



The Analytics of Everywhere

Esri

Blockchain

Autonomous Vehicles

Digital Transformation

Drones

Augmented Reality

Retail 2.0

Smart Cities

IoT

Deep Learning

Smart Grid

Artificial Intelligence

Big Data



Location is Everywhere and Everything

Every twenty-first century dataset contains location



Discover Your Digital Twin

The World is Increasingly Instrumented
Everything can now be measured, analyzed, quantified

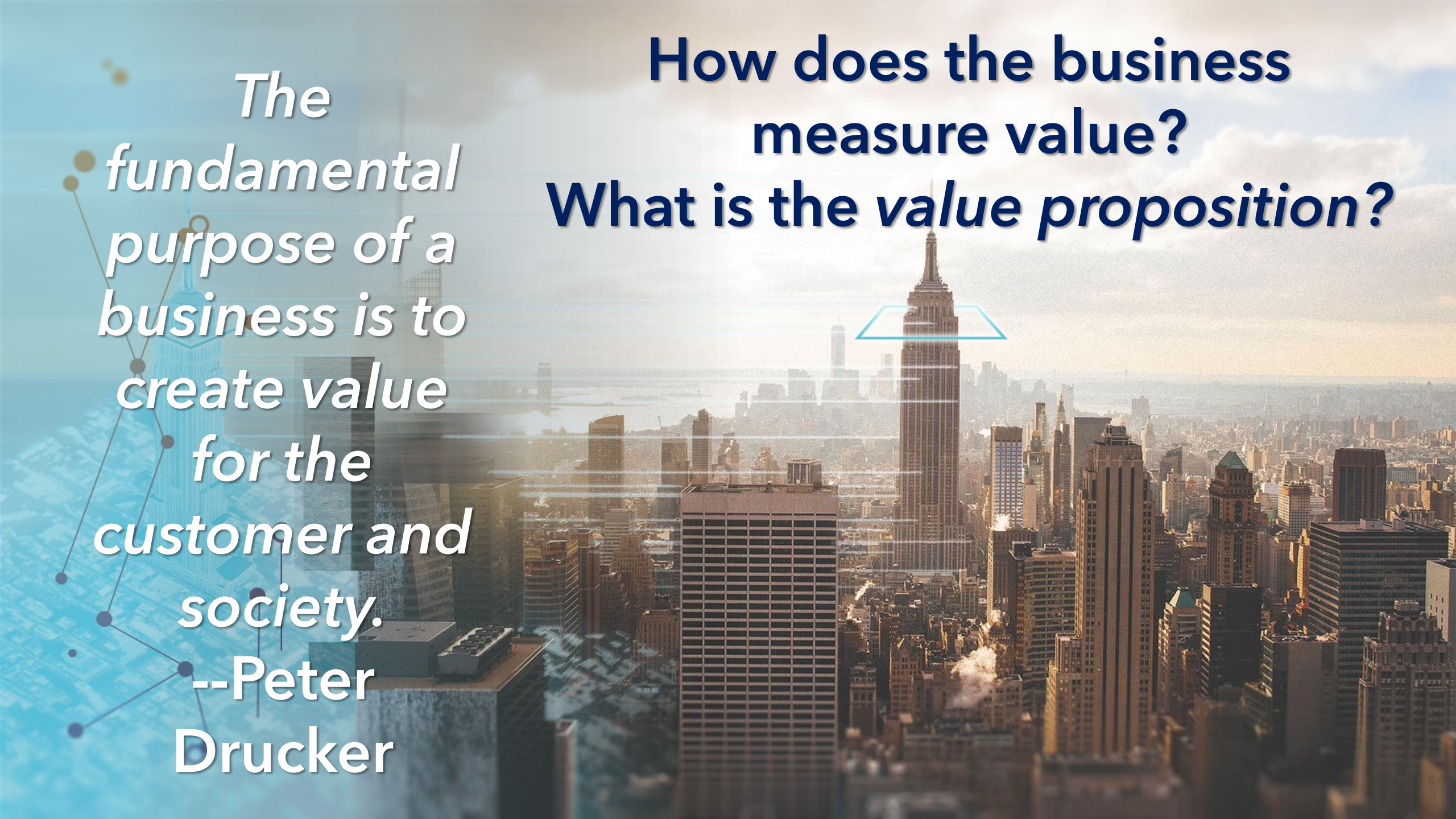


Explaining
Relationships

Forecasting
Futures

Redefining
Possibilities

The World is Increasingly Instrumented
Everything can now be measured, analyzed, quantified

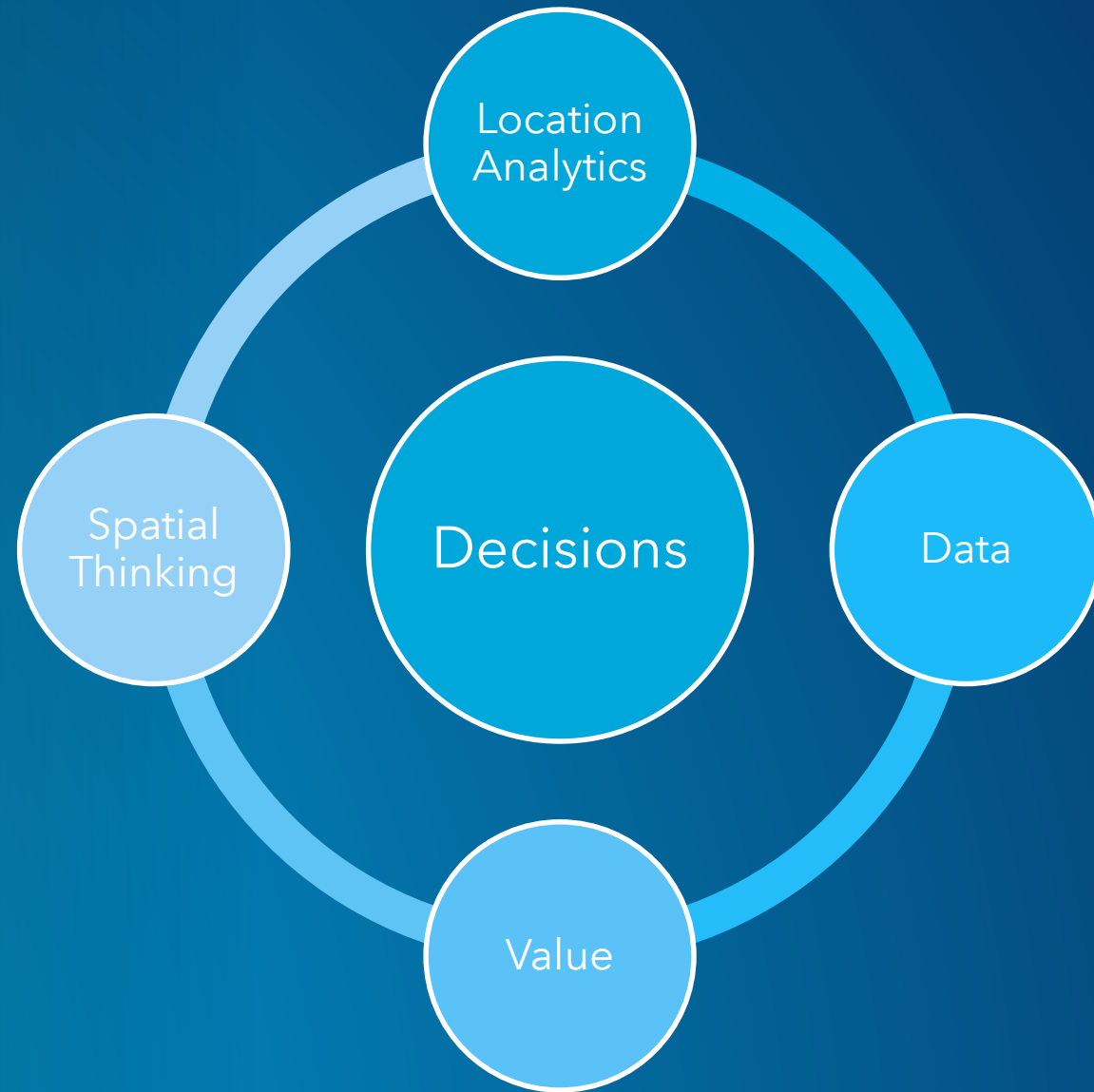


*The
fundamental
purpose of a
business is to
create value
for the
customer and
society.*

*--Peter
Drucker*

**How does the business
measure value?
What is the *value proposition*?**

The elements of spatial decision making



John Deere

<https://www.esri.com/about/newsroom/publications/wherenext/john-deere-market-development-with-location-intelligence/>

 **WERENEXT**

How Data-Driven John Deere Wins the Market

Market Development

October 08, 2019



Marianna Kantor,
Frits van der Schaaf



The John Deere Strategy



Global Agricultural Equipment
Preeminence



Deliver Measurable
Customer Value



Exceptional Operating
Performance

A global leader in construction
equipment solutions



Technology and
analytics leadership



Manufacturing and
supply excellence

Outpace industry
growth



Best in-class integrated
solutions



Distinctive product
quality

2 asset turns at mid-
cycle

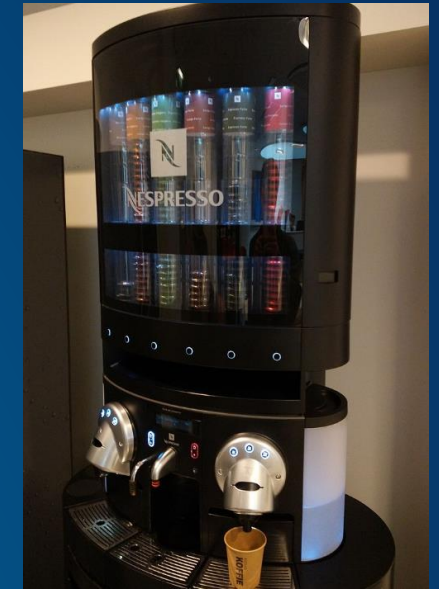


Win in after market



Civic and environmental
stewardship

The Nespresso Strategy



Priorities

Positive Cup Framework

Long term sustainable coffee supplies

Analytics support for farmers

Strategy

Transparent communication to customers

Responsible practices in communities

Implementation

FARMS to analyze farm activities, performance, and impact

Sustainability dashboard to manage sustainability practices and KPIs

Tech support to farmers and partners

Increase efficiencies in coffee production

Progress toward achieving 11 identified UN SDGs

The Lens of Location Analytics

Interconnecting people, place, purpose, time, activity

Simple

“What restaurants
are nearby”

Hard

“What nearby restaurant,
open now, serves wings”

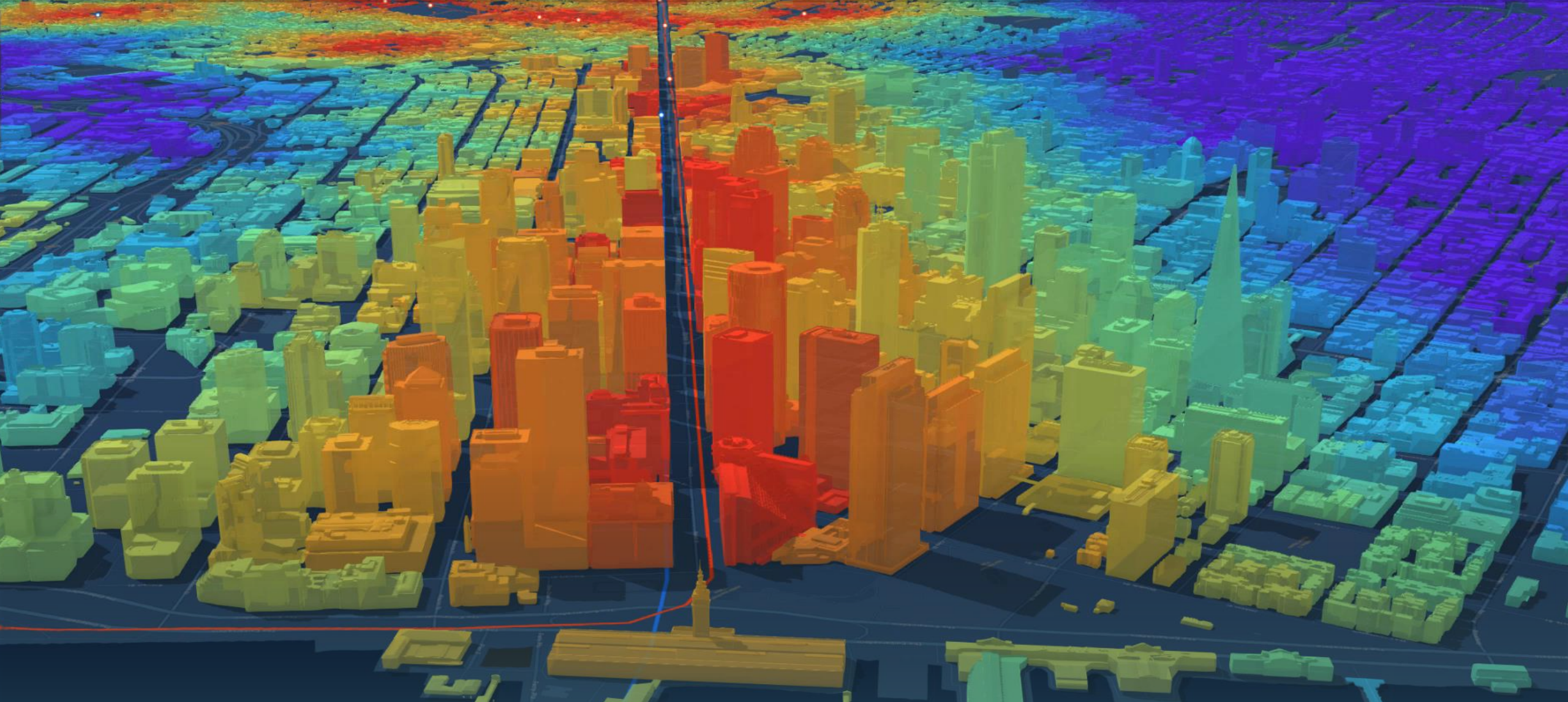
Very Hard

“Where’s the best place to open
a buffalo wings restaurant”



**“Esri’s data-rich maps are the
secret weapon behind many of
today’s most successful brands“**

Fast Company



Location + Time = Context

What people are doing, who they are, what's on their mind

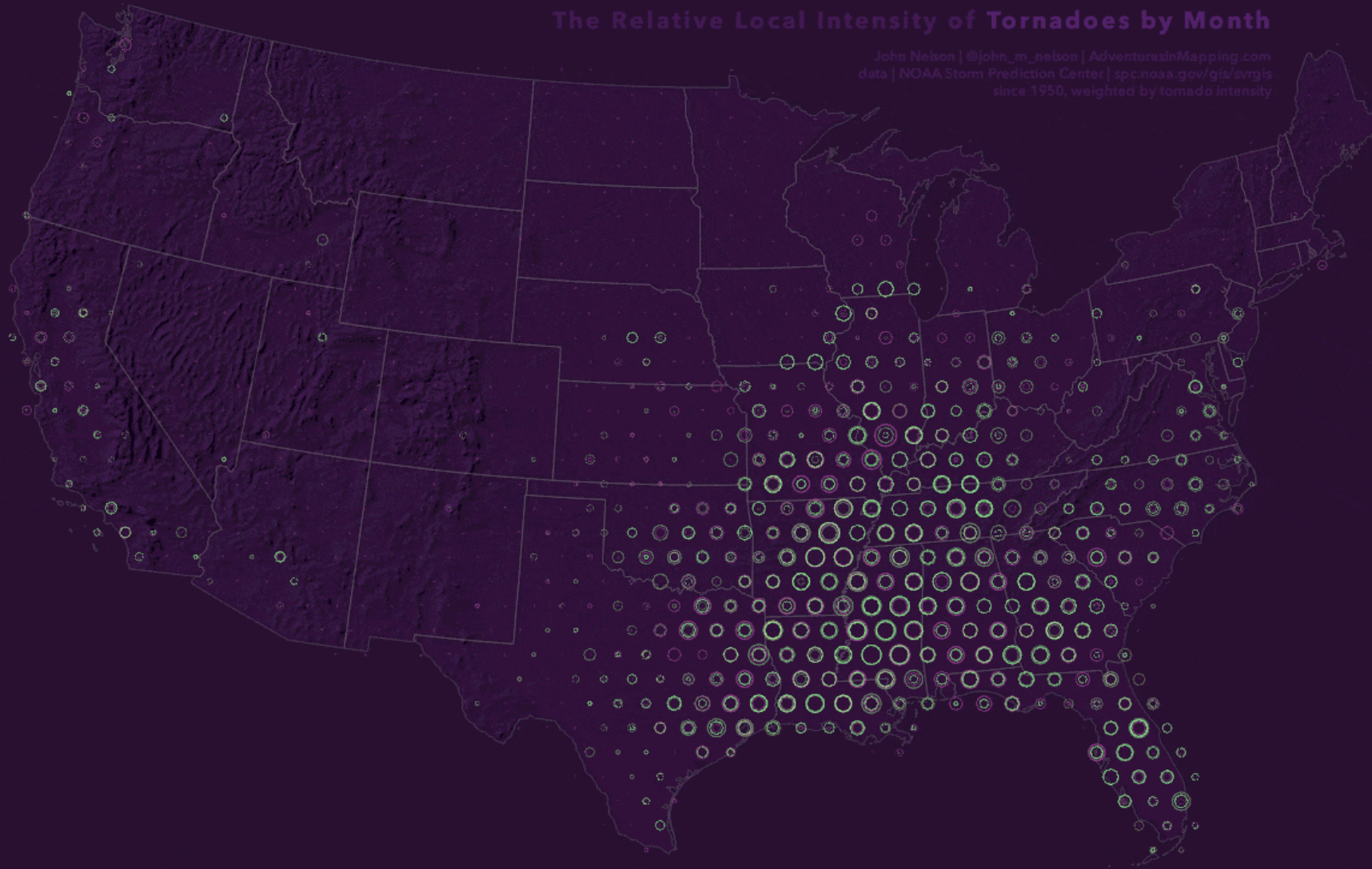


Detect the Signal in the Noise

Patterns of the past, prescriptions for the future

The Relative Local Intensity of Tornadoes by Month

John Nelson | @john_m_nelson | AdventuresInMapping.com
data | NOAA Storm Prediction Center | spc.noaa.gov/gis/svrgis
since 1950, weighted by tornado intensity



JANUARY

FEBRUARY

MARCH

APRIL

MAY

JUNE

JULY

AUGUST

SEPTEMBER

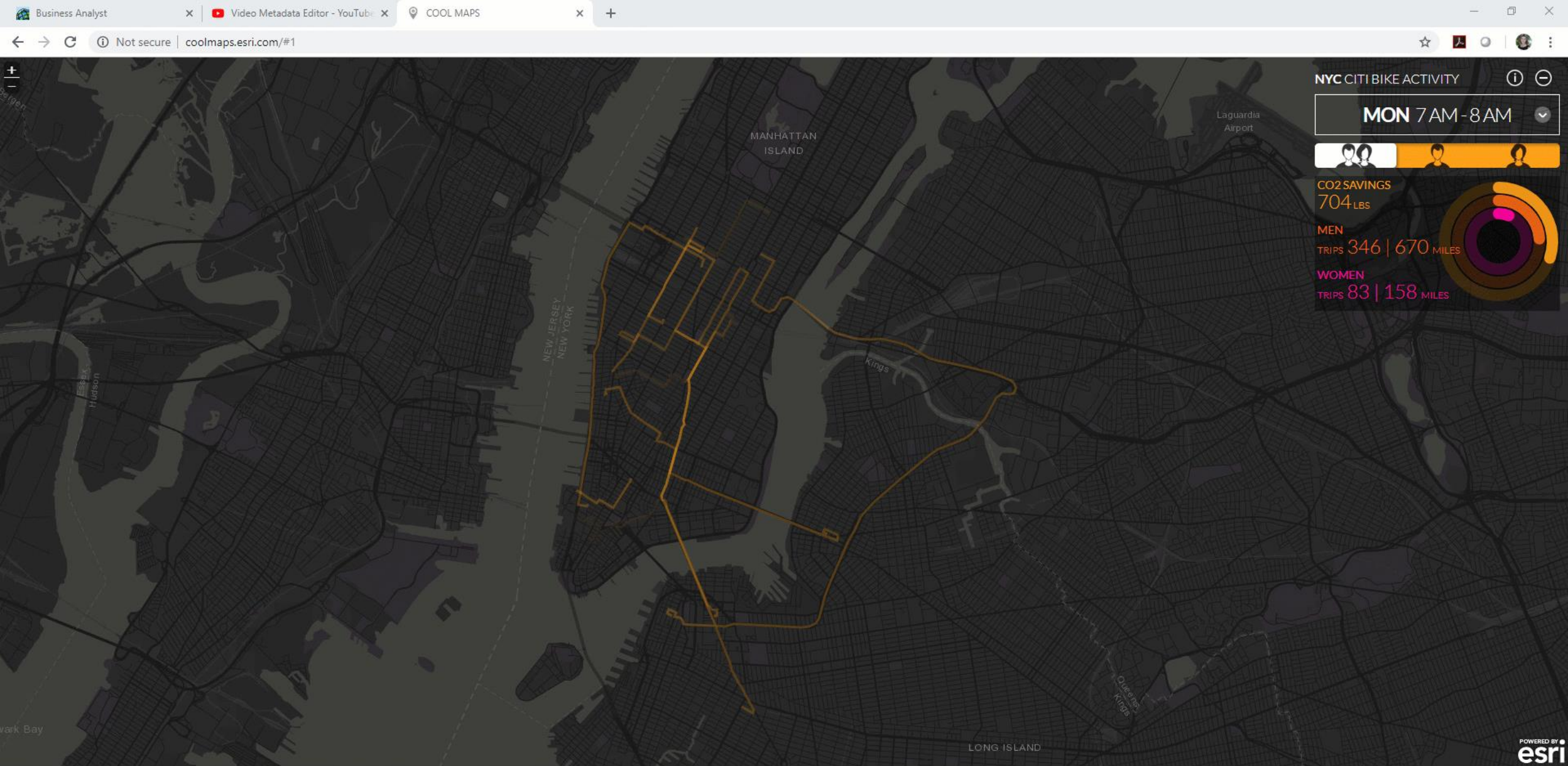
OCTOBER

NOVEMBER

DECEMBER

Detect the Signal in the Noise

Patterns of the past, prescriptions for the future



Big Apple Bicycle Map

MAPPING NEW YORK CITI BIKE RIDES

This map shows New York Citi Bike rides by the hour and computes CO2 emission savings based on comparable vehicle rides from the bicycle pick-up location to the drop-off location.



1:00 PM - 2:00 PM

Powered by Esri

SEVERITY DANGEROUS
LOCATION WITH HIGHEST ALERTS

164



MAJOR EARTHQUAKES (MAGNITUDE 5.5+)

SOURCE: USGS.GOV

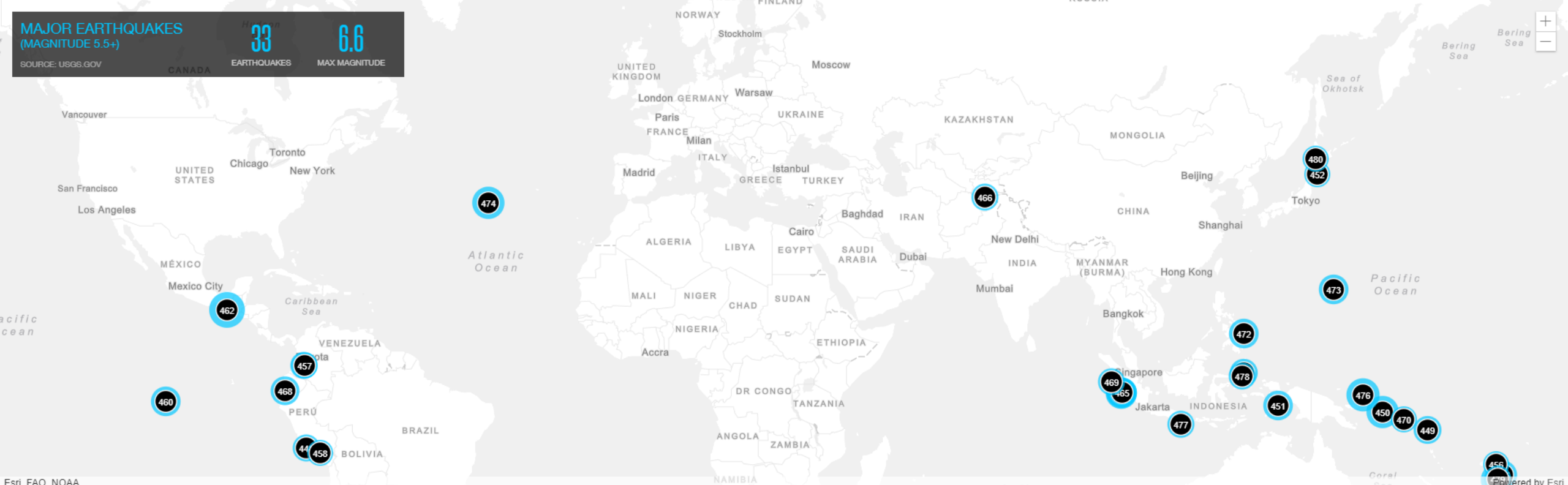
CANADA

EARTHQUAKES

MAX MAGNITUDE

33

6.6



Esri, FAO, NOAA

Powered by Esri

JAN 25	JAN 26	JAN 27	JAN 28	JAN 29	JAN 30	JAN 31	FEB 1	FEB 2	FEB 3	FEB 4	FEB 5	FEB 6	FEB 7	FEB 8	FEB 9	FEB 10	FEB 11	FEB 12	FEB 13	FEB 14	FEB 15	FEB 16	FEB 17	FEB 18	FEB 19	FEB 20	FEB 21	FEB 22				
M 5.5 - 71km N of Claveria, Philippines	M 5.8 - 19km W of Rio Grande, Peru	M 5.8 - 110km ENE of Ndoi Island, Fiji	M 5.5 - 222km SE of Lambasa, Fiji	M 5.5 - 27km S of Orcopampa, Peru	M 5.6 - 63km SSW of Taltal, Chile	M 5.5 - South of the Fiji Islands	M 5.5 - 27km S of Madero, Mexico	M 5.6 - 83km SSW of Taltal, Chile	M 6.1 - 168km SSE of Muara Siberut, Indonesia	M 5.8 - 27km S of Duran, Ecuador	M 5.8 - 131km NW of Sikabalan, Indonesia	M 5.5 - 43km NE of Auki, Solomon Islands	M 5.7 - 129km NW of Kota Ternate, Indonesia	M 5.9 - 41km E of General Luna, Philippines	M 5.9 - 35km NNE of Agnihau, Northern Mariana	M 6.2 - Northern Mid-Atlantic Ridge	M 5.6 - Southern East Pacific Rise	M 5.6 - 123km S of Krajan Tambakrejo, Indonesia	M 6.3 - 48km NW of Namatana, Papua New	M 5.6 - 28km SSW of Ndoi Island, Fiji	M 5.6 - 131km W of Kota Ternate, Indonesia	M 5.5 - 24km E of Chitose, Japan	M 5.6 - 19km W of Rio Grande, Peru	M 5.7 - 21km SE of Lata, Solomon Islands	M 6.2 - 50km SW of Chirovanga, Solomon	M 5.9 - 57km WNW of Dobo, Indonesia	M 5.5 - 65km ESE of Hachinohe, Japan	M 5.8 - 19km W of Rio Grande, Peru	M 5.7 - 21km SE of Lata, Solomon Islands	M 6.2 - 50km SW of Chirovanga, Solomon	M 5.9 - 57km WNW of Dobo, Indonesia	M 5.5 - 65km ESE of Hachinohe, Japan

2019 JAN 25 - FEB 22

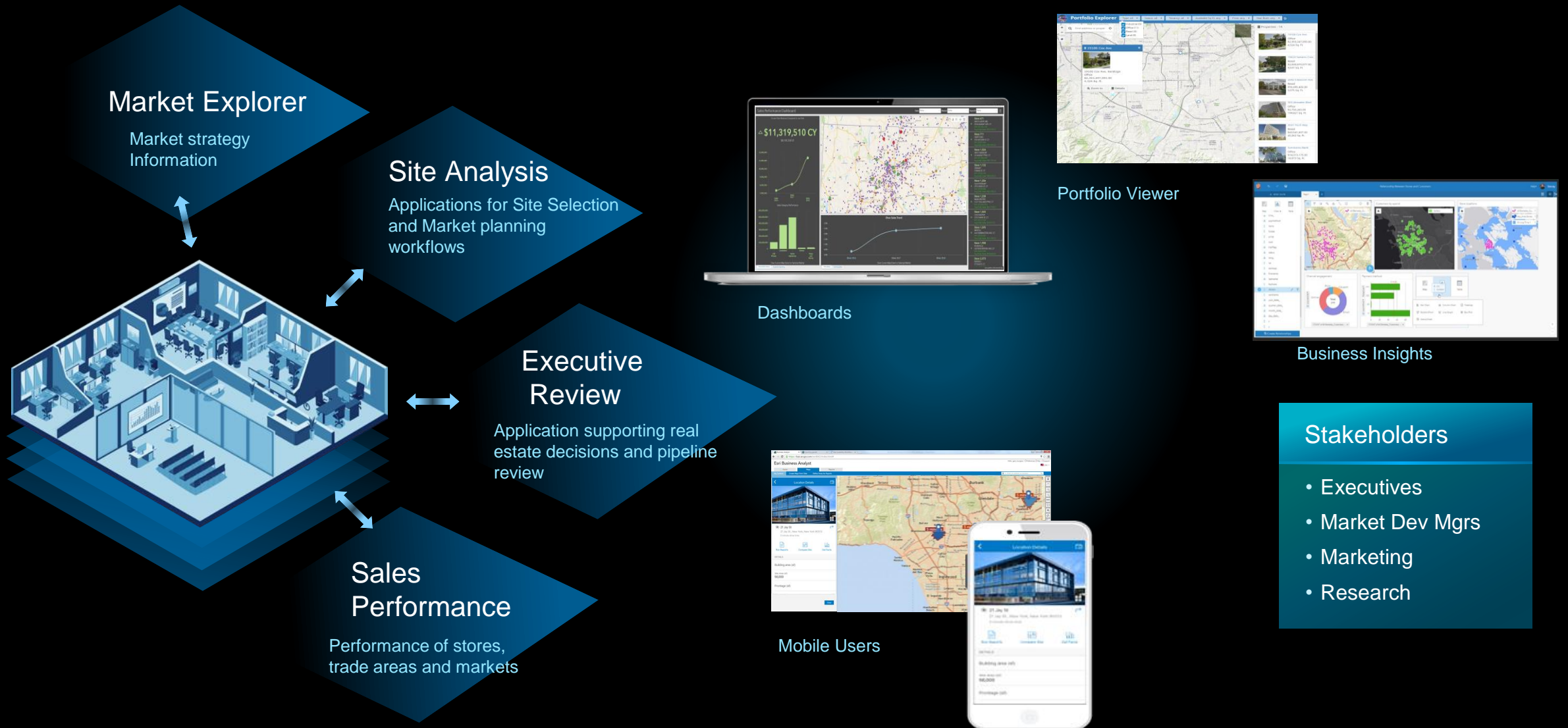


Tick-Tock

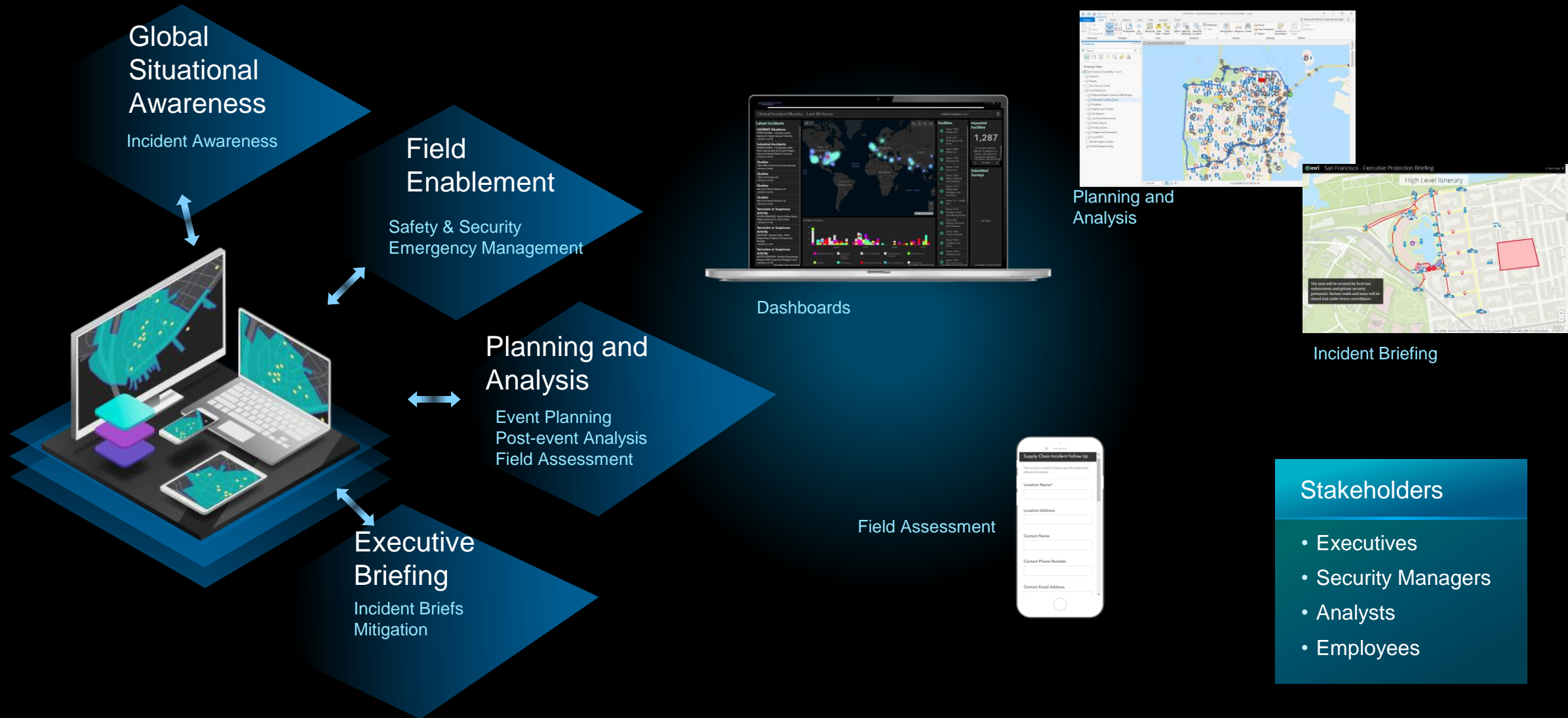
IT'S JUST A MAPPER OF TIME
Dashboard showing the major earthquakes by year, month, day, hour and minute.



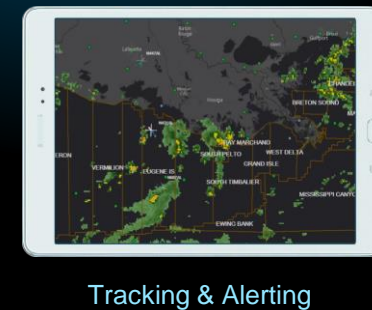
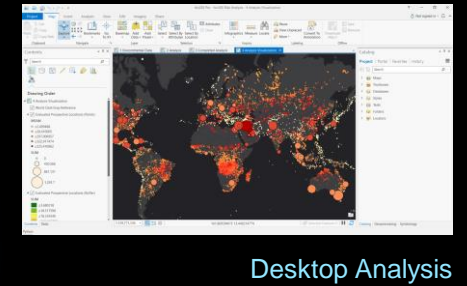
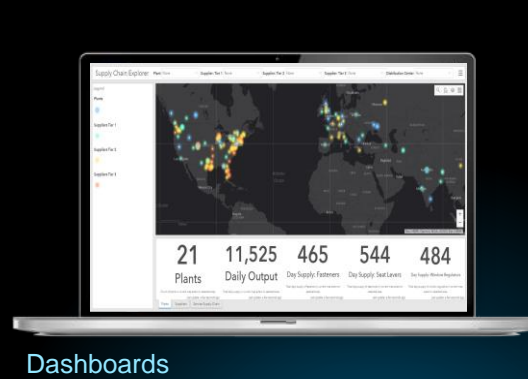
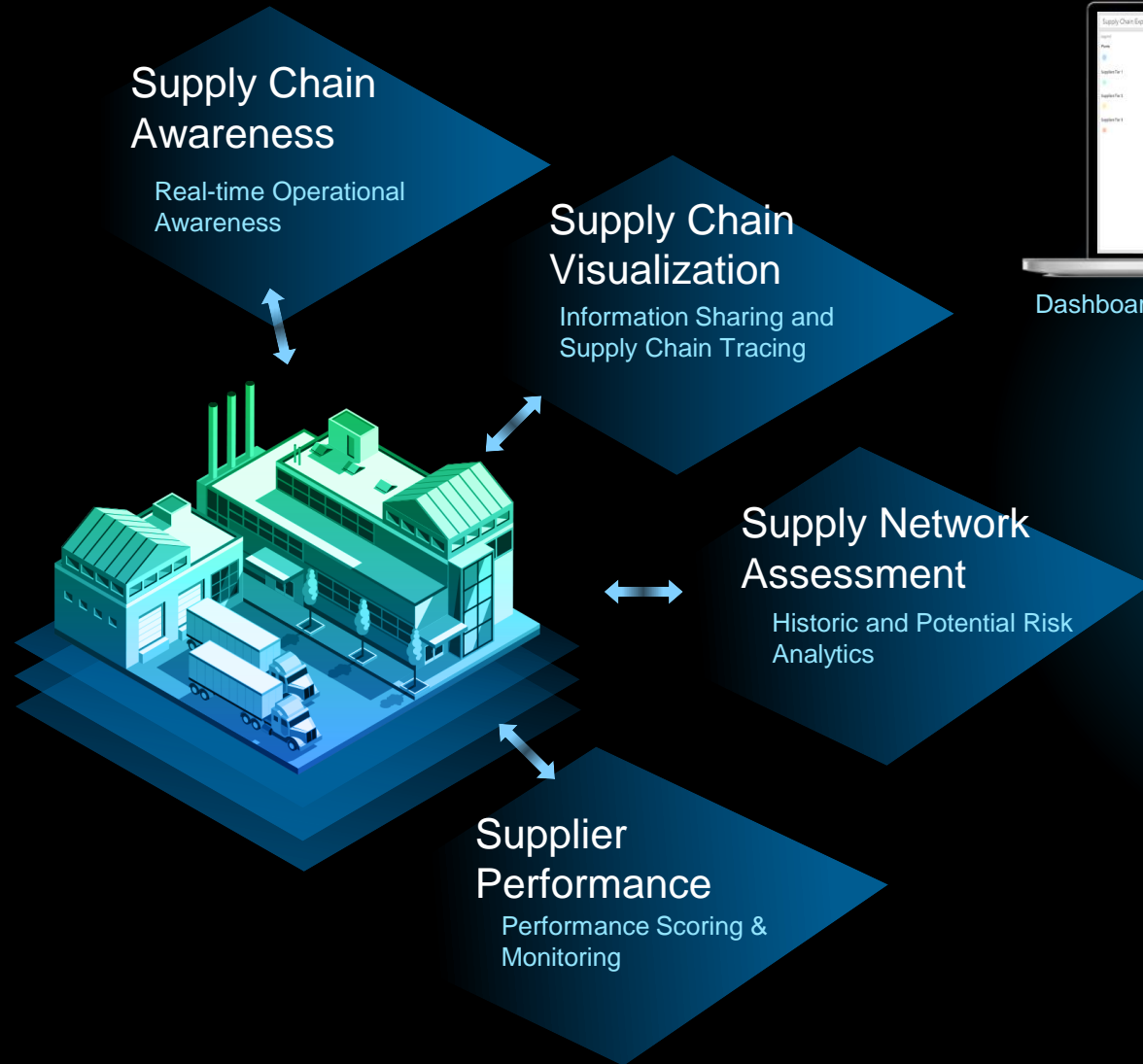
Market Development | Accelerate Business Growth



Corporate Security | Minimize Business Risk and Disruption



Digital Supply Network Initiative | Fulfill Market Demand Fast



- Stakeholders**
- Executives
 - Managers
 - Analysts
 - Supplier Relations

Geospatial Strategy and Vision for Businesses

Starts with a Department or Business Need

Market Development



Risk Management



Digital Supply Network

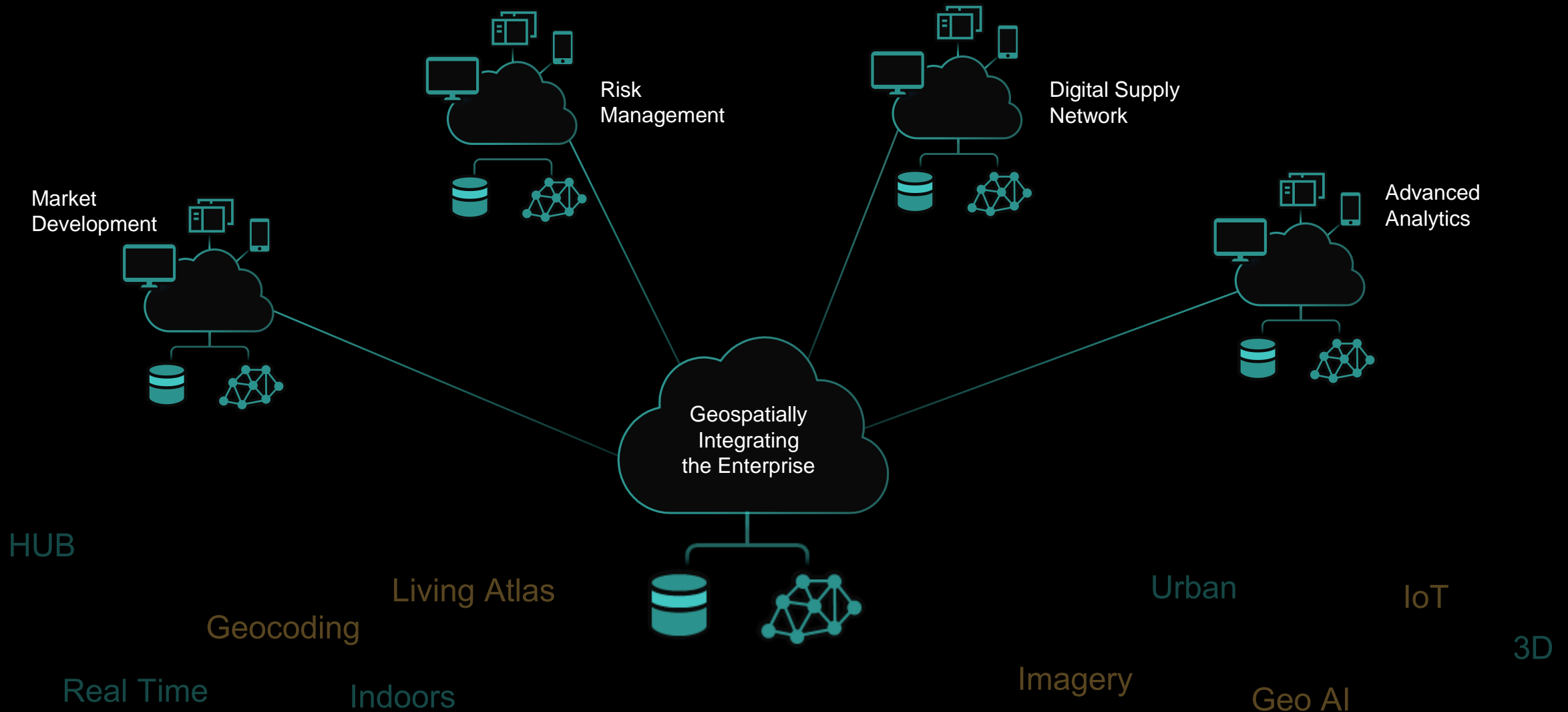


Advanced Analytics



Geospatial Strategy and Vision for Businesses

Expands across the Organization into an Enterprise Platform



Tahirah Mahan Thomas

CBRE

Commercial Real Estate

<https://www.esri.com/about/newsroom/publications/wherenext/the-world-leader-in-commercial-real-estate-tells-a-new-story/>

 **WHERENEXT**

The World Leader in Commercial Real Estate Tells a New Story

WhereNext Profiles

January 07, 2020



Keith Balaniz

Forbes:

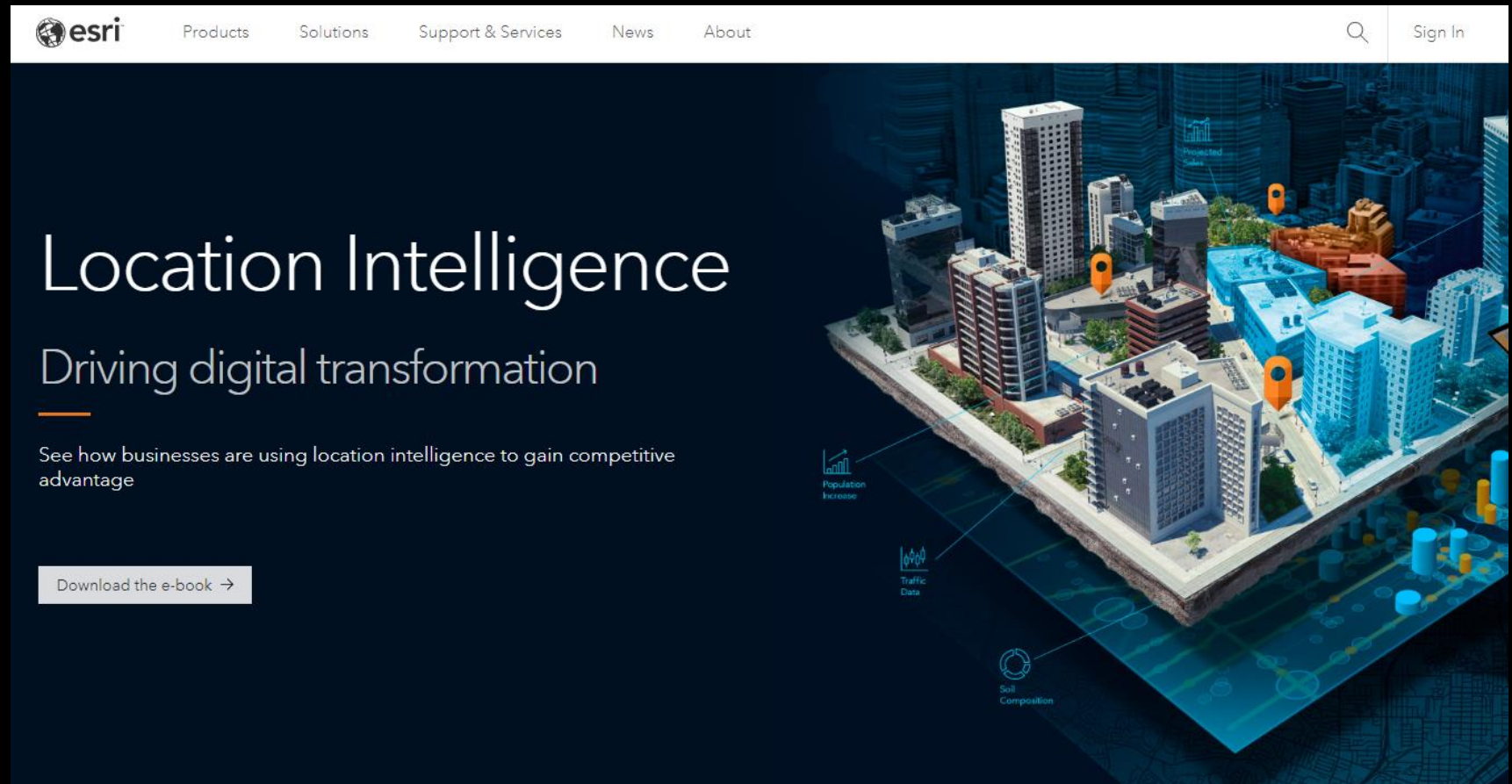
What you need to know about Location Intelligence in 2020

Esri:

Location Intelligence

Esri Case study:

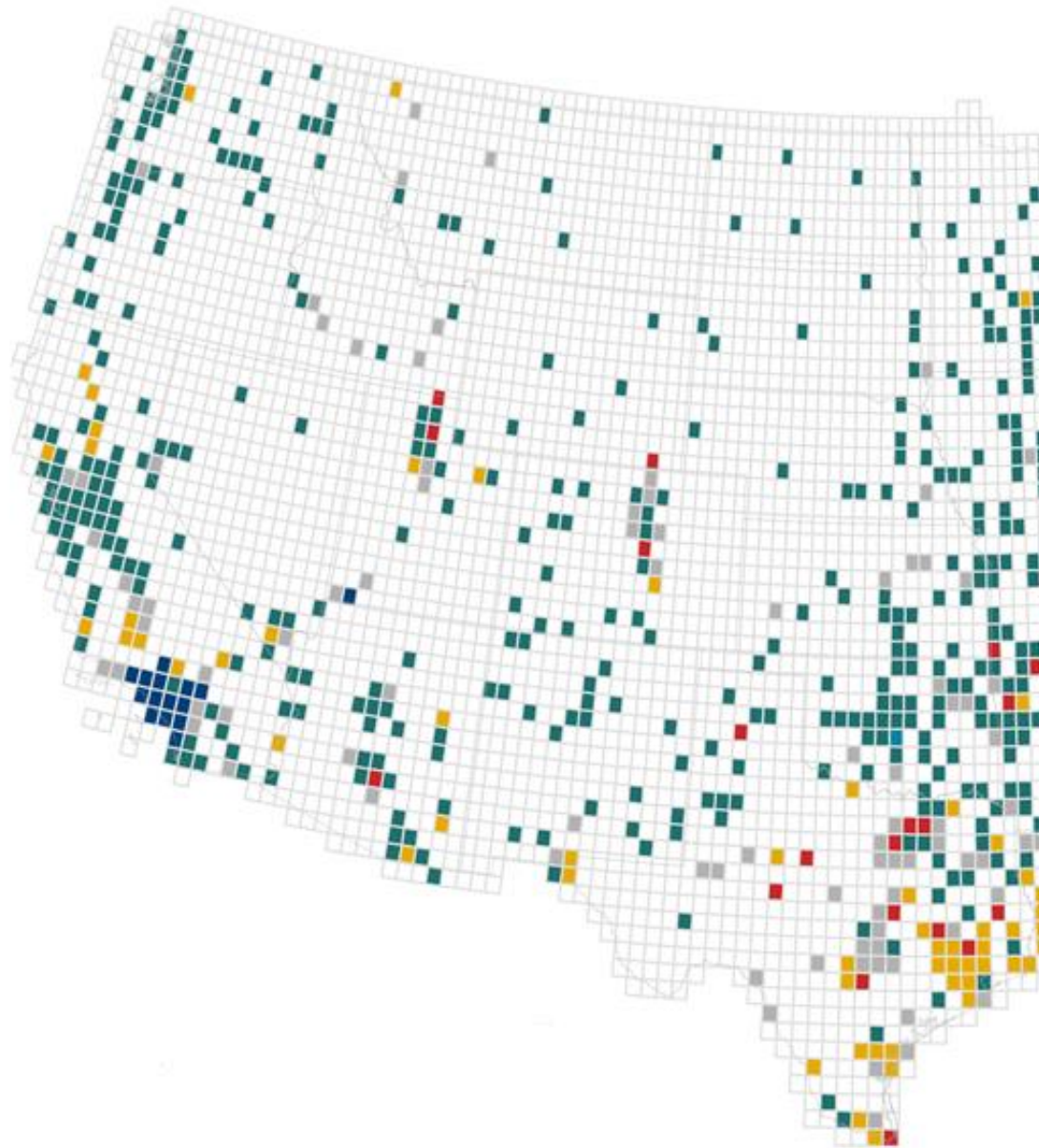
Fruit of the Loom



The screenshot shows the Esri website's landing page for Location Intelligence. At the top, there is a navigation bar with the Esri logo and links for Products, Solutions, Support & Services, News, and About. A search icon and a 'Sign In' link are also present. The main content area features a large, stylized 3D cityscape with various buildings and data points. The text 'Location Intelligence' is prominently displayed in white, followed by the subtitle 'Driving digital transformation'. Below this, a short paragraph reads: 'See how businesses are using location intelligence to gain competitive advantage'. A button labeled 'Download the e-book ->' is positioned at the bottom left of the main content area. On the right side of the cityscape, there are three data visualization icons: 'Population Increase' (a bar chart), 'Traffic Data' (a road with cars), and 'Soil Composition' (a circular diagram).

Dominant Chicken Chain

■ CHICK-FIL-A
 ■ BOJANGLES®
 ■ POPEYES
 ■ POLLO TROPICAL
 ■ KFC
 ■ RAISING CANE'S
 ■ EL POLLO LOCO
 ■ ZAXBY'S
 ■ NEUTRAL



Demographic & Tapestry Report

Chick-fil-A Strategy & Analytics

Chan's House
1 mile

Summary	Census 2010	2016	2021
Population	19,990	22,177	23,815
Households	11,065	12,170	13,027
Families	3,172	3,465	3,690
Average Household Size	1.75	1.77	1.78
Owner Occupied Housing Units	4,603	4,269	4,449
Renter Occupied Housing Units	6,462	7,901	8,578
Median Age	33.7	34.1	34.3

Food Away from Home - 2016

- Food Away from Home
- Breakfast at Fast Food Restaurants
- Lunch at Fast Food Restaurants
- Dinner at Fast Food Restaurants

2016 Civilian Population 16+ in Labor Force

- Civilian Employed
- Civilian Unemployed

2016 Employed Population 16+ by Occupation

- Total
- White Collar
 - Management/Business/Financial
 - Professional
 - Sales
 - Administrative Support
- Services
- Blue Collar
 - Farming/Forestry/Fishing
 - Construction/Extraction
 - Installation/Maintenance/Repair
 - Production
 - Transportation/Material Moving

2016 Population 25+ by Educational Attainment

- 2016 Education: < 9th Grade
- 2016 Education: High School/No Diploma
- 2016 Education: High School Diploma
- 2016 Education: GED
- 2016 Education: Some College/No Degree
- 2016 Education: Associate's Degree
- 2016 Education: Bachelor's Degree
- 2016 Education: Grad/Professional Degree

Households by Income

- Household
- <\$15,000
- \$15,000-\$24,999
- \$25,000-\$34,999
- \$35,000-\$49,999
- \$50,000-\$74,999
- \$75,000-\$99,999
- \$100,000-\$149,999
- \$150,000-\$199,999
- \$200,000+
- Median Household Income
- Average Household Income

Owner Occupied Housing Units by Value

- Median Value
- Average Value



Demographic & Tapestry Report

Chick-fil-A Strategy & Analytics

Chan's House
1 mile

Housing Units by Occupancy Status and Tenure	Census 2010		2016		2021	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units	12,192	100.0%	13,309	100.0%	14,255	100.0%
Occupied	11,065	90.8%	12,170	91.4%	13,027	91.4%
Owner	4,603	37.8%	4,269	32.1%	4,449	31.2%
Renter	6,462	53.0%	7,901	59.4%	8,578	60.2%
Vacant	1,127	9.2%	1,139	8.6%	1,228	8.6%

Political Affiliation - 2016

	Count	Index
Political party affiliated with: Democratic	5,833	144
Political party affiliated with: Republican	3,029	79
Political party affiliated with: Independent/none	4,050	114
Political outlook: very conservative	1,015	49
Political outlook: somewhat conservative	2,325	75
Political outlook: middle of the road	3,905	98
Political outlook: somewhat liberal	3,658	197
Political outlook: very liberal	2,584	252

Population by Age

Age Group	Census 2010		2016		2021	
	Number	Percent	Number	Percent	Number	Percent
0 - 4	1,133	5.7%	1,152	5.2%	1,243	5.2%
5 - 9	786	3.9%	920	4.1%	922	3.9%
10 - 14	564	2.8%	713	3.2%	756	3.2%
15 - 19	465	2.3%	668	3.0%	695	2.9%
20 - 24	1,794	9.0%	1,849	8.3%	1,836	7.7%
25 - 34	5,904	29.5%	6,336	28.6%	6,953	29.2%
35 - 44	4,000	20.0%	4,040	18.2%	4,385	18.4%
45 - 54	2,548	12.7%	2,860	12.9%	2,881	12.1%
55 - 64	1,775	8.9%	2,074	9.4%	2,181	9.2%
65 - 74	607	3.0%	1,063	4.8%	1,355	5.7%
75 - 84	264	1.3%	332	1.5%	419	1.8%
85+	149	0.7%	170	0.8%	188	0.8%

Race and Ethnicity

Race/Ethnicity	Census 2010		2016		2021	
	Number	Percent	Number	Percent	Number	Percent
White Alone	15,402	77.0%	16,461	74.2%	17,289	72.6%
Black Alone	3,163	15.8%	3,828	17.3%	4,177	17.5%
American Indian Alone	51	0.3%	50	0.2%	52	0.2%
Asian Alone	553	2.8%	779	3.5%	1,044	4.4%
Pacific Islander Alone	6	0.0%	11	0.0%	13	0.1%
Some Other Race Alone	347	1.7%	437	2.0%	488	2.0%
Two or More Races	468	2.3%	611	2.8%	752	3.2%
Hispanic Origin (Any Race)	967	4.8%	1,096	4.9%	1,212	5.1%

Rank	Tapestry Segment	2016 Households Cumulative		2016 U.S. Households Cumulative	
		Percent	Percent	Percent	Index
1	Metro Renters (3B)	73.7%	73.7%	1.5%	1.5%
2	Laptops and Lattes (3A)	15.2%	88.9%	1.1%	2.6%
3	Urban Chic (2A)	5.1%	94.0%	1.3%	3.9%
4	Set to Impress (11D)	4.1%	98.1%	1.4%	5.3%
5	Emerald City (8B)	1.9%	100.0%	1.4%	6.7%
Subtotal		100.0%		6.7%	



Political Affiliation - 2016

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Population by Age

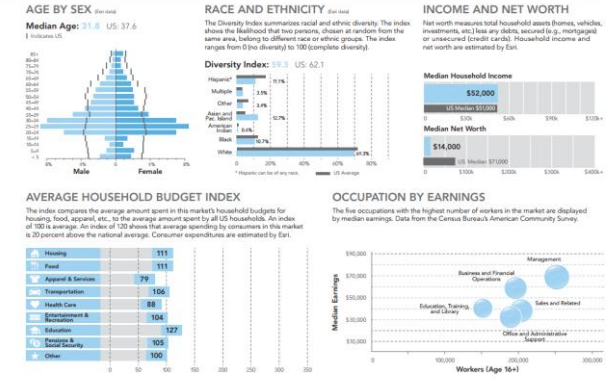
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65 - 74	607	3.0%	1,063	4.8%	1,355	5.7%
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85+	149	0.7%	170	0.8%	188	0.8%

Race and Ethnicity

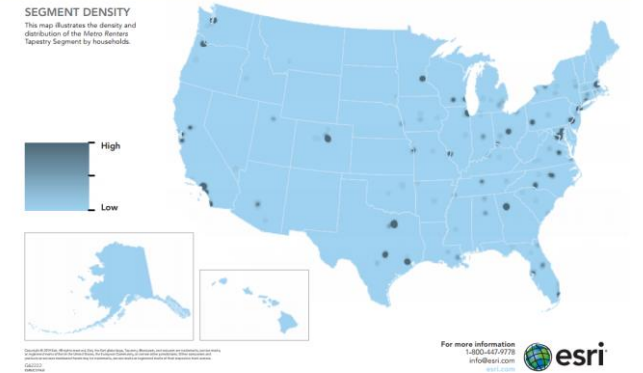
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Rank	Tapestry Segment	2016 Households Cumulative		2016 U.S. Households Cumulative		Index
		Percent	Percent	Percent	Percent	
1	Metro Renters (3B)	73.7%	73.7%	1.5%	1.5%	4885
2	Laptops and Lattes (3A)	15.2%	88.9%	1.1%	2.6%	1,444
3	Urban Chic (2A)	5.1%	94.0%	1.3%	3.9%	390
4	Set to Impress (11D)	4.1%	98.1%	1.4%	5.3%	297
5	Emerald City (8B)	1.9%	100.0%	1.4%	6.7%	131
	Subtotal	100.0%		6.7%		

3B LifeMode Group: Uptown Individuals Metro Renters



3B LifeMode Group: Uptown Individuals Metro Renters



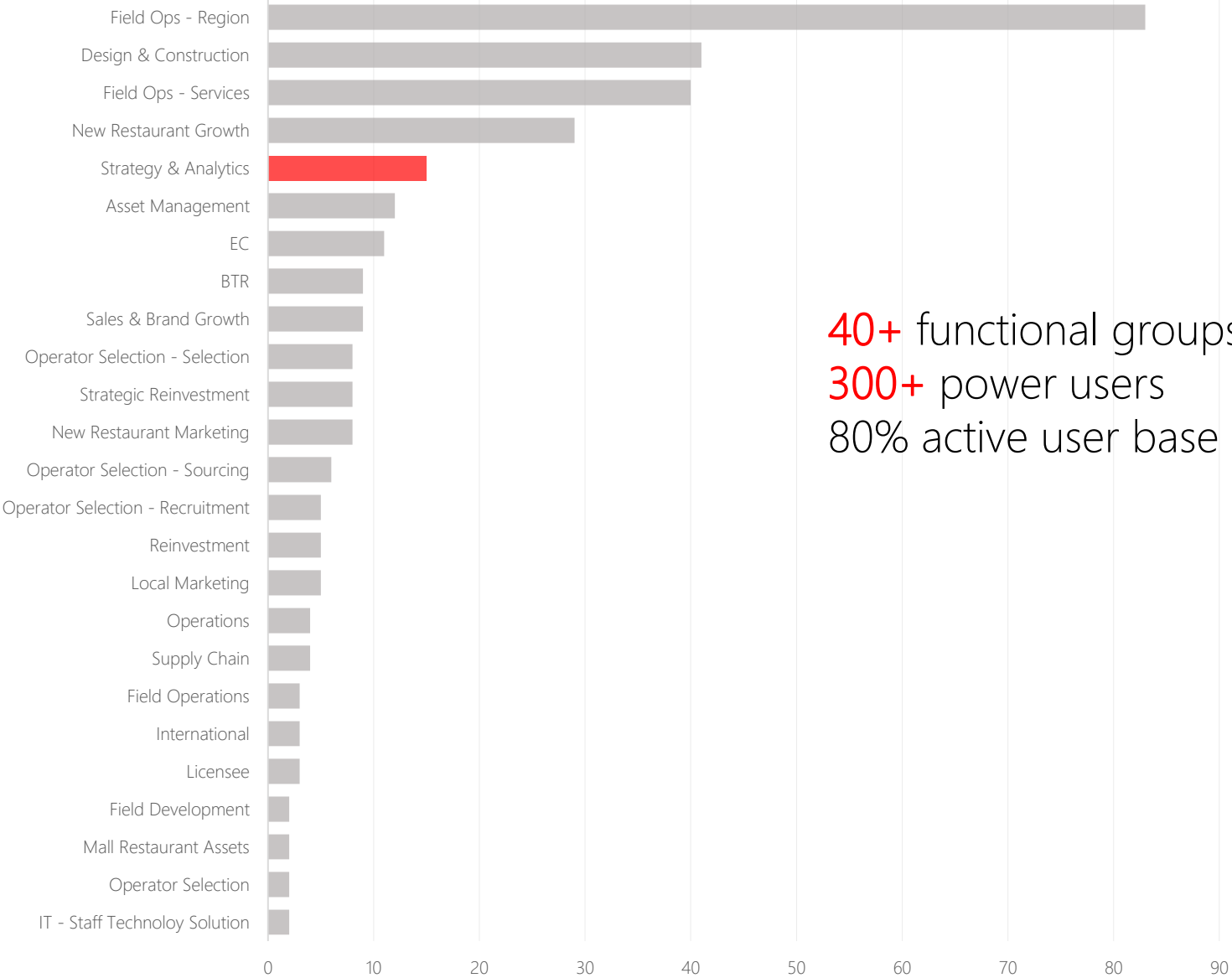
Lifestyle, Lifestage and Location

The fabric of American neighborhoods





Pinpoint Users by Functional Groups



40+ functional groups
 300+ power users
 80% active user base





Opening hearts – and kitchens – for Hurricane Florence relief

GREG ROSSINO SEP 19, 2018

How Chick-fil-A is supporting hurricane relief efforts

Hurricane Florence’s impact continues to be felt across the Carolinas and Virginia with tens of thousands of people displaced and hundreds of thousands still without power.

For Donavon Carless, local Owner/Operator of the [Triangle Town Center Chick-fil-A](#) in Raleigh, N.C., Sunday was a chance for him and his team to serve a few of those in need – making 500 sandwiches and 1,200 nuggets for coastal evacuees at three local shelters in coordination with the [American Red Cross](#).

“We knew the one thing we could do to help was to give evacuees a hot sandwich,” Carless said. “The response from the Team Members was overwhelming – they all wanted to pitch in and volunteer to help.”



Driving Growth

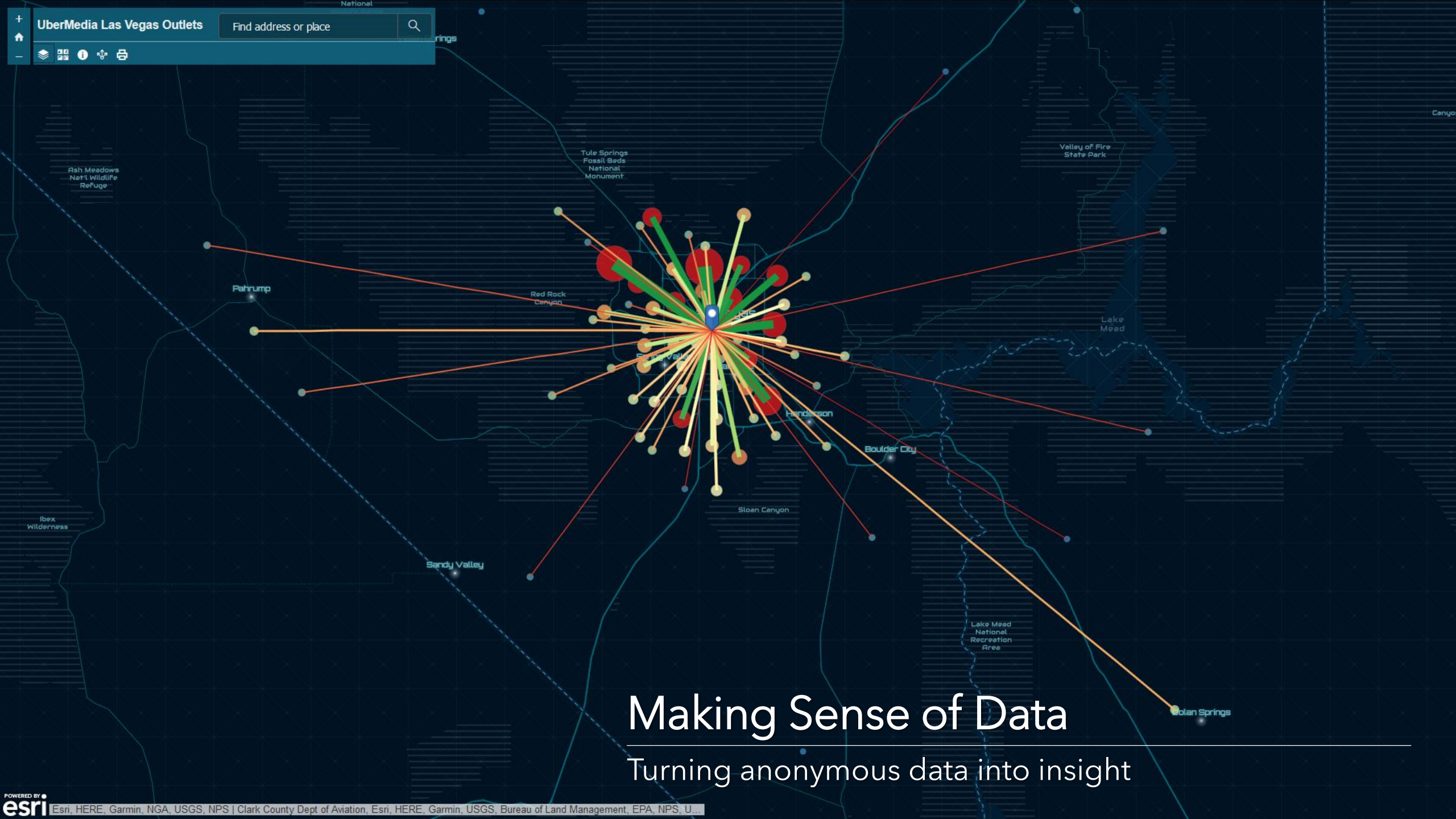
“Where is the best growth opportunity”

Mitigating Risk

“What factors impact my strategy and where”

Fulfilling Promises

“How do I exceed customer expectations”

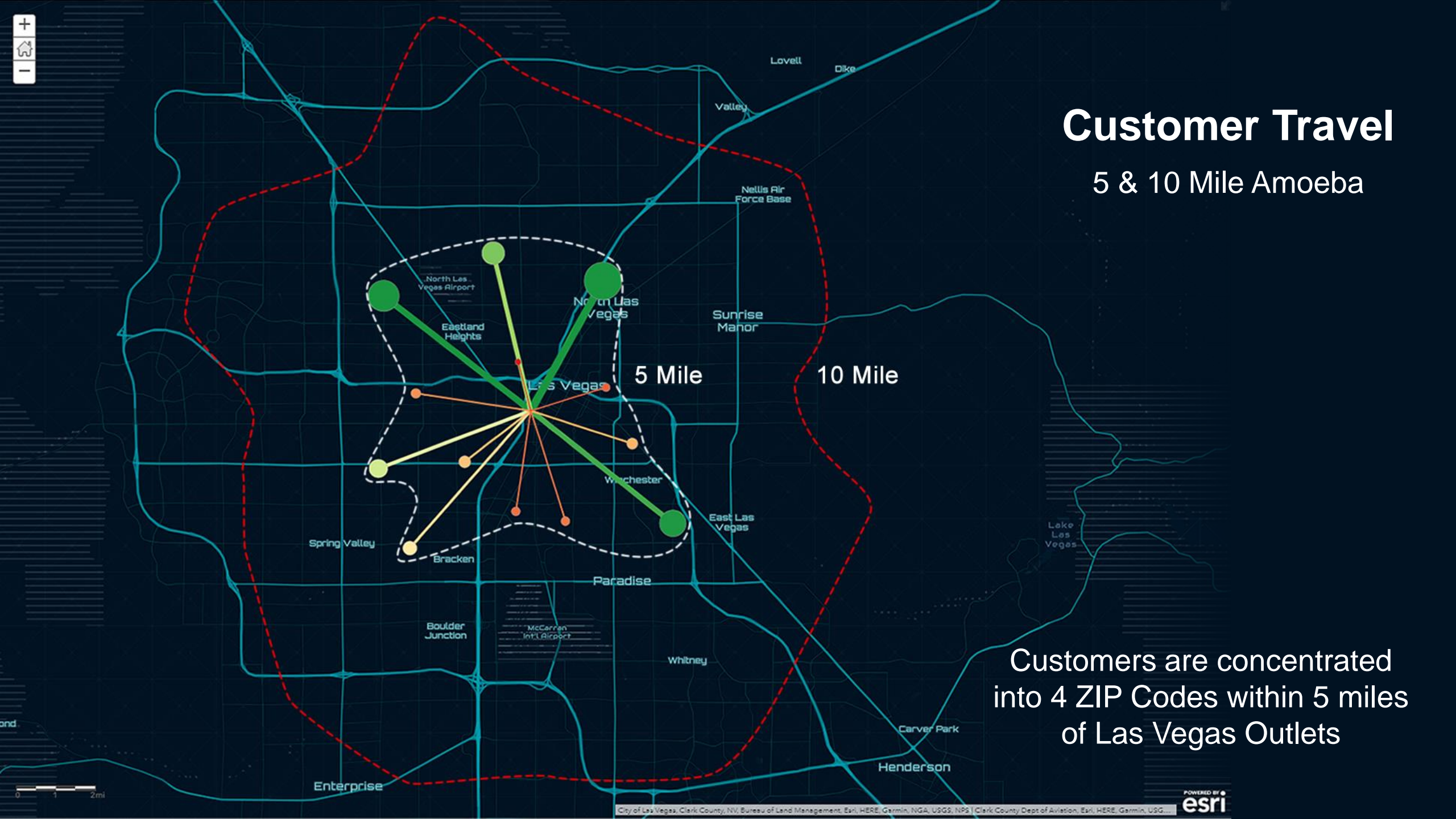


Making Sense of Data

Turning anonymous data into insight

Customer Travel

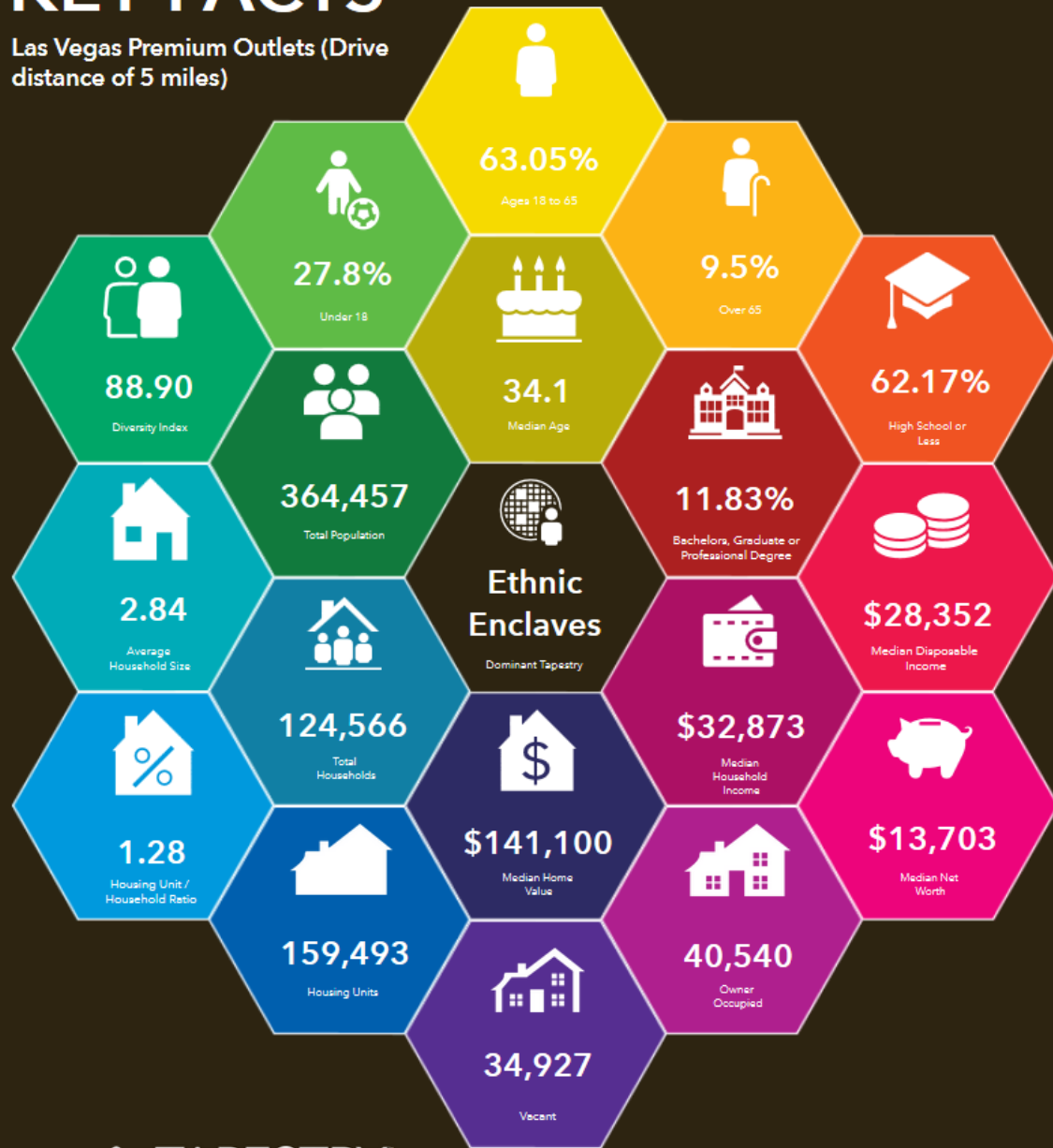
5 & 10 Mile Amoeba



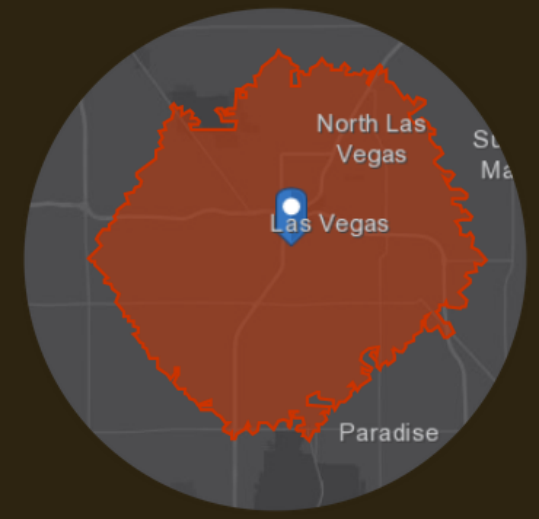
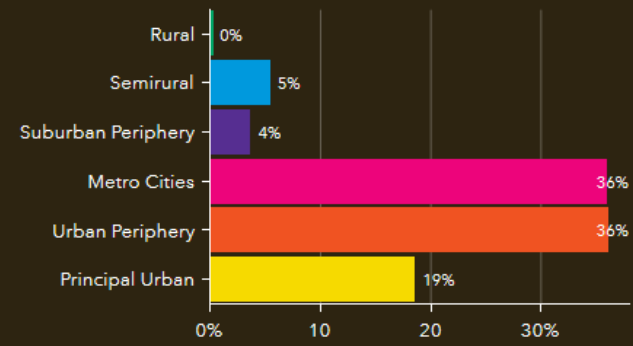
Customers are concentrated into 4 ZIP Codes within 5 miles of Las Vegas Outlets

KEY FACTS

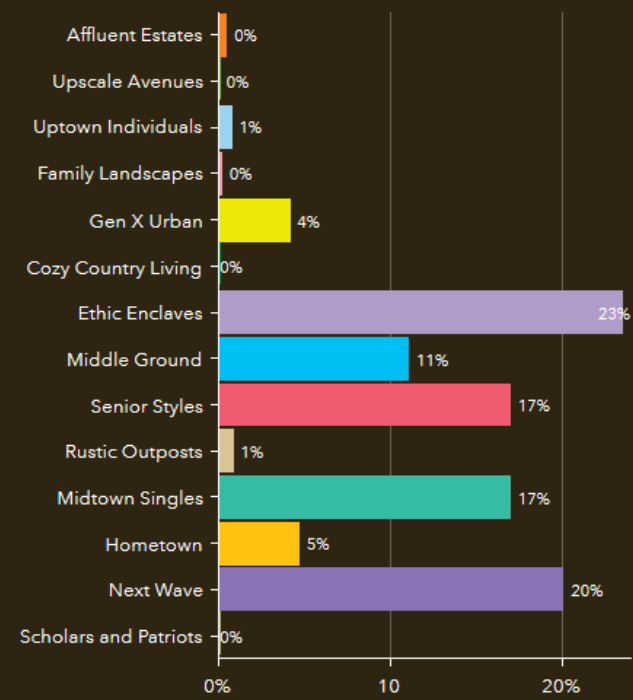
Las Vegas Premium Outlets (Drive distance of 5 miles)



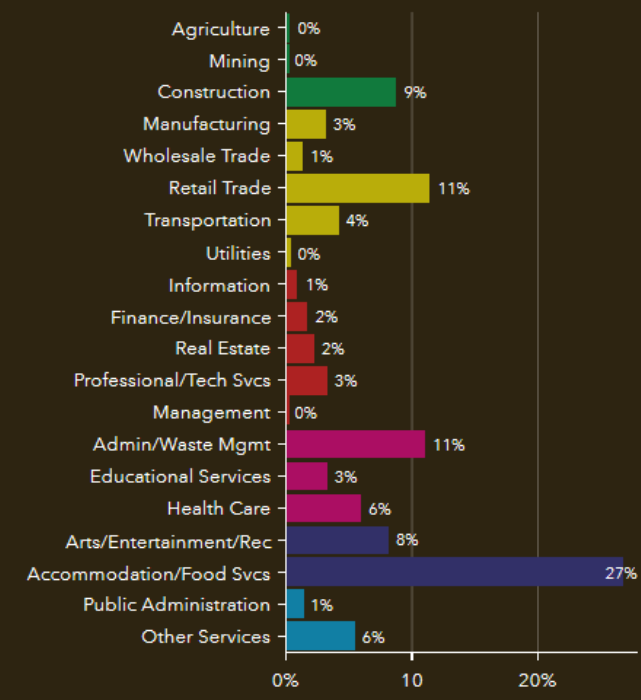
Urbanization Groups



Lifemodes



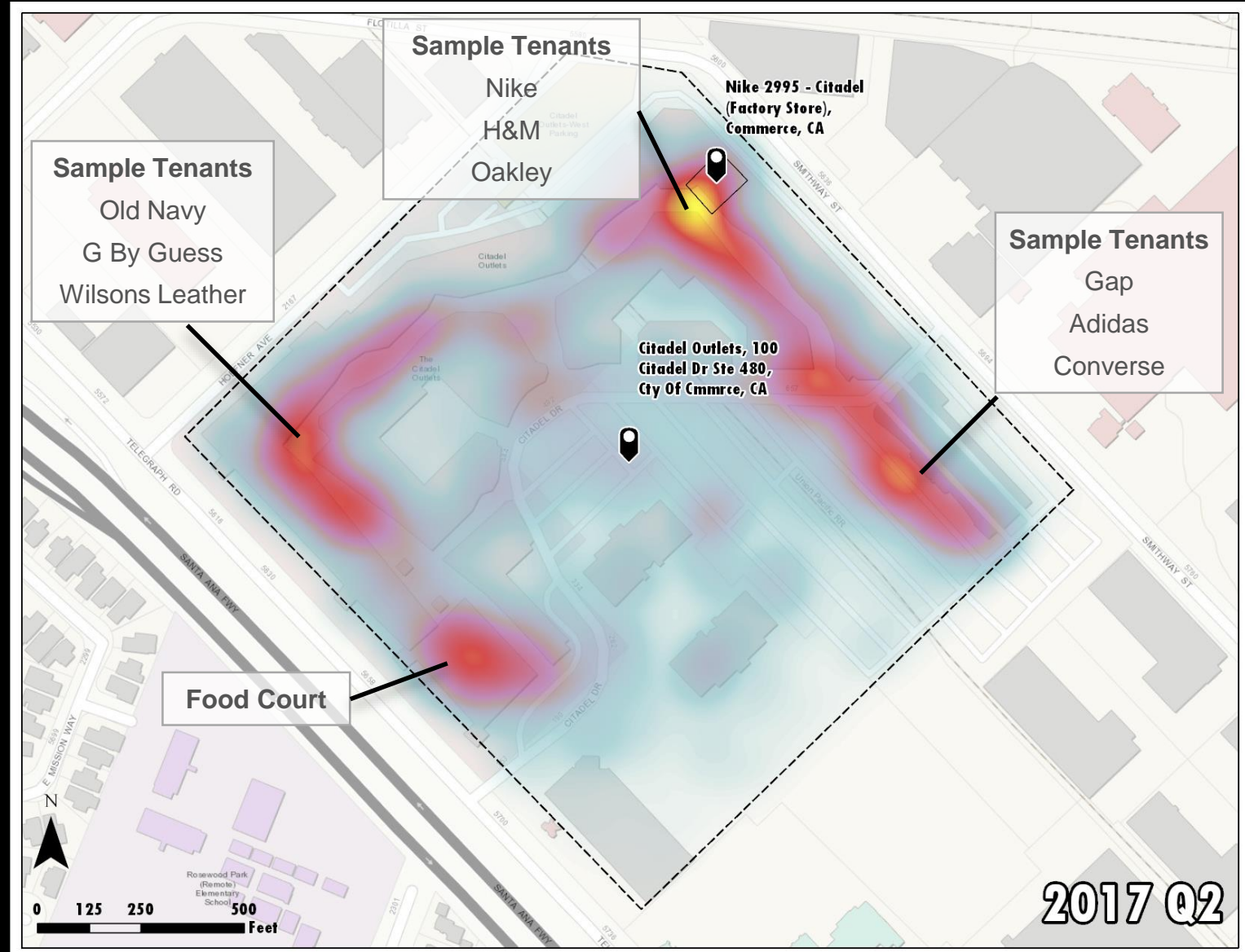
Labor Force by Industry



Citadel Outlets 2017 Q2

Location	Estimated
Citadel Outlets	492,102
Nike Citadel	39,315

- Area near Nike is hottest at Citadel Outlets in Q2.



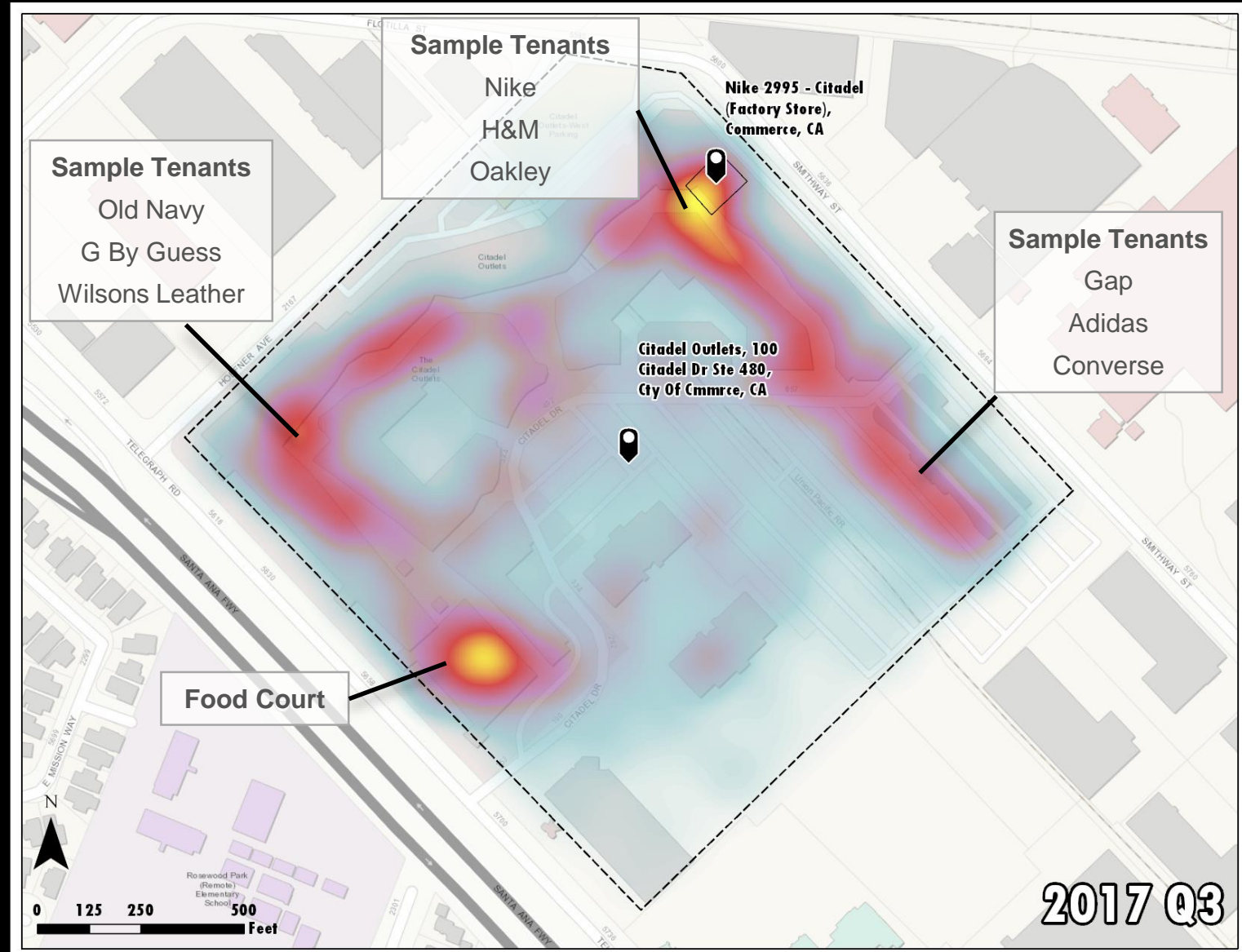
Q2: April 1 - June 30, 2017

Citadel Outlets

2017 Q3

Location	Estimated	% Diff from last quarter
Citadel Outlets	507,692	3.2%
Nike Citadel	40,084	2.0%

- Heat at Nike grows even more, which is supported by foot traffic numbers.
- Citadel Outlet's growth from last quarter looks to be attributed to the Nike area and food court.



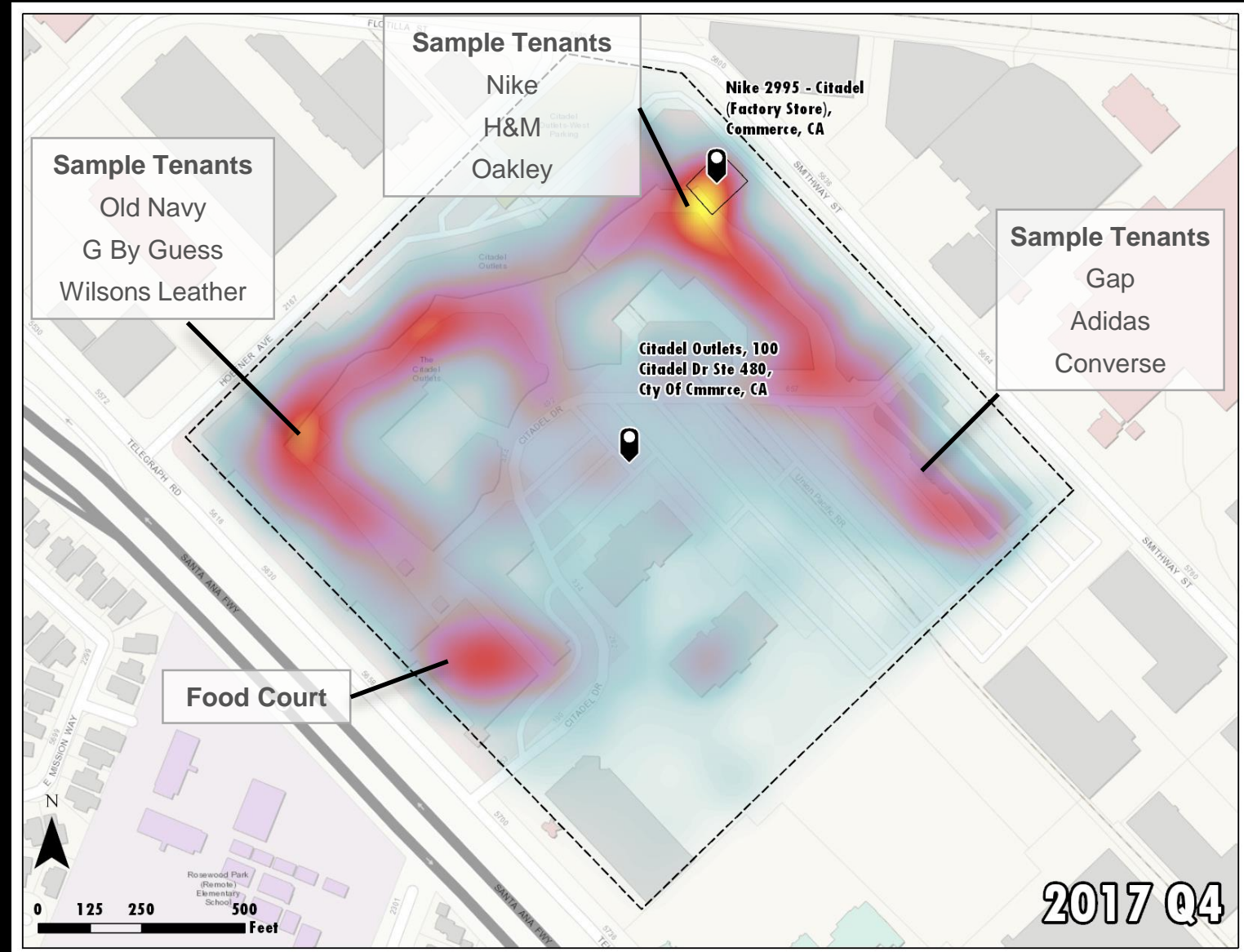
Q3: July 1 - September 30, 2017

Citadel Outlets

2017 Q4

Location	Estimated	% Diff from last quarter
Citadel Outlets	624,898	23.1%
Nike Citadel	51,961	29.6%

- Holiday shopping expectedly increased foot traffic for both Nike and Citadel Outlets.
- Visually, the Old Navy area looks to have grown in heat from Q3. The area east of Old Navy, where Toys R Us is located, has also grown in heat.



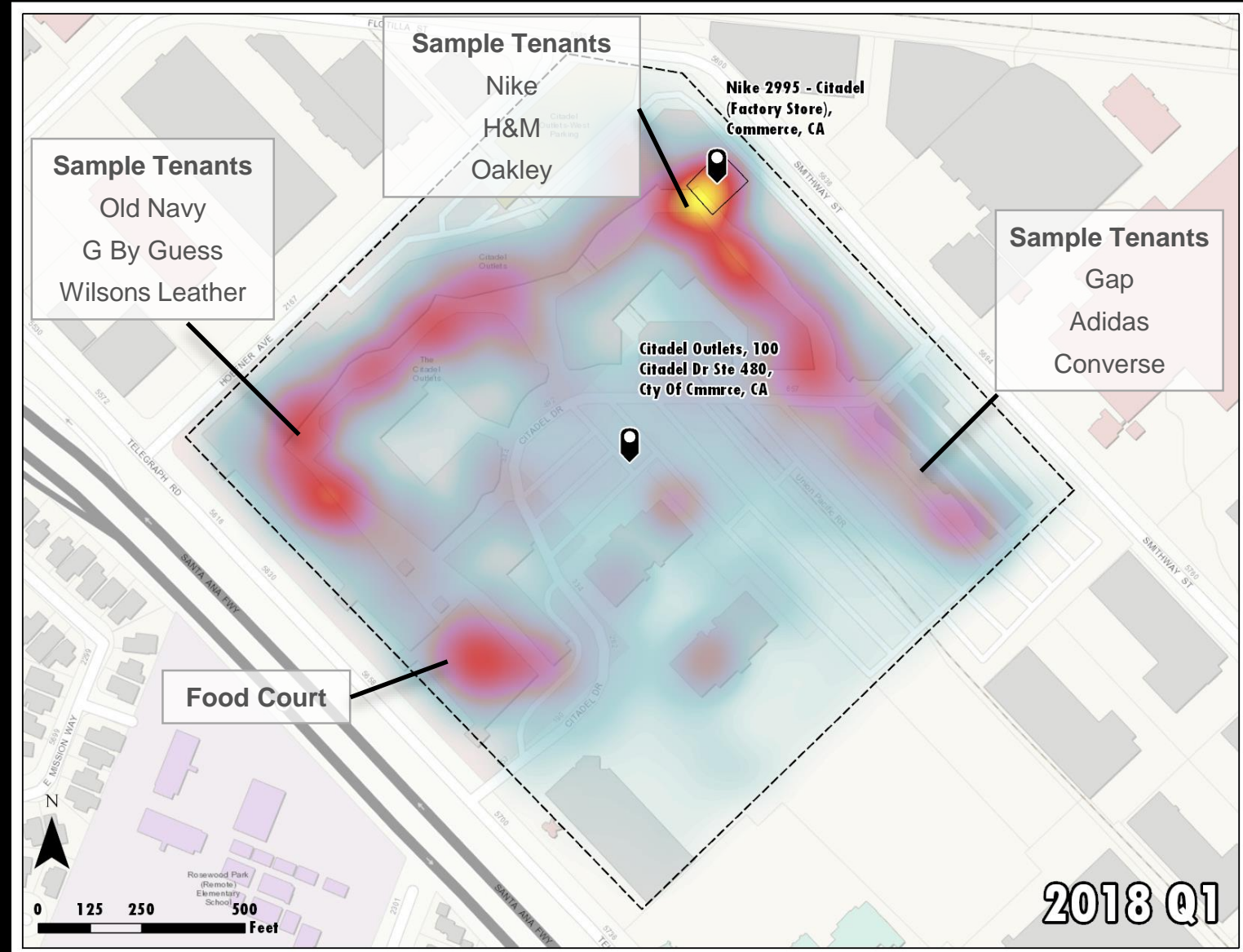
Q4: October 1 - December 31, 2017

Citadel Outlets

2018 Q1

Location	Estimated	% Diff from last quarter
Citadel Outlets	478,779	-23.4%
Nike Citadel	48,107	-7.4%

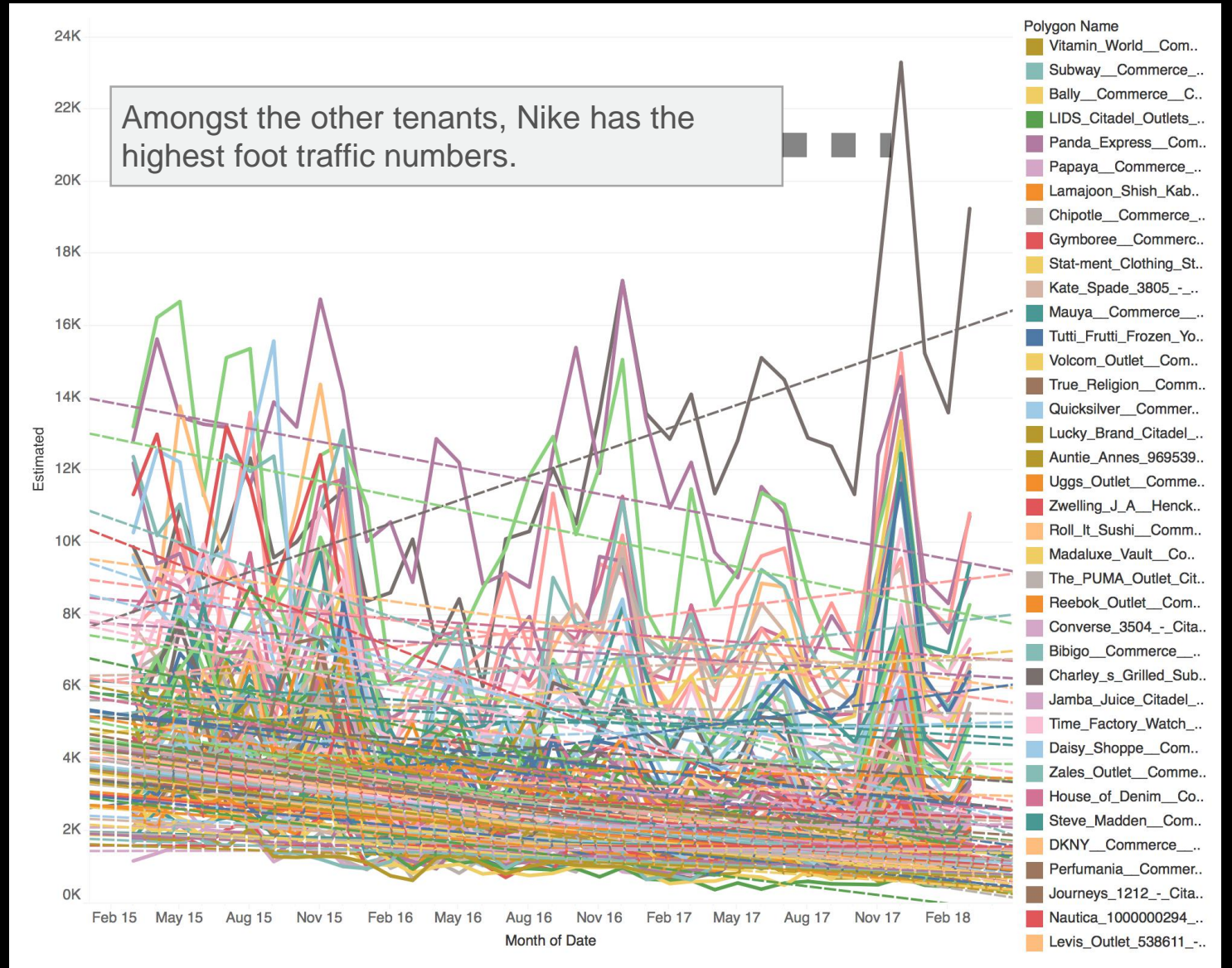
- As expected, both Citadel and Nike saw their post holiday foot traffic drop.
- Nike's drop is much smaller than Citadel Outlets as a whole.
- Nike area remains the most attractive or concentrated area within the center.



Q1: January 1 - March 31, 2018

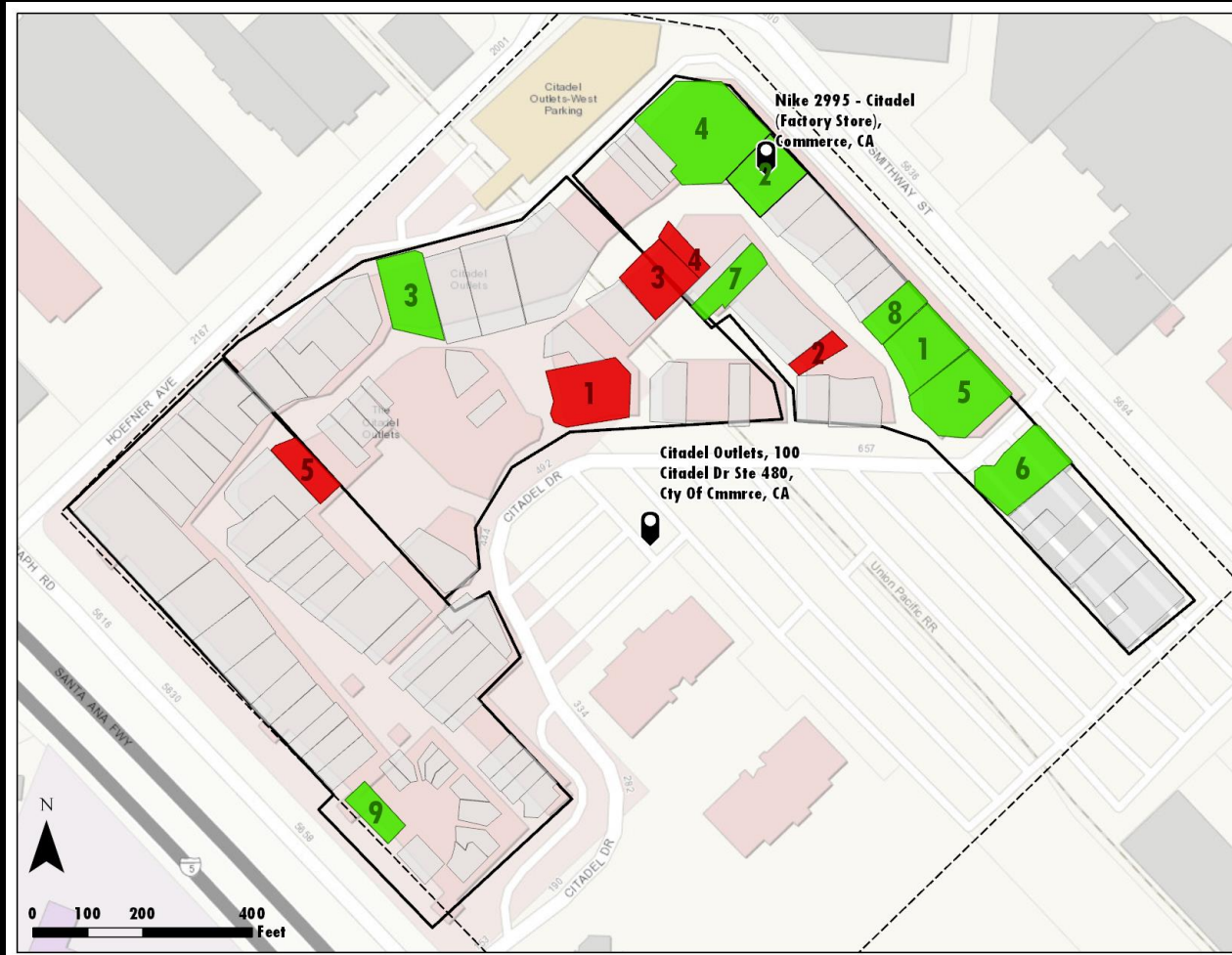
Citadel Outlets

Winners and Losers



Citadel Outlets

Winners and Losers



Winners (9 of 91)

R	Store	Change over 3 years
1	Adidas Outlet Store	126%
2	Nike Factory Store	105%
3	Guess	52%
4	H&M	43%
5	Gap	43%
6	AEO Factory	17%
7	Cosmetics Company Store	7%
8	Converse	5%
9	Papaya	4%

Losers (Top 5)

R	Store	Change over 3 years
1	Calvin Klein	-91%
2	Fossil	-86%
3	Michael Kors	-81%
4	Lascoste	-81%
5	U.S. Polo Assn	-71%

An aerial, top-down view of a city grid, likely New York City, rendered in a monochromatic teal color. The buildings are represented as rectangular blocks of varying heights, creating a textured, three-dimensional effect. The streets form a clear grid pattern. The overall image has a soft, slightly blurred quality, giving it a modern, digital feel.

“Without data, you’re just another person with an opinion.”

W. Edwards Deming



The Analytics of Everywhere

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