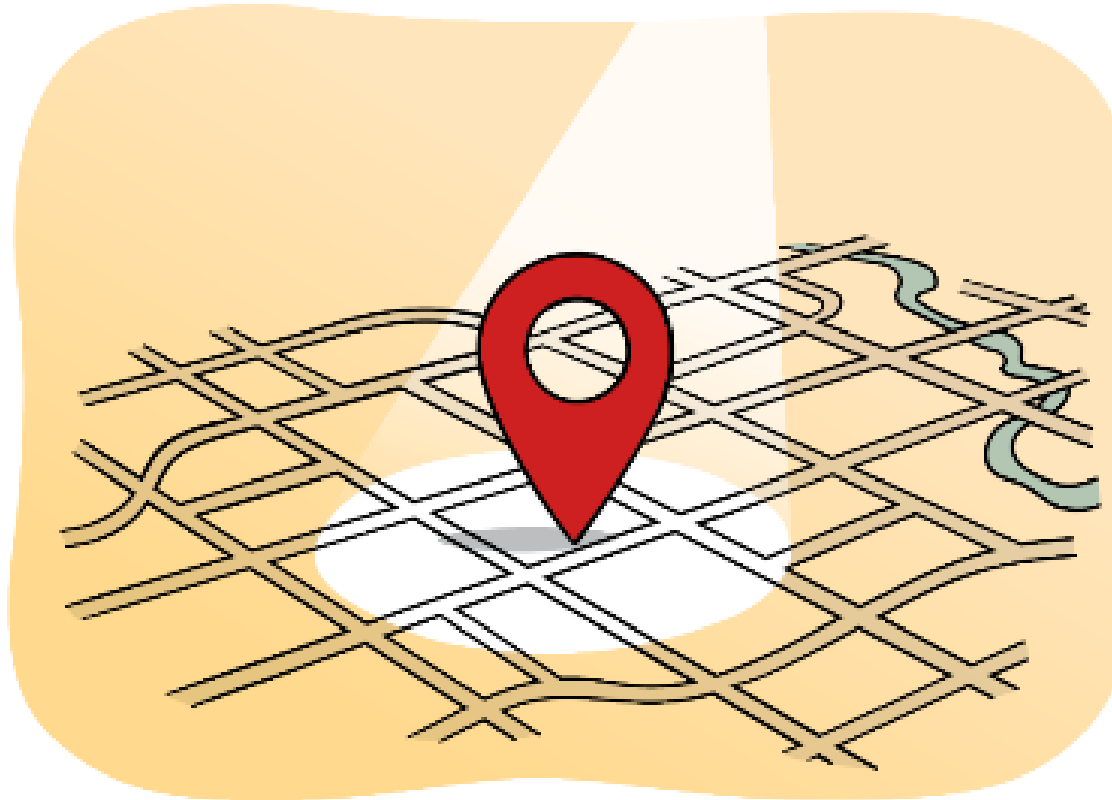
50,000 data variables available at
the 6-digit Postal Code Level

- Demographic
- Segmentation
- Psychographic
- Behavioural
- Financial
- Mobile Analytics

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# Built to a Geo Framework

DATA PROVIDERS
(85+ SOURCES)

TOMTOM
ENVIRONICS RESEARCH
nielsen
askingcanadians™
a Delvinia company
NUMERIS
UberMedia
mastercard
EQUIFAX
OXFORD ECONOMICS
CANADA POST / POSTES CANADA
Experian — A world of insight
Ipsos
Statistics Canada
EnsembleIQ
Bell Media
EPSILON
CSCA
dun & bradstreet
House Price Index — TERANET AND NATIONAL BANK OF CANADA

Demographic

Segmentation

Psychographic

Behavioural

Financial

Mobile Analytics

50,000 data variables available at
the 6-digit Postal Code Level

Built on Foundation of Geodemography

Combines geography (GEO) and demography

Uses geographic codes (such as postal codes or ZIP+4) as a unique indicator to combine and summarize large amounts of data

L1S 5W5

$ 124K INCOME

64131-0721

$ 56K INCOME
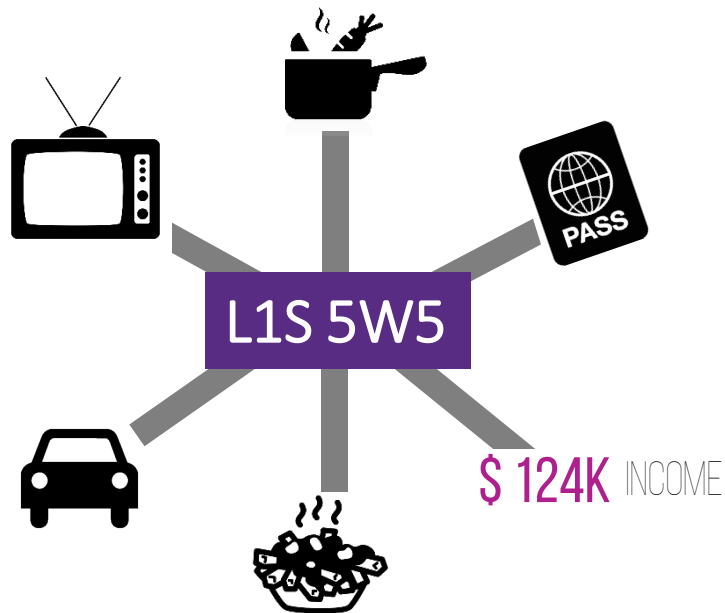
Fundamental Ideas

**The geodemographic approach is based on 3 ideas:**

1. The first law of geography; the attributes of persons/households that are close together are more similar that those that are far away (*positive spatial autocorrelation*)

2. "Birds of a feather flock together"; so knowing a person's neighborhood (at a small spatial scale) helps make good inferences about the person

3. When privacy is critical one can make use of small-area attributes as reasonable estimates of the attributes of residents of these small areas

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Geodemography – Why it Still Works

- Uses census data so it can be done in many places
- Tied to the ground, not the individual
- Privacy friendly
- Easy to name, describe, and use
- Segments make sense to most people as way to describe reality
- Designed for granularity so can be aggregated to larger custom groups
- Ability to join disparate databases – big advantage
- Provides market sizing at small geographic level – big advantage
- Country specific
- Need a lot of clusters to cover the variety of "real groups"
- Harness new types of data

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It Starts with Up-to-Date Small Area Demographics

- Current-year estimates for more than 750 population, education, cultural diversity and income variables and three, five- and ten-year projections for approximately 500 variables

- Created with data from Environics Analytics, Statistics Canada, Oxford Economics, Equifax, CMHC and Canada Post and a combination of econometric, demographic and geographic models

- Available at postal code level for current-year estimates and dissemination area level for future-year projections
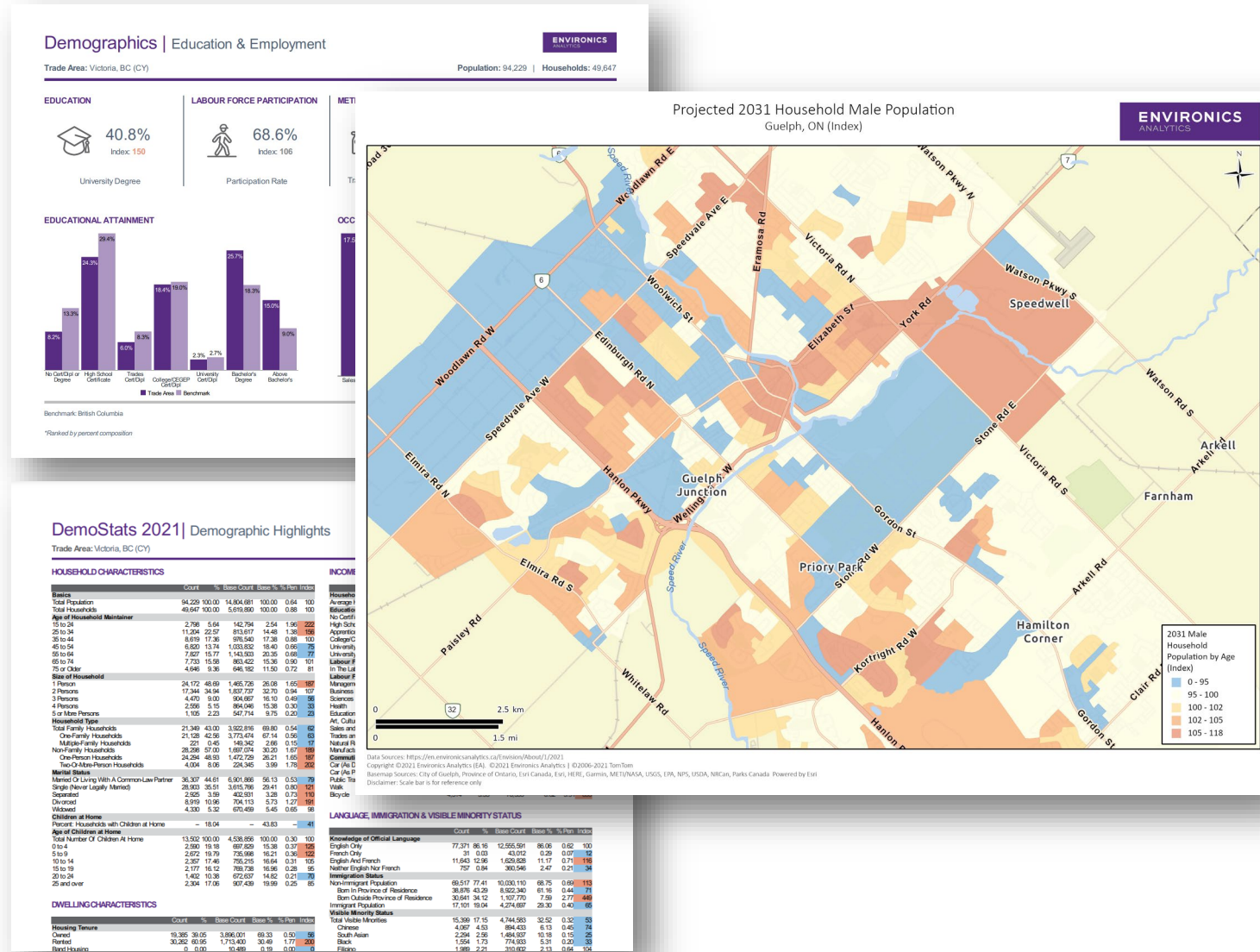
PRIZM

PRIZM® is our pioneering segmentation system that classifies Canada's neighbourhoods into **67 unique lifestyle types**

PRIZM Segments

07 MATURE & SECURE

F1 UPSCALE URBAN FRINGE — OLDER FAMILIES & EMPTY NESTS M1

Older and mature upscale city dwellers

Social Group   Lifestage Group

- Socio Economic Status Indicator (SESI)
- Segment Name
- Segment Picture

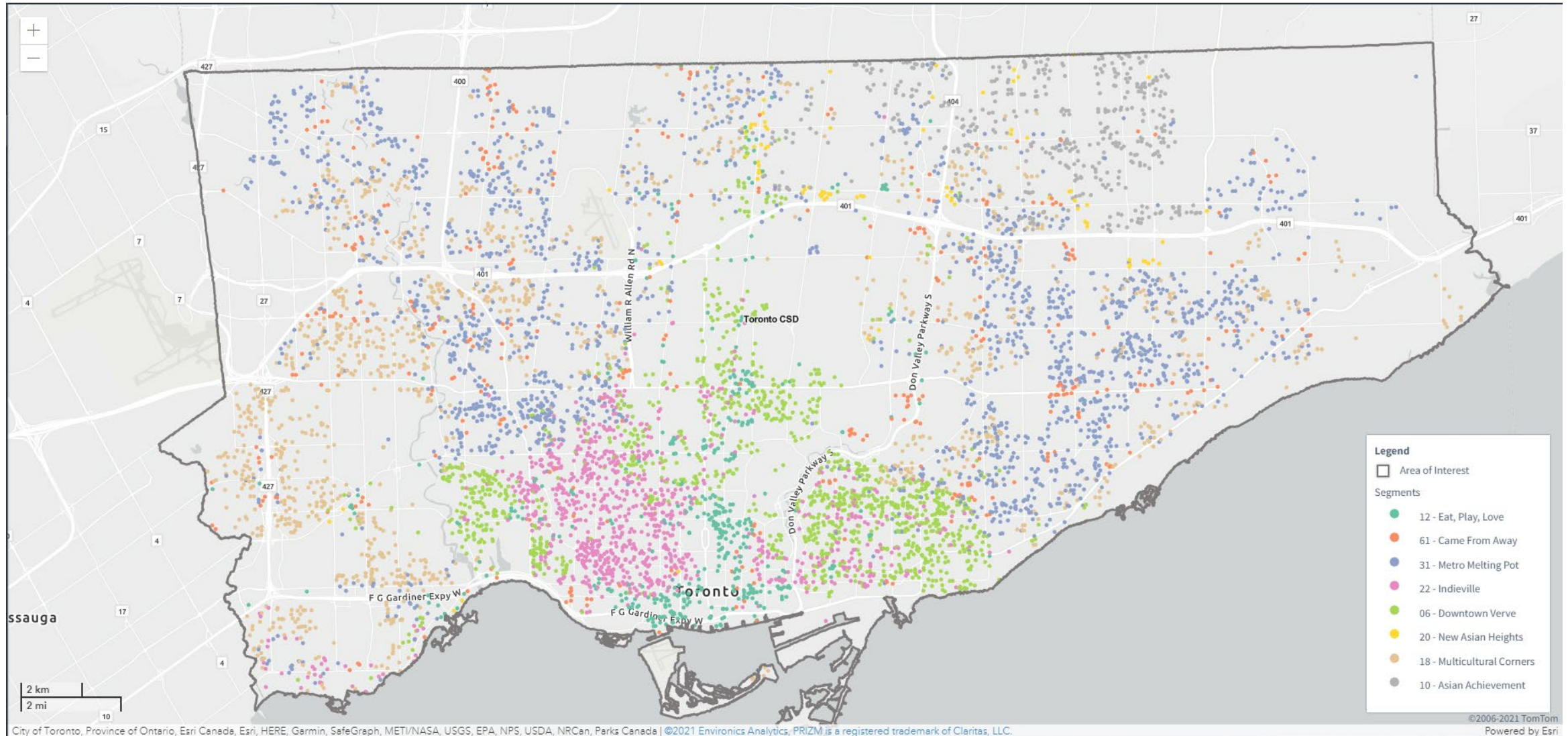## Data Inputs

- Demographic
- Psychographic
- Financial
- Geographic

- Shopping
- Leisure
- Media
- Motivators

How is it Built?

- Exhaustive review of available data
- Select themes and variables
- Develop and assign weights
- Use clustering algorithms
- Create maps and reports
- Evaluate, adjust and repeat

PRIZM: Segment Dot Map

Legend

☐ Area of Interest

Segments

- 🟢 12 - Eat, Play, Love
- 🔴 61 - Came From Away
- 🔵 31 - Metro Melting Pot
- 🩷 22 - Indieville
- 🟢 06 - Downtown Verve
- 🟡 20 - New Asian Heights
- 🟤 18 - Multicultural Corners
- ⚫ 10 - Asian Achievement
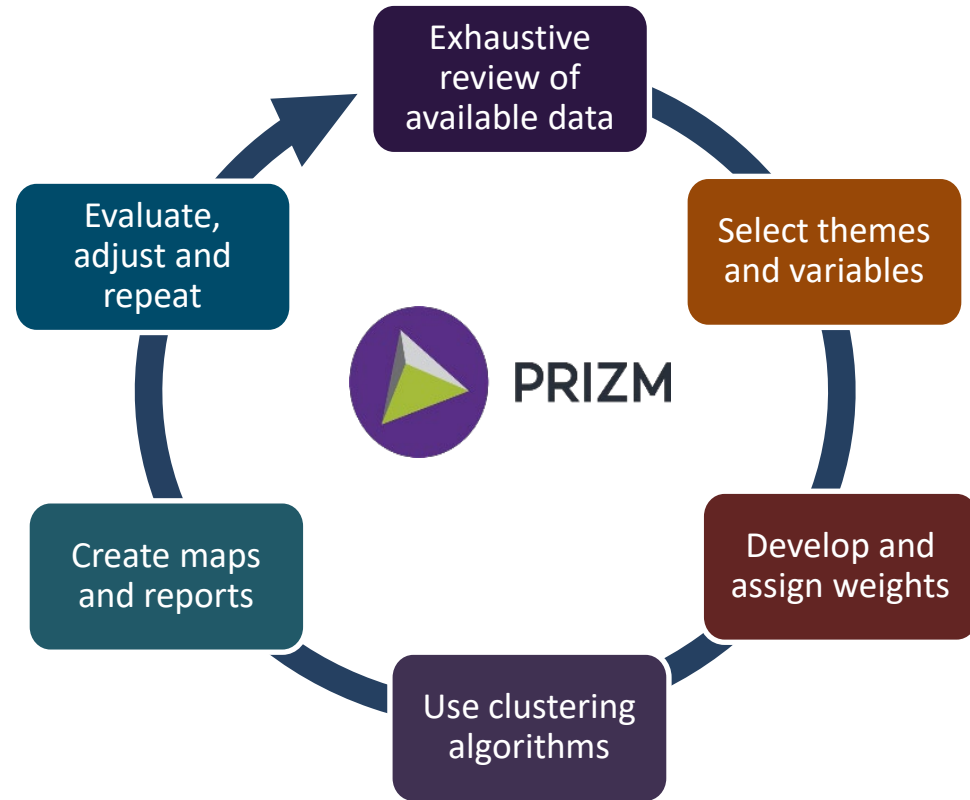
City of Toronto, Province of Ontario, Esri Canada, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, NRCan, Parks Canada | ©2021 Environics Analytics, PRIZM is a registered trademark of Claritas, LLC.

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Powered by Esri

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NEXT…Make Rich Survey Data Actionable

There are 2 types of survey modeling frameworks:

Coefficient-based

Assign respondents to survey a segment code (PRIZM) based on their postal code

Tabulate the number of people or households that purchase the product at the national segment level.

So, if in segment 5, 672,931 people out of 2,301,764 purchase the product, then 29.2% of people are projected to purchase.

Therefore, all segment 5 people have the same propensity to make the purchase regardless of geography.

Modeled

Data are modeled directly to the postal code level using the demographics of the respondent and the demographic characteristics of the neighbourhood
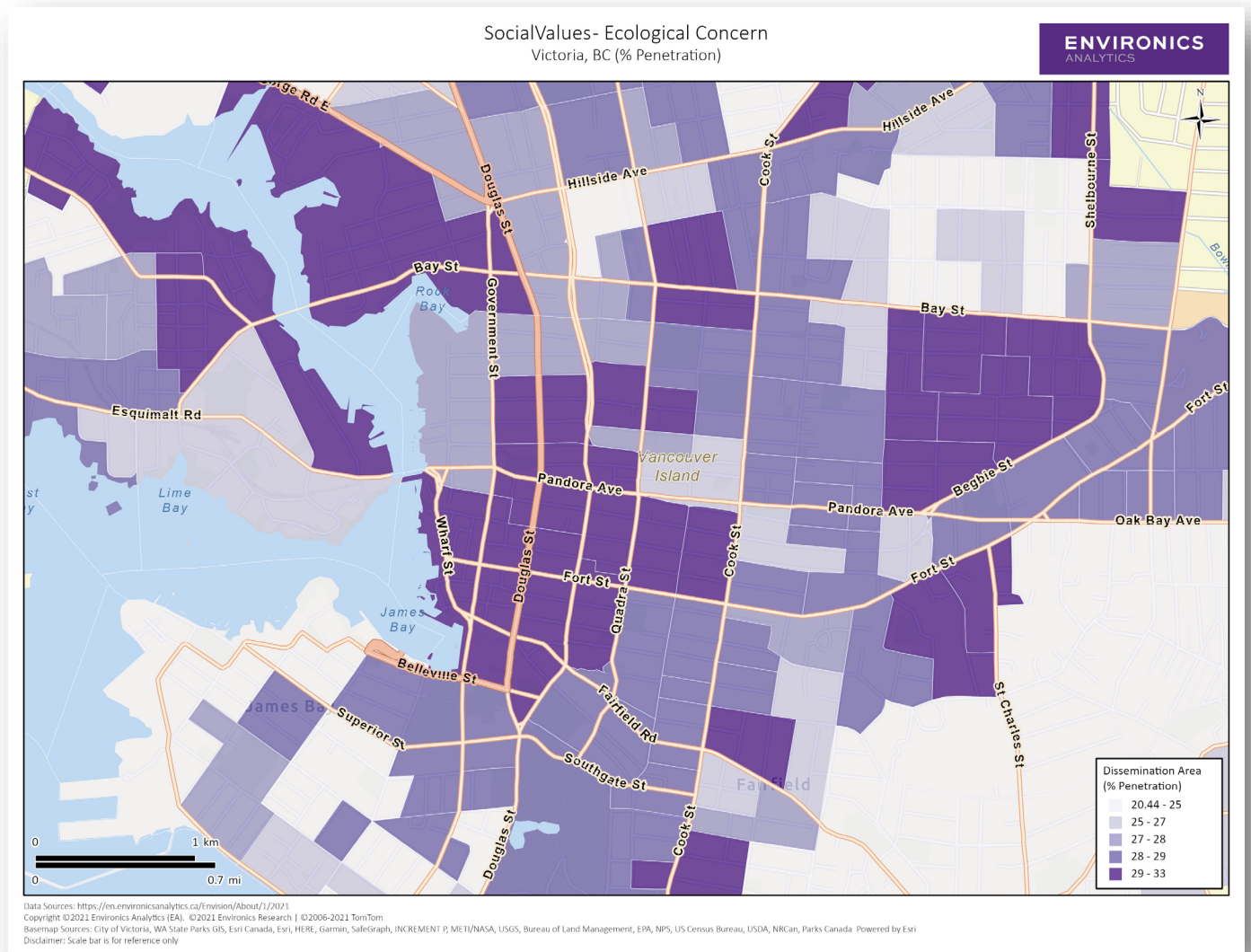
Models can be constrained by region

There is no direct relationship to PRIZM

In theory, each postal code obtains a unique set of propensities

Geodemographics to Psychographics?

- Psychographics describe the mindset of customers and determine the best message to engage them

- Derived from the Social Values survey by Environics Research, which conducts an annual nationwide survey of 10,000 respondents measuring human motivation and social relations – 250 values

- Behaviour is often used as a surrogate but mindset is key – especially in didgital

SocialValues- Ecological Concern
Victoria, BC (% Penetration)

Dissemination Area
(% Penetration)
20.44 - 25
25 - 27
27 - 28
28 - 29
29 - 33

Data Sources: https://en.environicsanalytics.ca/Envision/About/1/2021
Copyright ©2021 Environics Analytics (EA). ©2021 Environics Research | ©2006-2021 TomTom
Basemap Sources: City of Victoria, WA State Parks GIS, Esri Canada, Esri, HERE, Garmin, SafeGraph, INCREMENT P, METI/NASA, USGS, Bureau of Land Management, EPA, NPS, US Census Bureau, USDA, NRCan, Parks Canada Powered by Esri
Disclaimer: Scale bar is for reference only

OK but now we have so much data – why do these old methods matter?....BIG DATA

- Volume, Variety, Velocity… Usually with spatial and temporal attributes
- Typically collected on daily cadence or in real-time, with billions or trillions of observations per year with some form of a location association
- Data sources include
  - Public Infrastructure
  - Cellular Devices
  - Network Infrastructure
  - Connected *X* (vehicles, IOT, checkout terminals, sensors, etc.)
- Do not confuse "Big Data" with "Insights" – Noise? Signal?
  - Spatial analysis plus best methods can harness Big Data to normalize and turn it into actionable insights using geodemography
- Compliance & Privacy: Anonymize, Aggregate and Synthesize

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E.G.:Mobile Movement Data

- Anonymized cellular devices can be treated as a spatiotemporal sample of the population
- These devices need to be weighted to an appropriate population to correct for behavioural and reporting biases
- Applications involve understanding park users, retail shoppers, overnight visitors to a tourism region and potential customers in an area amongst many others
- Results are reported as an estimated neighbourhood population
  - "We estimate that there were 14.7 visitors to this area from this neighbourhood"
- Traditional geodemographic techniques can then be used to describe the visitors' demographics, behaviours and psychographics

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MobileScapes

MobileScapes

The MobileScapes mobile movement database is easily accessible in configurations to suit various needs.

1

MobileScapes ENVISION

Using ENVISION's user-friendly interface, quickly analyze large volumes of mobile movement data by location (using hand-drawn polygons, existing location files or the new EA geofence library).

2

MobileScapes Plus

Access MobileScapes data or configured extracts via API or as flat files for use in your tools, and monitor activity weekly or monthly.

3

MobileScapes Out & About

Understand movement at the neighbourhood level: who leaves home, goes out to work, to shop, for recreation, on which days, at what time of day.

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MobileScapes – EA Geofences

MobileScapes includes access to 140,000 EA geofences, a comprehensive layer of polygons for Canadian commercial, institutional and recreational locations.

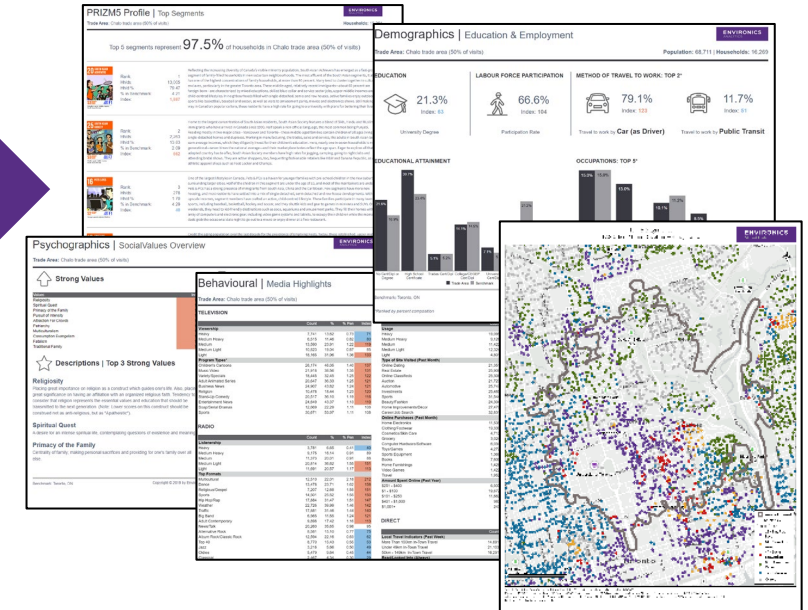# MobileScapes – In ENVISION or from API

Geofence
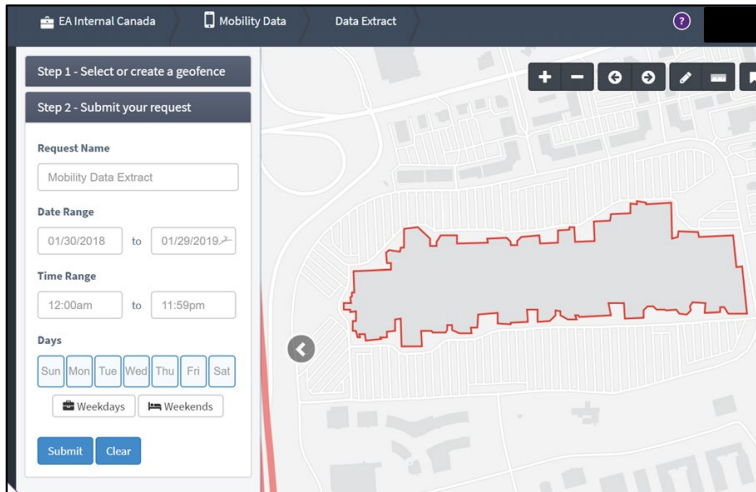
Select, draw or import a shape and select timeframe, days or dayparts for the retrieval

Data

Creates two data elements:
Common Evening Locations
Common Daytime Locations

Output

Usable with 30,000 data variables and in maps, dashboards and tables in ENVISION

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Our Geodatabase, powered by ArcGIS

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The easy button - ENVISION

- ENVISION is our cloud-based, secure platform that gives you access to more than 30,000 variables including demographics, consumer behaviour, lifestyles and values.

- The platform allows clients to connect first- and third-party data to derive insights.

- With an intuitive user interface and interactive dashboard for sharing reports and maps, ENVISION is easy-to-use

- Powered by ArcGIS

- Not for the data scientist or the GIS professional

Our Purpose-Built Platform
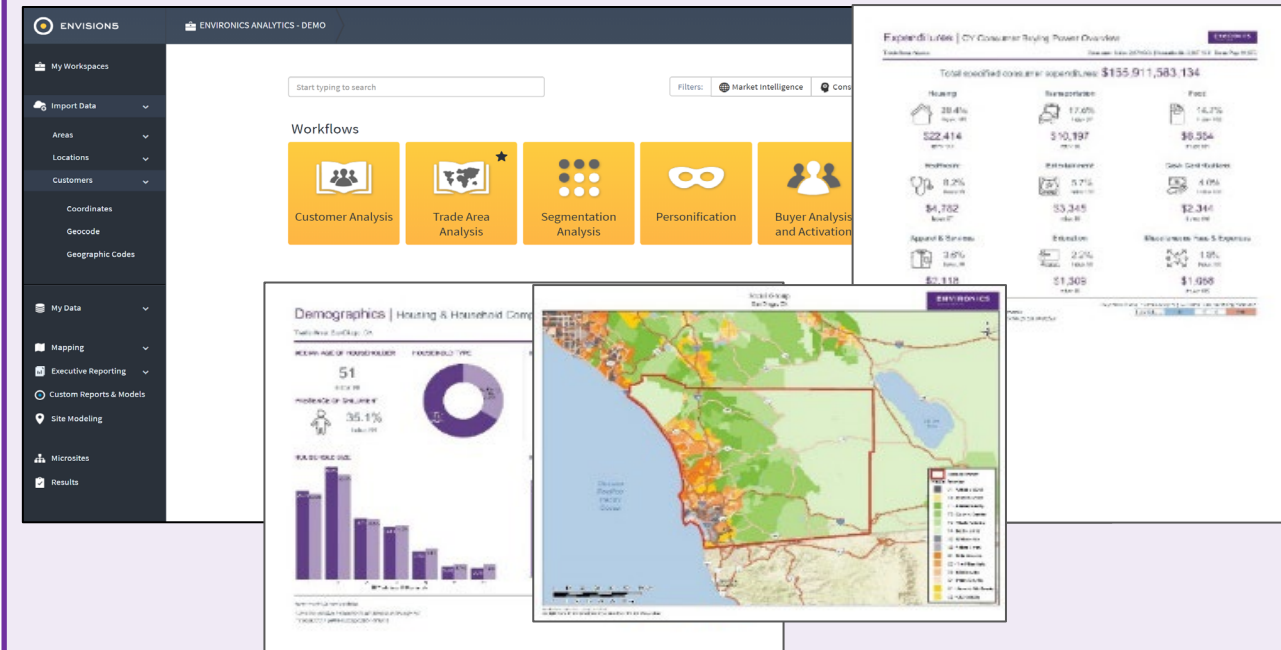
Segments & Personas

Target Marketing

Cross Selling

Product Assortment

Media Planning

Message Targeting

Site Selection

Omni-Channel

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ESRI and ENVISION

ArcGIS Enterprise
- Host Web Map Services (WMS)
- Host Web Feature Services (WFS)
- Manage user identities and groups

JavaScript API
- Custom UI with prescriptive workflows targeted at both technical (GIS) and non-technical users

ArcGIS Apps (Insights/Dashboards)
- Interactive Dashboarding

ENVISION is a SaaS application that allows users to identify their best consumers, develop targeted marketing campaigns, analyze trade areas and pinpoint new site locations – powered by ArcGIS.

At its core, Envision is a GIS that uses spatial data/analysis to answer business questions.

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Spatial Analysis embedded in ENVISION

Polygons → Trade Areas, Markets, Census Boundaries

**Points** → Business Locations, Customer Data

Spatial Concepts → Drivetimes, Geocoding, Distance Decay, Spatial Apportionment, Origin-Destination

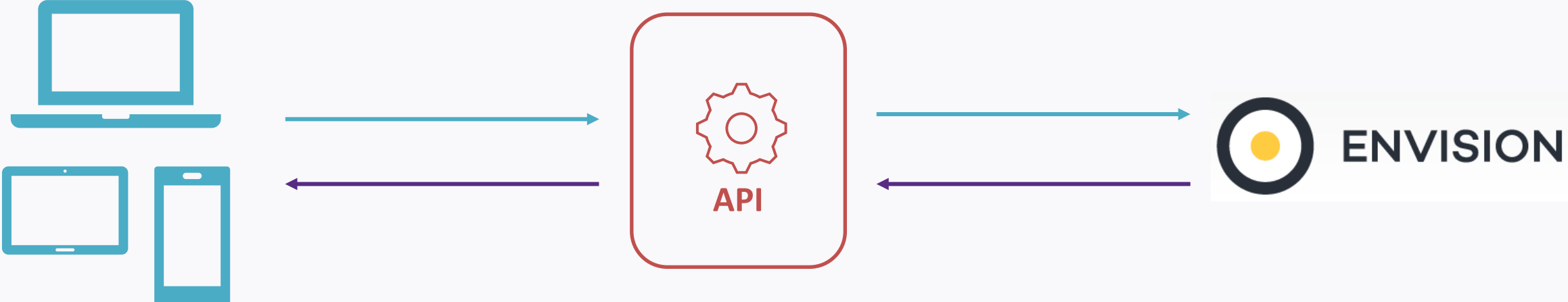**Mapping** → Chloropleth, Dot Density, Proportional Symbol, Heat Maps

Interoperability With Other Platforms

- **ArcGIS Business Analyst (BA)** combines demographic, business, lifestyle, spending and census data with map-based analytics, to help make better business decisions

- The software is a multiple industry solution providing analysis tools and data

- It can help identify under-performing markets, pinpoint growth sites and find where target customers live. It also allows for analysis to be shared via infographic reports and dynamic presentations

Source: https://www.esri.com/en-us/arcgis/products/arcgis-business-analyst/overview

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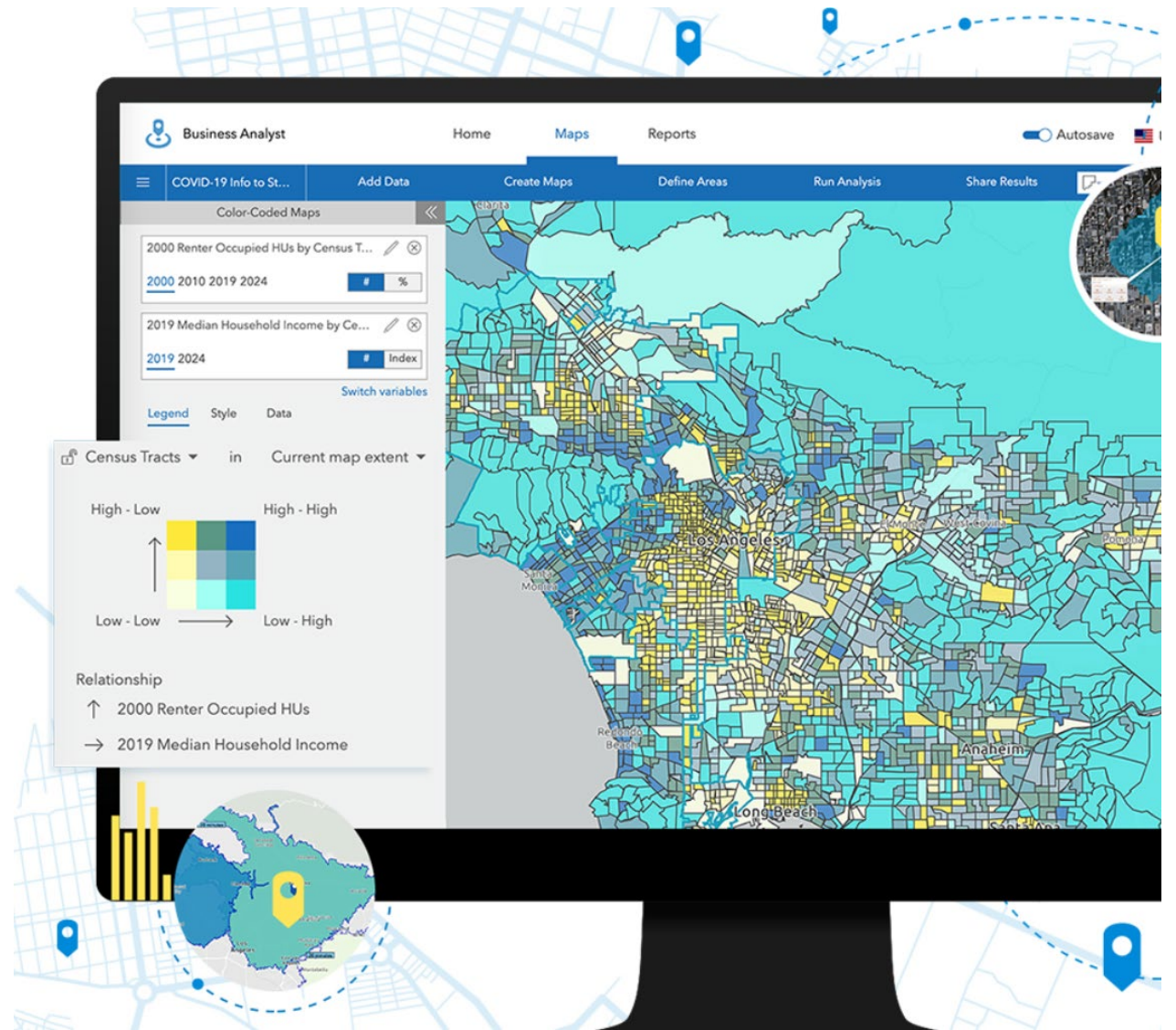
Application Program Interface (API)

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Data and Platform Connected to Activation

Tailoring to Industries

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We Work Across Many Industries

- Automotive
- Banking
- Consumer Goods
- Credit Unions
- Education
- Energy
- Government
- Healthcare
- Insurance
- Not-For-Profit

- Retail
- Real Estate
- Sports and Entertainment
- Travel and Leisure
- Telecommunications
- Media

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Service and Support

Questions?

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President

Environics Analytics

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@statslady