North/West Passage
Third Party Data Providers – Summary Report

December 2015

Introduction

Third party data providers gather traffic data from a variety of sources and distribute information to assist a growing variety of markets including automotive, mobile, government, media and industry. Participants at a North/West Passage sponsored Regional Operations Forum in May 2015 identified a need to explore third party data providers to better understand the data they provide, how the data is obtained, and how agencies could better supply data to them.

The North/West Passage Steering Committee recommended that the Operations Task Force include a longer, more detailed discussion in their work plan to address the initial questions raised about third party data during the Regional Operations Forum. Then, based on that discussion, the task force may consider suggesting a project idea to further address specific aspects of third party data.

Approach

The approach used for this effort first involved leveraging the 2012 ENTERPRISE report, "Understanding Utilization of Third Party Data and Information," which summarized basic data and source information available from three of the better known providers – INRIX, HERE (formerly Navteq/Nokia) and AirSage. Additional information was gathered from each provider's web site and used to update what was already known about data and sources. Waze, a provider owned by Google, was also added to the research at this stage.

Finally, all of the providers were contacted by email to obtain further information about their interaction with transportation agencies as a source of data. After briefly explaining North/West Passage and its interests – with emphasis on the rural nature of the states – the following questions were asked of each provider.

1. How are you obtaining information from transportation agencies? For example, are you using XML feeds published by agencies, or scraping data from traveler information web sites?
2. Which transportation agencies in the United States are you gathering data from? All 50 state departments of transportation? Metropolitan planning organizations? Both urban and rural states? Others?
3. Of all the data that you gather, approximately what proportion of that data comes from transportation agencies?
4. The Federal Real-Time System Management Information Program final rule on traffic and travel conditions required, "Establishment of the real-time information program for traffic and travel conditions on the Interstate system highways shall be completed no later than November 8, 2014." How has the November 2014 deadline impacted the data that you are receiving from transportation agencies?
5. Based on the experience you have had with data from transportation agencies, is there anything that you would like to see the agencies change or do differently with their data? For example, how it is provided, the format it is provided in, etc.?

This summary report presents the information gathered from the interviews and research described in the approach. The information is presented in four sections that first briefly describe the providers and then address the data provided, data sources, and transportation agency involvement in relation to each. The information gathered through this effort was also shared with the Operations Task Force during their November 18 meeting. Comments from the task force are summarized in the conclusion to the summary report.

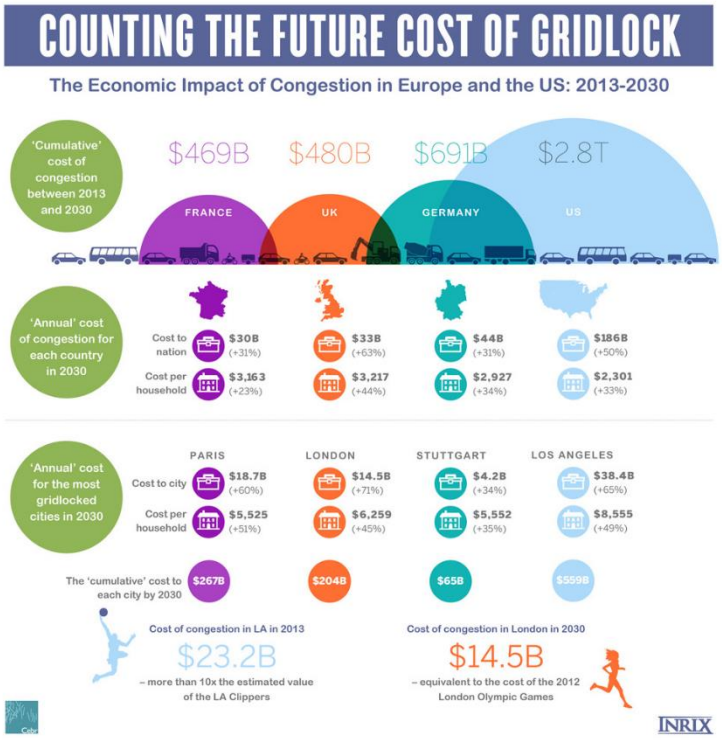
Third Party Data Provider Background

Four providers of third party data were reviewed for this effort and this section presents a brief description about each to offer some context for the additional information presented in the report about data, sources and interaction with transportation agencies. For each provider, a general description of their business is offered along with an indication of the size and scope of the market they serve.

INRIX

INRIX describes themselves as a global **provider of Internet services and mobile applications** regarding roads, traffic and driver services. Their goal is to empower drivers, facilitate planning and enhance commerce. The products they offer are based on the analysis of vehicle data from more than **two million GPS-enabled vehicles and mobile devices,** as well as traditional road sensors. INRIX collaborates with hundreds of organizations worldwide on **over 4 million miles** of road networks **across 40 countries** to offer their products and studies like the one illustrated in Figure 1. Additional information about INRIX and its products is available at www.inrix.com.

Figure 1 INRIX Study to Assess Economic and Environmental Costs of US Traffic



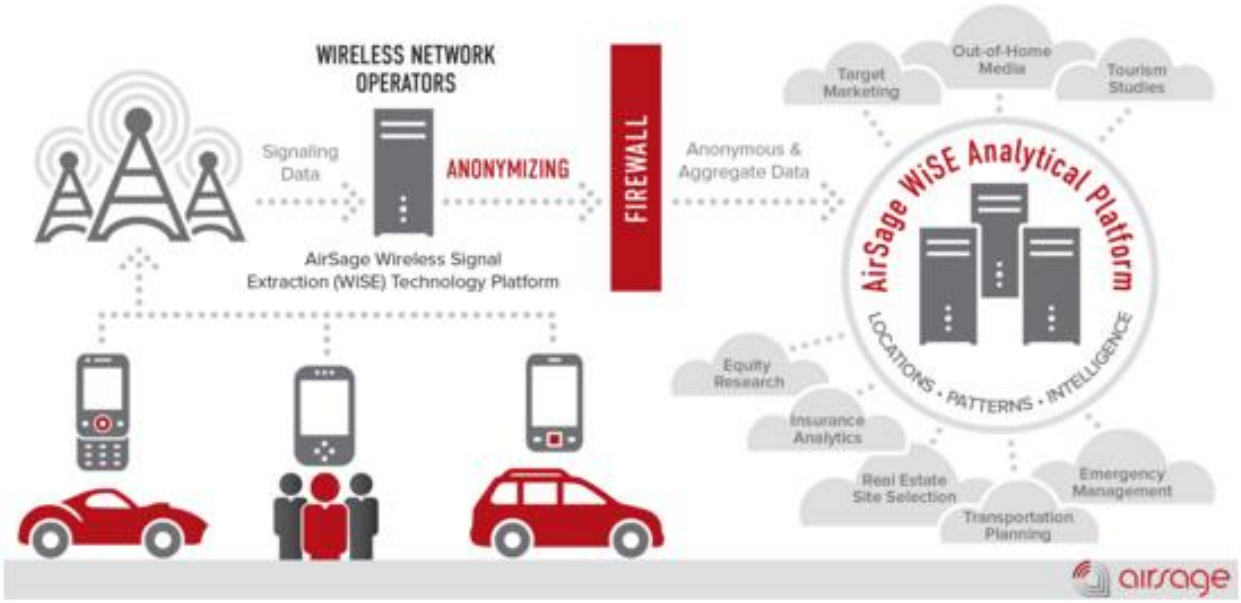
HERE

Previously known as Navteq and owned by Nokia, HERE is a leading provider of world-class **location products and services** for consumers, the automotive industry and enterprises. HERE builds high-definition maps by collecting real-time data from **over one trillion GPS data points.** The data is used to anticipate future traffic conditions and combines maps with cloud technology to create personalized solutions. HERE serves global customers in **196 countries** and more than 950 cities. More information about HERE products may be found at www.here.com.

AirSage

AirSage states they are the largest provider of **consumer locations and population movement intelligence** in the United States. As illustrated in Figure 2, they transform **wireless network signaling data** into mobility information by collecting and analyzing real-time mobile signals to produce **over 15 billion anonymous locations every day.** AirSage partners with nation's largest wireless carriers to access data from **more than 100 million mobile devices** in the country. Further information about AirSage products is available at www.airsage.com.

Figure 2 How AirSage Works



Waze

Waze is described as the world's largest **community-based traffic and navigation app provider** as well as leading source of the **most up-to-date community-edited map.** They **connects millions of drivers to share** real-time traffic and road information by creating local driving communities that work together to improve the quality of everyone's daily driving. Waze serves connected citizens and governments **worldwide** and offers more information about their products and services at www.waze.com.

Data Provided

Each of the providers offer a distinctive mix of data with some overlap and distinction. Table 1 provides a high-level summary of the type of transportation-related data offered by INRIX, HERE, AirSage and Waze. It must also be noted that some data is uniquely labeled in providers' promotional materials and the table represents a summary of data combined into broader categories to offer comparison.

Table 1 High-Level Summary of Data Provided by INRIX, HERE, AirSage and Waze

Data Provided	INRIX	HERE	AirSage	Waze
Alerts – crashes, traffic, police, road hazards	X	X		X
Archived (historical) data	X	X	X	
Construction	X			X
Delivery routes		X		
Events	X			X
Electric vehicle services	X			
Environmental zones		X		
Extended lanes and lane markings		X		
Fastest routes	X			
Fuel prices	X	X		X
Fuel stations		X		X
Geospatial, fleet, government and logistics apps		X		
Loading dock locations		X		
Location and movement	X		X	
Maps	X	X		X
Navigation	X	X		X
Parking	X	X		
Diversion routes	X			
Corridor usage	X			
Postal code and census boundaries		X		
Roadway physical characteristics	X	X		
Road restrictions – physical and legal		X		
Route planning		X		
Signals and warnings		X		
Speed	X	X	X	X
Speed limits		X		
Toll data		X		
Traffic cameras	X			
Traffic conditions	X	X		X
Traffic data feed		X		
Traffic forecasts	X			
Traffic patterns	X	X	X	
Travel time	X	X	X	X
Traveler information	X	X		X
Trend analysis	X	X	X	
Vehicle volume counts	X	X	X	
Weather conditions and forecasts	X	X		

Data Sources

As with the data they offer, the providers also have unique approaches to the type of data they collect and how it is enhanced and repurposed to customers. Table 2 presents a brief summary of the various sources that providers gather data from. Visit each providers' web site for more information about how each provider combines and enhances the data they gather.

Source	**INRIX**	**HERE**	**AirSage**	**Waze**
Community updates				X
Government agencies - national, state, local	X	X		
Local field offices		X		
Mobile phones	X	X	X	
Probes	X	X		
Proprietary sensors		X		
Satellite		X		
Web sites	X	X		

Transportation Agency Involvement

As described in the approach to this effort, representatives from INRIX, HERE, AirSage and Waze were contacted for additional information about the data that they receive from transportation agencies. The questions were intended to gather further detail about how and to what extent the providers interact with transportation agencies for gathering data. North/West Passage states also wanted to understand if the providers had ideas about how data could be improved. Responses were received from INRIX and HERE. AirSage also responded but noted that they had little more to offer as they do not currently gather data from transportation agencies.

INRIX uses XML feeds with standard incident details and has a team that manually reviews incident data and periodically monitors transportation agency web sites. INRIX gathers a significant amount of from state departments of transportation, however, not all departments publish open data feeds. They also gather data from metropolitan planning organizations, such as MTC in the Bay Area. INRIX depends on receiving data as a real-time feed that is consistent and includes all standard fields. INRIX noted that it would be useful if all agencies would **offer data feeds in the same standard format (e.g. breadth and depth of data) and from a menu of popular formats (e.g. XML, API)**. INRIX also noted that there have not been any noticeable changes in data feeds since November 2014 when the initial requirements associated with the Real-Time System Management Information Program.

HERE noted that although they are gathering data from many rural and urban transportation agencies, that data is not always current or accurate. As such, they supplement agency data with data from other sources to validate and improve accuracy of what HERE ultimately provides its customers. HERE also shared that a small percentage of their data is actually coming from transportation agencies. If improvements were made by the agencies, HERE would encourage them to **focus on maintaining currency and accuracy** of the data agencies provide.

Conclusion

This summary report provided an overview of select third party data providers, the data they offer, they sources they gather data from, and providers' input on improving transportation agency data. As the information was shared with the Operations Task Force, it was observed that third party data will likely be greatly impacted by the increased availability of data from Connected Vehicles in the future. Although that impact is not yet clear, it will certainly make additional data available to providers as well as transportation agencies. It is also possible that the analytical services currently offered by providers will be in even greater demand from transportation agencies in the future as the providers will be more experienced at processing massive amounts of data. The potential future impact of Connected Vehicles on third party data is one area the task force could consider for further exploration under another effort by North/West Passage.