



COGENT SOLUTIONS FOR OUR CONNECTED WORLD

Using Big Data to Understand Your Customers



September 13, 2016

What is “Big Data”?

❑ Big Data: Extremely large data sets that may be analyzed to reveal patterns, trends and associations.

❑ Examples:

- ❑ Purchases
- ❑ Online shopping
- ❑ Digitized historical data
- ❑ Media
- ❑ Machine log data
- ❑ Sensor data
- ❑ Public data
- ❑ GPS and mapping
- ❑ Social media
- ❑ Biometrics



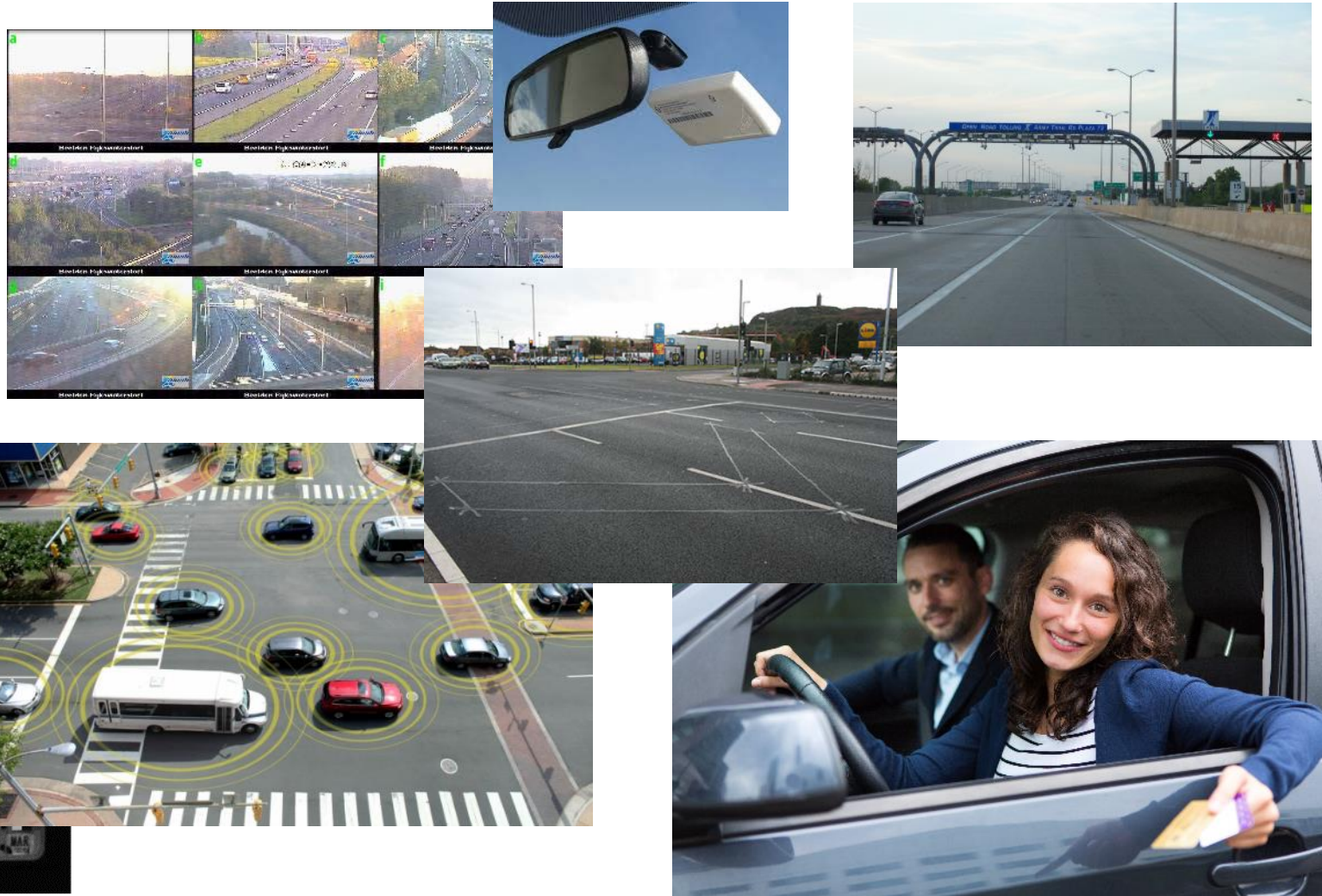
EVERY DAY WE CREATE
2,500,000,000,000,000,000
(2.5 Quintillion) BYTES OF DATA

90% OF THE WORLD'S DATA
HAS BEEN CREATED IN THE
PAST 2 YEARS

Big Data in the Tolling Industry

❑ Data Sources:

- ❑ Transponder data
- ❑ Road sensors
- ❑ Trip transactions
- ❑ License plate images
- ❑ Traffic video
- ❑ Weather/road conditions
- ❑ Traffic volume
- ❑ Customer data



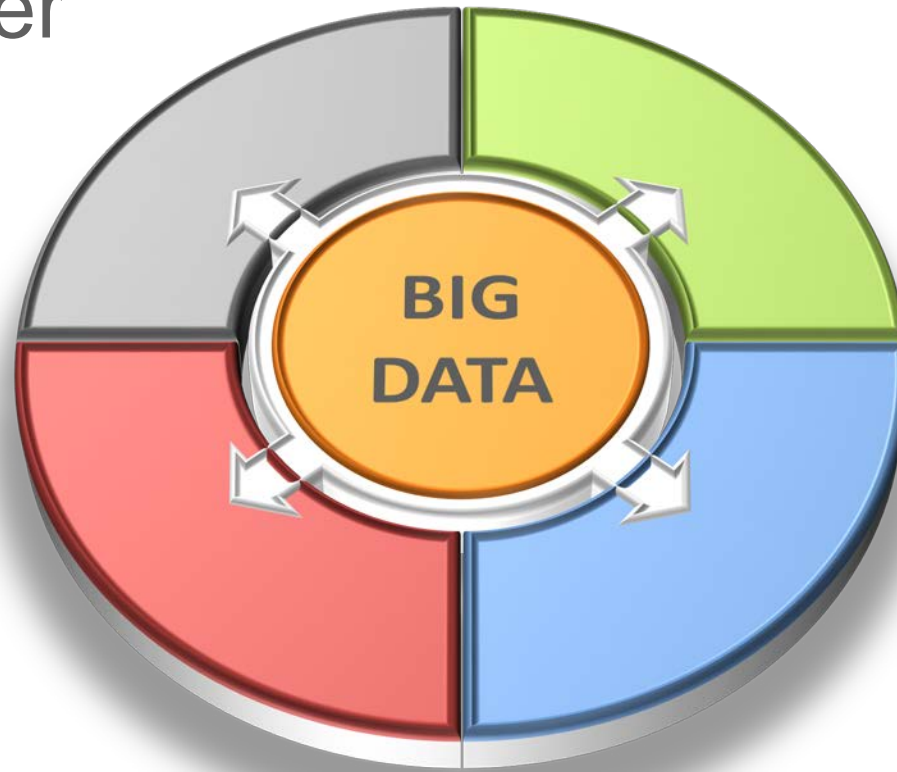


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How Do You Use Big Data?

Understand Customer Needs Better

Reduce Costs



Make Processes More Efficient

Detect Risks or Failures

Why is it Important to Understand Your Customers?

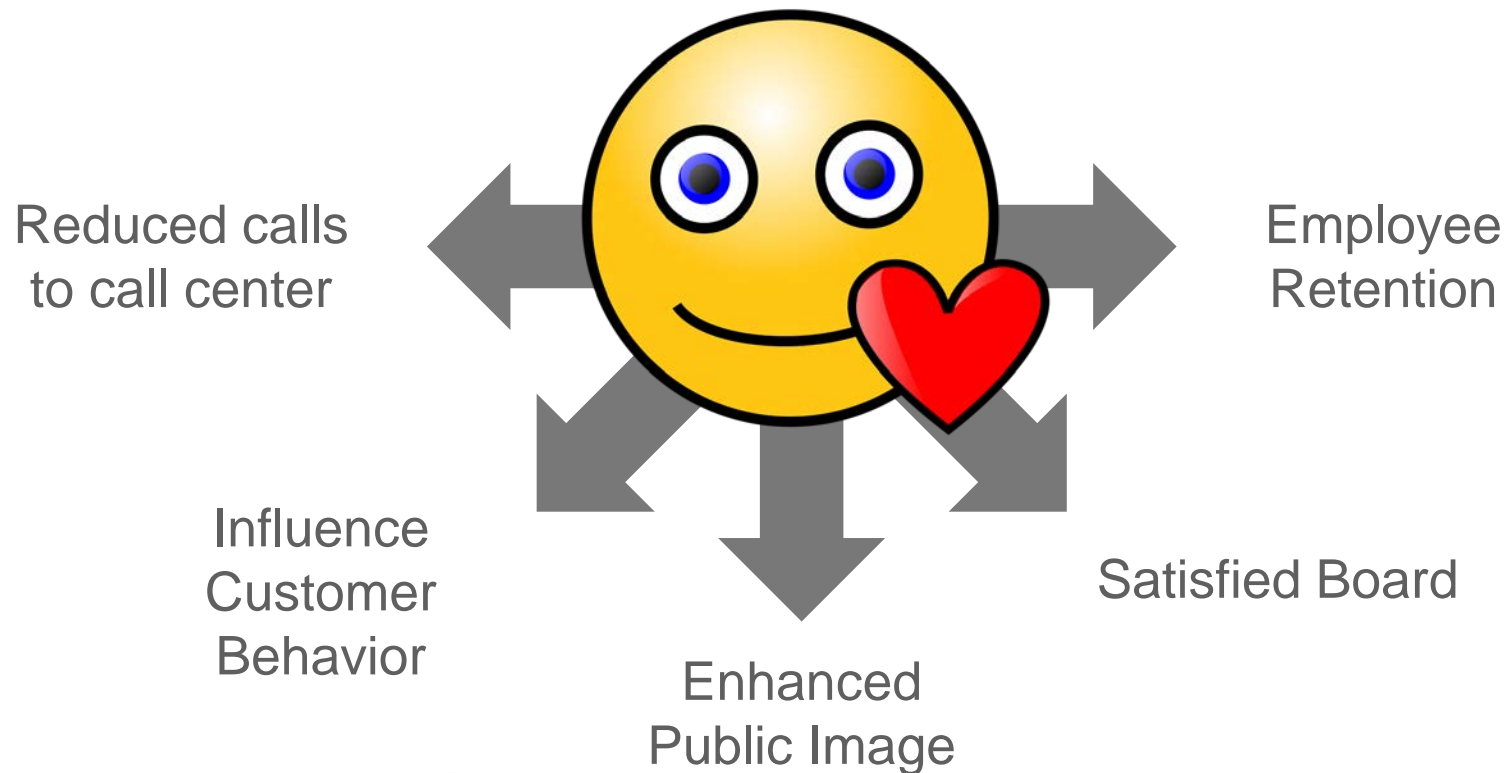
Toll customers are consumers



Know me. Show me that you know me. Show me that you care.

Why is it Important to Understand Your Customers?

- ❑ Toll customers are consumers
- ❑ Customer satisfaction matters



Why is it Important to Understand Your Customers?

- ❑ Toll customers are consumers
- ❑ Customer satisfaction matters - They vote!
- ❑ Planning and strategy for future initiatives



How to Use Big Data to Understand Your Customers

Toll Data

- Transponder/Plate
- Location
- Time of Day
- Amount

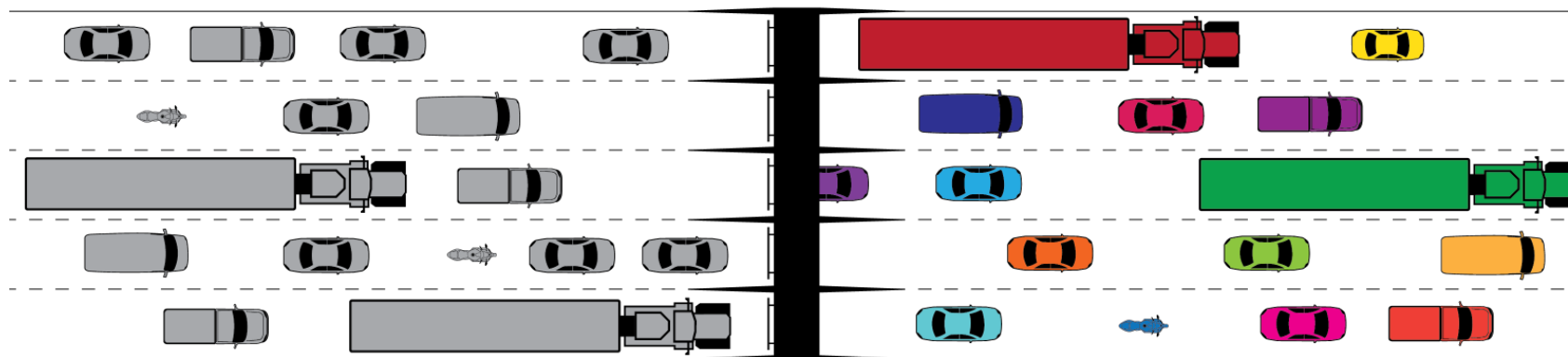
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Consumer Data

- Age
- Income
- Banked/Unbanked
- Attitudes

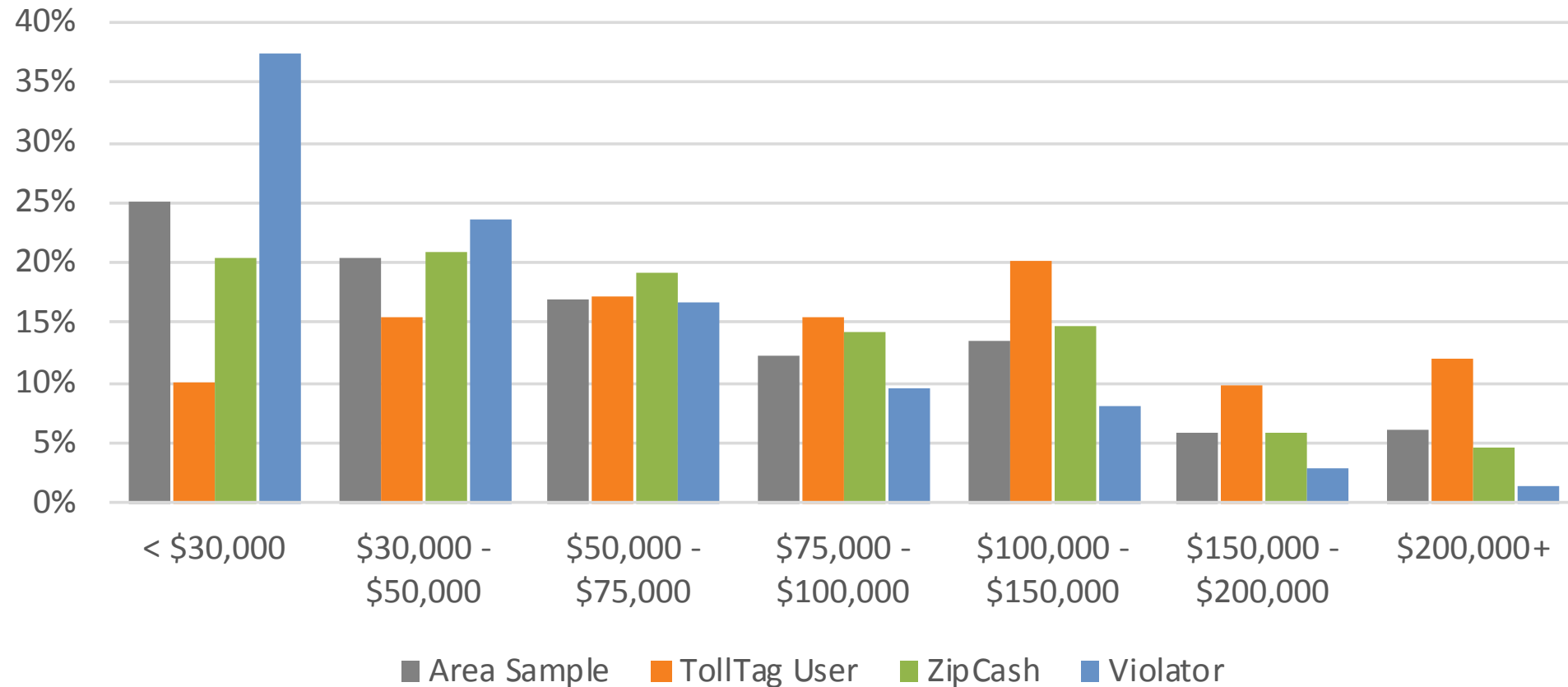
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Deep understanding of your customers



Example – Income by Customer Type

Household Income

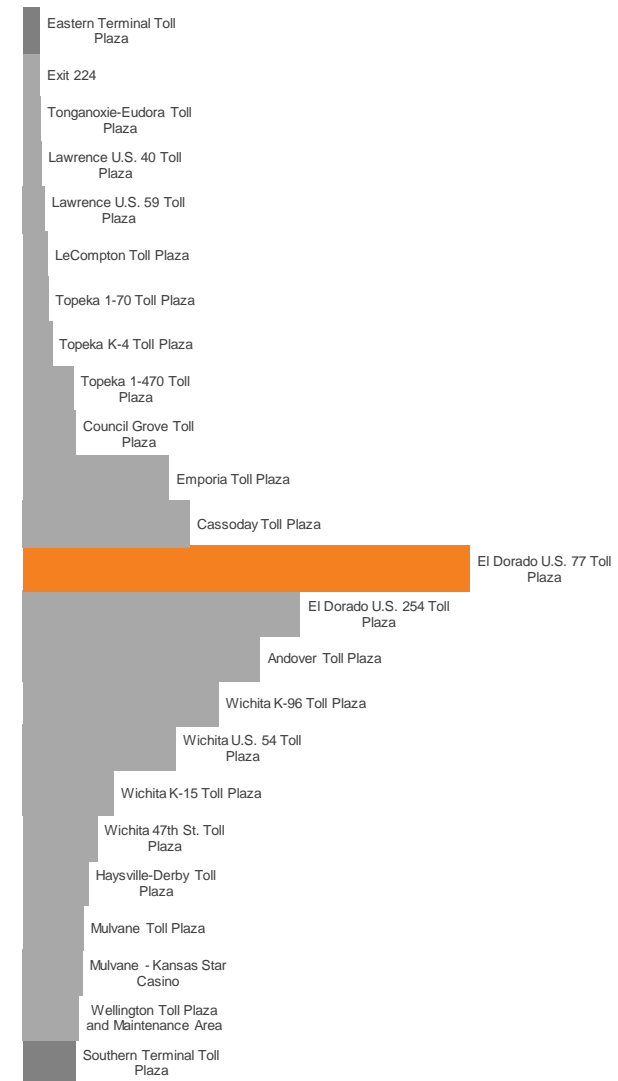


Example – Exit Activity Graph

North/Eastbound – length represents number of times that entrance was either used or passed

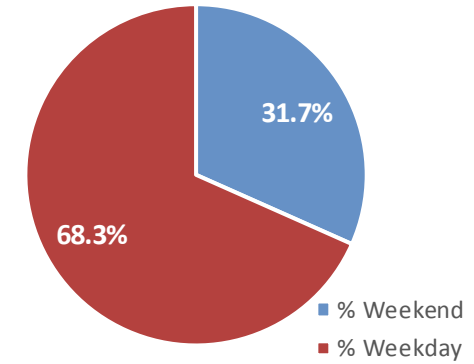
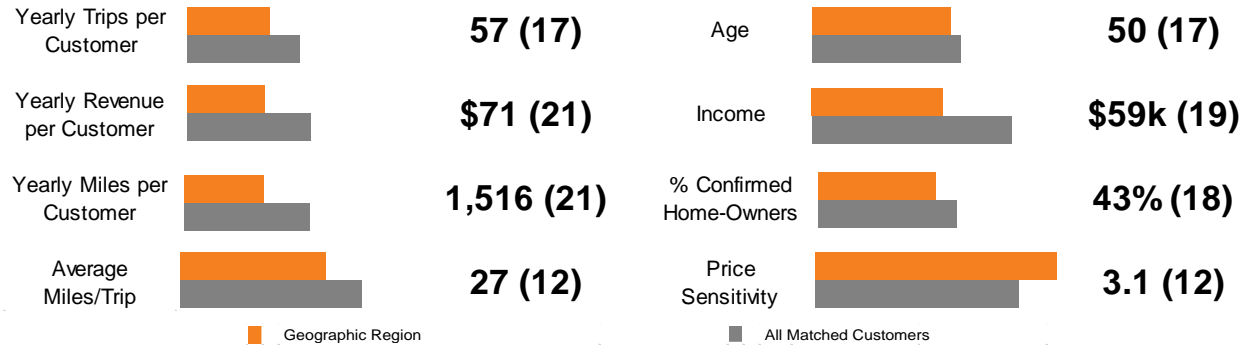
South/Westbound – length represents number of times that entrance was either used or passed

Exit Point



Example – Entry/Exit Analysis

KPI for Customers in Geographic Region (Rank)

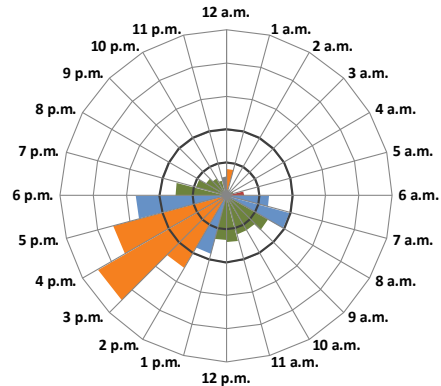


K-Tag Customers: 3,582
Top Prospects Available: 4,567

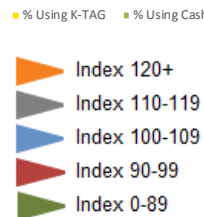
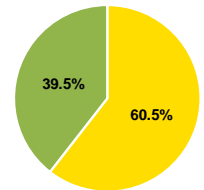
Entry Behavior

KPI for Trips Originating at Wichita K-15

Metric	KTA Overall*	Value	Index	Rank
% of Trips	4.8%	2.1%	43	15
% of Revenue	4.8%	1.0%	21	14
% of Miles	4.8%	1.1%	23	14
Average Revenue	\$2.42	\$1.15	47	19
Average Miles	40.98	21.26	52	19
% Using Tag	44.6%	62.6%	141	6



Blended Trip Distribution



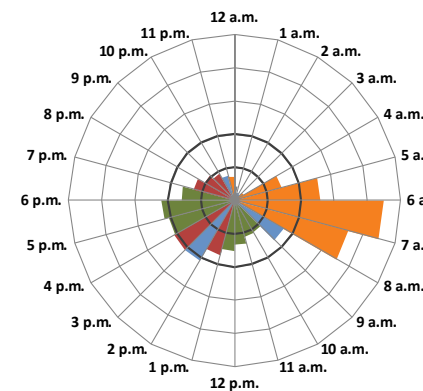
Strong mix of K-TAG customers; early commuters

Each ring represents 5%

Exit Behavior

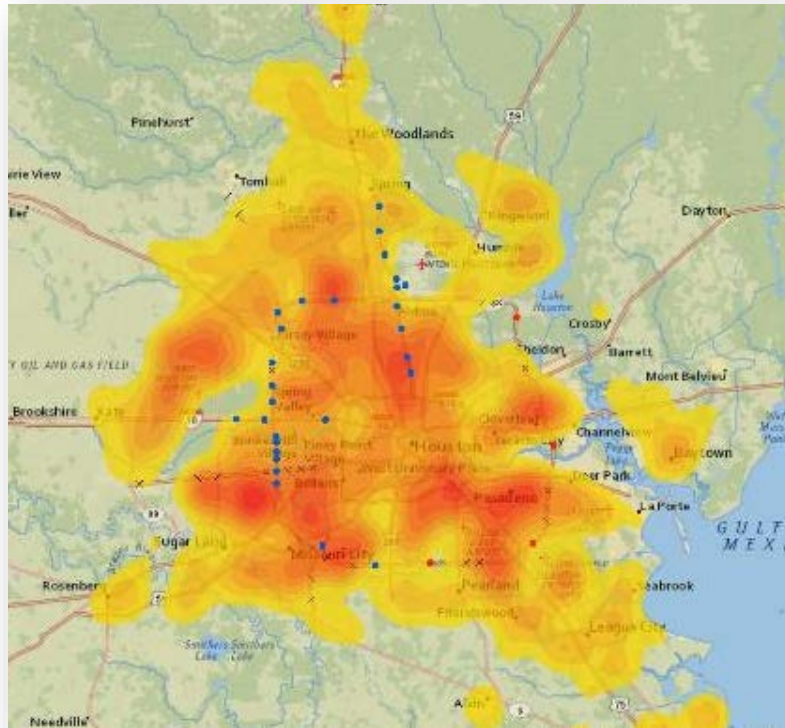
KPI for Trips Exiting at Wichita K-15

Metric	KTA Overall*	Value	Index	Rank
% of Trips	5.0%	2.2%	45	13
% of Revenue	5.0%	1.2%	23	13
% of Miles	5.0%	1.2%	25	14
Average Revenue	\$2.42	\$1.24	51	17
Average Miles	40.98	22.34	55	17
% Using Tag	44.6%	60.2%	135	5

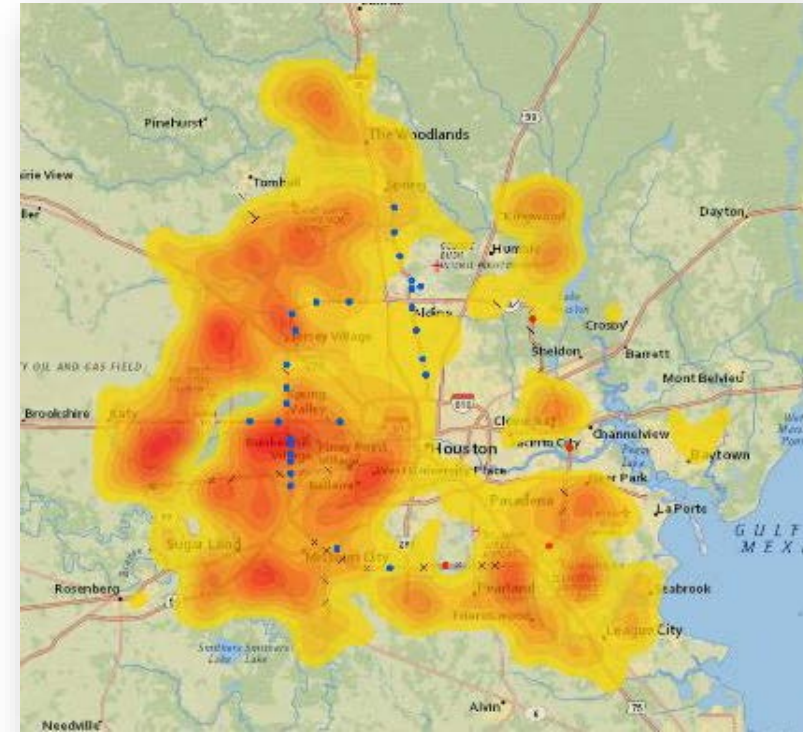


Example – Heat Maps

Cash Customers



Transponder Customers



Example – Customer Segmentation

Young Potential

Key Performance Indicators

of Customers: 2,095 (5.7%)
14.6% of Total Trips
21.1% of Total Peak Trips

Miles Traveled: ↑↑
AM Shoulder Trips: ↑↑
PM Shoulder Trips: ↑↑
Return Trips: ↑↑
Age: ↓↓
Income: ↓↓
Price Sensitivity: ↑↑↑



Behavior Characteristics

Usage

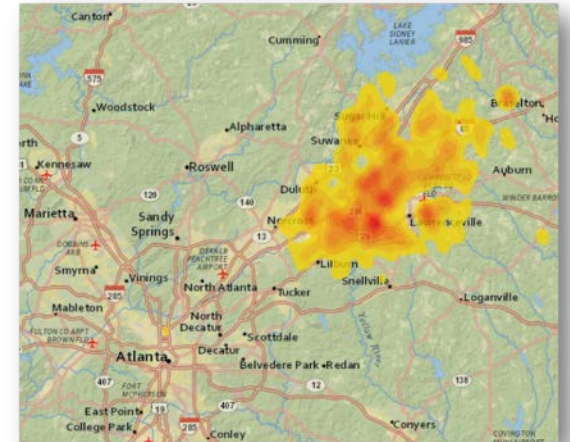
- Avg. trips/week: 4.0
- Avg. days/week: 2.5
- Avg. trip length: 8.4 miles

Travel Patterns

- 50% of trips occur during peak hours
- 17% of trips occur during shoulder
- 52% of days traveled using HOT Lane roundtrip

Demographics

- Young and single – aged below 35
- Income \$30k-\$75k
- Socially active and influential
- Top Silhouettes: New Luxury, Americana Families, Young Neighbors





What You Can Do Once You Know Your Customers

- ❑ Targeted Customer Driven Initiatives
- ❑ Change Driving Behaviors - Congestion Relief
- ❑ Increasing Transponder Penetration
- ❑ Rewards Programs



Young Potential

Key Performance Indicators

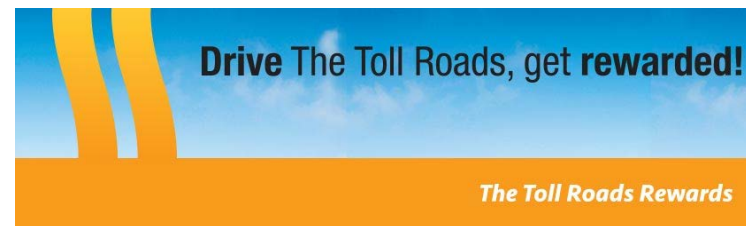
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 # Return Trips: ▲▲
 Age: ▼▼
 Income: ▼▼
 Price Sensitivity: ▲▲▲



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Thank You!

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