Esri News

for Business

# Cisco Talks Successful Supply Chain

Cisco Enhances Global Information Transparency throughout Its Service Supply Chain

Warner De Gooijer, a strategic analyst with Cisco Systems, Inc., was a featured plenary speaker at the Esri Business Summit held July 7–9, 2013, in San Diego, California. De Gooijer discussed how the Cisco Global Service Supply Chain (GSSC) has integrated the ArcGIS platform, making it easier to do business and provide value to the company.

"ArcGIS is a foundational platform for Cisco that globally aligns information transparency and enhances customer intimacy through improved location awareness," said De Gooijer. "Although the rollout is still at an early stage, ArcGIS is already proving its value through improved operational visibility and performance awareness."

The Cisco Global Service Supply Chain provides two-hour, four-hour, and next-business-day service delivery offerings to its customers. On-site field engineers and more than 1,100 depots in 128 countries are available for dispatch to make necessary hardware replacements at customers' sites. There are millions of parts on Cisco's service contracts and billions of dollars invested in the organization's spare parts inventory.

ArcGIS provides staff with an accurate visualization of Cisco's Global Service Supply Chain footprint and operational capabilities by linking into Cisco's
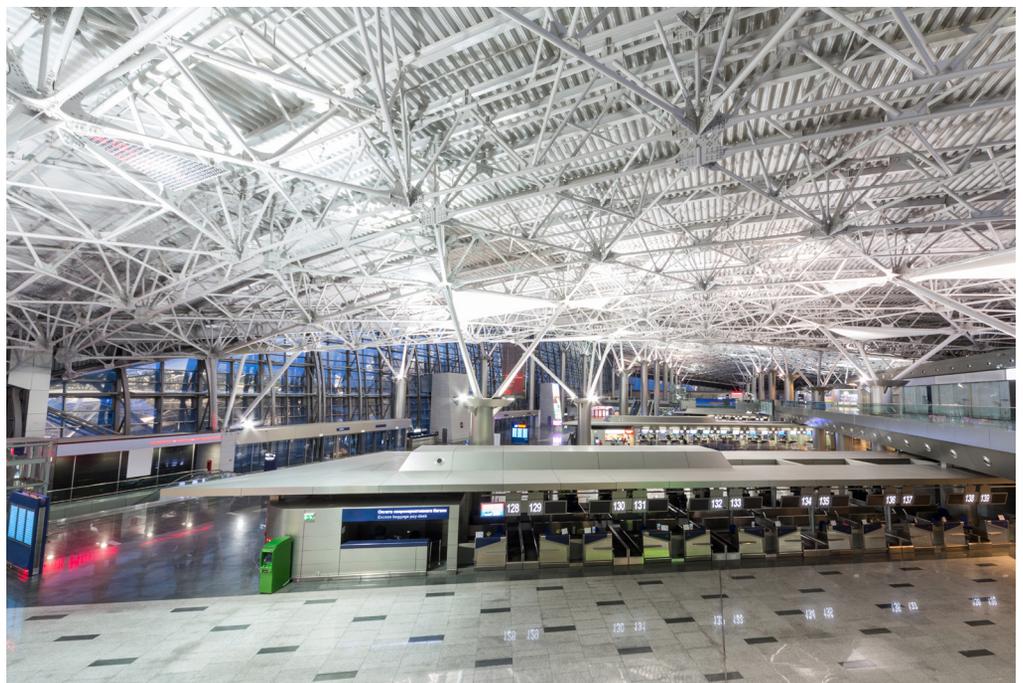
↑ ArcGIS provides Cisco's Global Service Supply Chain staff with an accurate visualization of its operational capabilities.

business environment. Customer-to-service depot assignments are automated, making it more efficient to distribute the spare parts inventory. Through this improved visibility of service territories, significant traction has been made in eliminating coverage overlaps, removing service gaps, and optimizing the service part delivery network.

"Cisco continues to be one of Esri's most innovative and advanced users of supply chain analysis and visualization solutions," said Simon Thompson, director, commercial solutions, Esri. "It is an example of how to more effectively model and

manage the supply chain, reducing risk as well as costs while improving customer benefits. It's a story that everyone should hear."

For more information on how Esri helps organizations with marketing around the world, visit esri.com/retail.

Contents

Business Sense

Simon Thompson
Director, Commercial Solutions, Esri

Understanding geography and using location information is one of humanity's most ancient arts. Today, location analytics is the intersection of business analytics and information technology. Maps help people make better decisions by providing more compelling insight and understanding. Whether in a single department or across an entire organization, location analytics and GIS offer boundless possibilities.

Why location?

Location matters. Not just because of the mass adoption of smartphones, location-aware applications, or the explosion of location-based big data. Location matters because it ties many business units together and makes it possible to solve problems that had no solutions before. It enables us to ask new questions and gain new insight and understanding by looking at traditional data such as sales, costs, profit drivers, and customer characteristics or desires in new ways. Location comes embedded with many of the new types of information that are core to twenty-first-century businesses—social media, check-ins, mobile searches, online shares, and more. Every offer and marketing contact has a location too. It's time you lifted the fog and saw your business opportunities with clarity.

Location is fundamental to all aspects of business, from deciding where to locate a new store to optimizing your supply chain or more engaged marketing campaigns that resonate with your best customers. Business has used geographic information systems for decades to analyze, visualize and understand location information and make more informed business decisions. Now, organizations can use Esri's location analytics solutions to add new insight by unlocking the geographic context of their business systems including customer relationship management systems, business intelligence, and office productivity tools.

What to Do When Your Honey Turns Blue

Connect the Dots, One Intelligent Map Point at a Time

By Simon Thompson, Esri Director of Commercial Solutions

When bees in France began producing blue honey, people started to scratch their heads. It wasn't until several months of intense sleuthing that the source of the color was found: bees have a sweet tooth, and they'd made a beeline to a local M&M/Mars production center and found the blue M&Ms irresistible.
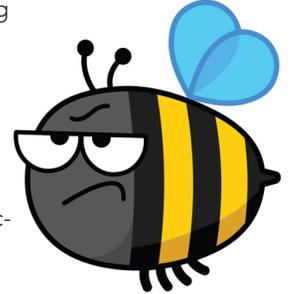
When we want clover honey, we set up beehives near clover. The same goes for honeysuckle and blackberry, so it makes sense that the bees in this area would use a local food source—albeit M&Ms—and reflect it in their honey.

What these bees understand—but sometimes we humans don't—is that our world is connected. The case of the blue honey could have been solved so much more quickly if we'd have taken that into consideration. Often, the best way to solve a problem is to go back to basics. What if, instead of the linear thinking that people did to find out why honey was blue, people had thought of the bee itself—the flight pattern and ground covered when a colony searches for food. From a bee's perspective, they were exploiting opportunities in the geographic landscape as they searched for and used possible food sources. Isn't it more logical to assume, from a bee's-eye perspective, that something had changed in the hive's range or that something had happened to the hive's environment? I wager thinking in this connected, natural manner could have solved the case of the blue honey in a matter of hours, not months.

When we look at other mysteries in food sources, and in this case, I'm talking human food sources, we should channel Muhammad Ali and all "float like a butterfly, sting like a bee."

Float. What if we could float above it all and actually see where all our food comes from and where it has to go in order to get to us? No longer is the majority of our food produced and supplied directly to the consumer. Unless you grow your own garden or are part of a farmers' co-op, you are getting food from the global supply chain, and that supply chain can be very long. On one recent shopping excursion, the 25 ingredients I was buying for a family dinner came from 17 different countries.

2013 KPMG study identified 450 points at which supply chain integrity can be compromised. Think about this. That hamburger, that pork sausage, or that turkey sandwich you are about to savor is part of a process that means it could have been handled more than 400 times from the time it was a cow, pig, or turkey until it goes into your mouth.

Appetizing? Neither is the news that suggests some supply chains are broken—just recently, the news reported that fecal matter has been found in more than 80 percent of ground turkey in 21 states across the United States. Are you getting a flashback to the first instance of mad cow disease? Our food supply chain is not just reeling from a safety standpoint. Protection is a priority, but integrity and transparency are important too. As the supply chain expands, other issues, like culture and religion, come to play a more important role. In Islam, only halal foods are allowed; in Judaism, food must be kosher; Hinduism prohibits the consumption of beef. Ensuring the quality and providence of food sources for many different cultures has significant ramifications for how businesses are perceived.

So, what if we could see and track all these touch points, monitor all the processes that are necessary at this vast global scale, so that we could better understand what it takes to get that chicken strip from a meat-packing plant to your toddler's table—and do it safely, in a way that builds consumer confidence rather than eroding it? Sound intimidating? It shouldn't, because successful companies are doing this now.

In 2004, an outbreak of avian influenza in British Columbia, Canada, led to more than $500 million in damages and lost productivity. As a result, the government of Manitoba implemented a mandatory premises identification program that required the assignment of a unique number to anywhere livestock and poultry are grown, kept, assembled, or disposed of.

Each animal can be linked to every location it passes through, so now animal health data, be it a herd or an individual, can be tracked and connected to every movement. This doesn't just help visualize disease spread but enables the root cause or sources of a potential outbreak to be identified.

This focus on detailed location-centric data has redefined the way animal health events are managed and responded to in Manitoba. Instead of staff traveling door to door, those likely to be impacted by an event can be quickly identified through spatial analysis, plotted, and understood against a map view, and plans put in place to involve and inform all the necessary stakeholders. Location analytics is an invaluable communication tool to keep everyone updated on status or to inform the public. For example, egg farmers can be notified if their barns are at risk, politicians can be kept up-to-date on the latest developments, and information can be easily shared with public health and federal departments. To date, the application has helped to minimize damage and cut costs during more than 20 animal health events. And this is just in Manitoba.

All across the globe, GIS and location analytics are helping meat and livestock producers to thrive while ensuring state, regional, and national governments protect the public interest and health. Of course, this involves a lot of data, big data, that is uniquely linked by the geographic location of livestock and poultry; barns; trucks; processing plants; distribution centers; stores; legal land descriptions; owners; emergency contacts; and detailed animal information from the day it was born to the moment it appears on the shelf, freezer, or refrigerator. Having all this information tied up together using location and maps allows us to understand, discern, and analyze—float above the information and see it for what it is and what we should do.

The take-away? It's all connected—just like our supply chain.

↑ All across the globe, GIS and location analytics are helping meat and livestock producers thrive while protecting public health.

Carrefour Strengthens Business Analytics

Esri Partner Galigeo Implements GeoDashboard for World's Second-Largest Retailer

Carrefour Group, the second-largest retailer in the world, with nearly 10,000 stores around the globe, has implemented an enterprise-wide marketing solution from Esri partner Galigeo. The solution, GeoDashboard, incorporates ArcGIS and enhances existing enterprise business intelligence (BI) software to improve decision making. Carrefour staff around the world are guided through different operational workflows including retail site selection and competition analysis.

The solution improves the expansion and development strategy, optimizes direct marketing activities, and enhances store performance through a better understanding of sales territories and customer needs.

"Carrefour Group selected Galigeo, an Esri partner, because of its ease of implementation and its ability to meet technical requirements of Carrefour's data centers," says Francis Rivière,

geomarketing manager at Carrefour Group.

Galigeo's GeoDashboard uses the Esri ArcGIS platform to view and analyze spatial data to support the following:
- Traditional retail analysis such as trade areas, mailing areas, competition, customer locations, and targeted advertising
- Geographic data including Bing Maps, Nokia data, and aerial and satellite images
- Information that can be geocoded on the fly

By representing and displaying data on interactive maps, Galigeo's geomarketing application identifies hidden trends that are not discernible in tables, charts, or other dashboard widgets traditionally used in business intelligence solutions.

"We're excited to support Carrefour with a very innovative location intelligence solution focused to help Carrefour

meet its strategic challenges and help the company achieve its growth agenda," says Christian Tapia, Galigeo CEO.

"Galigeo is transforming the way companies implement marketing and sales performance applications within BI and other enterprise systems," says Simon Thompson, Esri director of commercial solutions. "Location analytics is enabling a more refined and deeper understanding of how to improve marketing and other store-level operations. It enriches data for a more intimate understanding of customer relationships, behavior, and needs."

For more information on how GIS and location analytics help businesses around the world, visit esri.com/business.
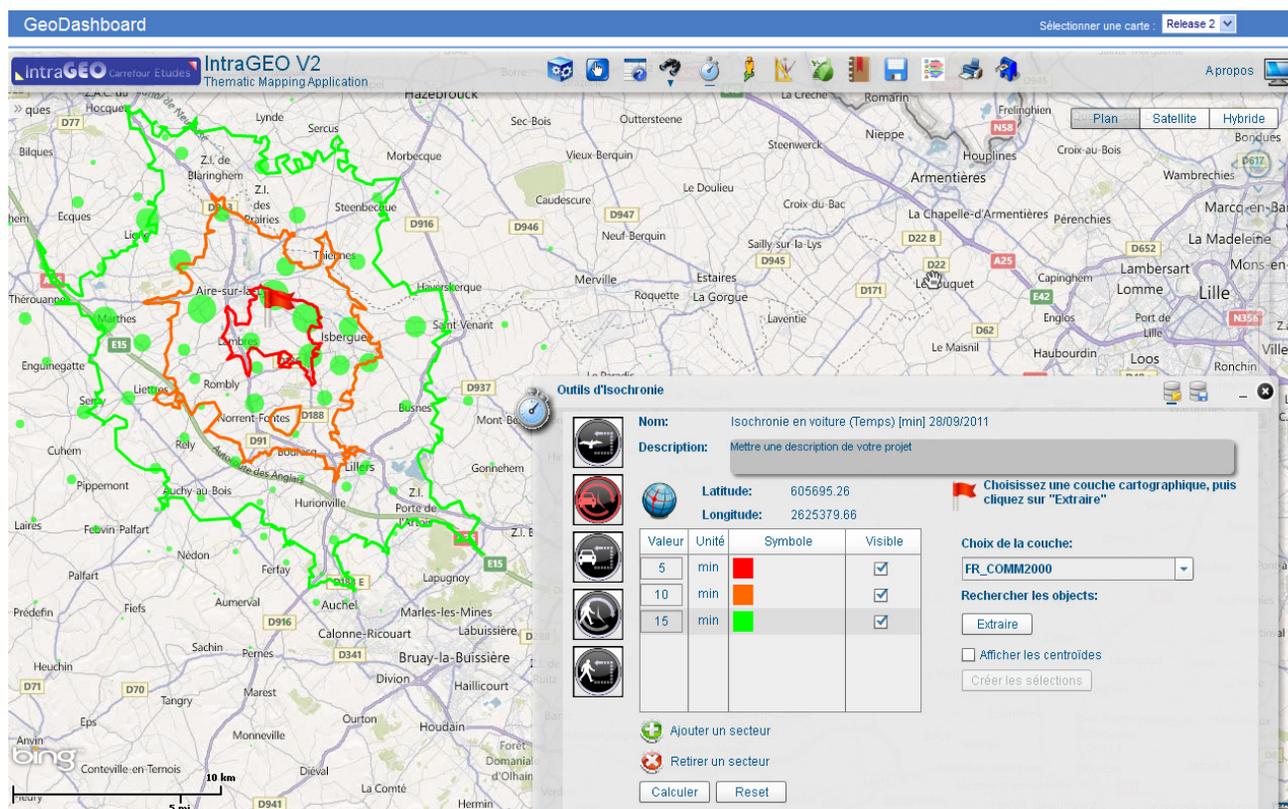
↑ Traditional retail analysis, such as drive times, can be viewed on a map, revealing more insight than with other methods.

Hy-Vee Expands Its Location Analytics Strategy

Successful Grocery Chain Site Selection and Local Area Research

Hy-Vee, a midwestern grocery store chain with more than $7.7 billion in sales and 233 retail stores, is expanding its use of the Esri platform to enhance its site selection and real estate decision making. The company's adoption of location analytics to combine demographic and psychographic data brings deep spatial insight to all users. This will enable the Real Estate Department to better align capital expenditures with market opportunities.

"Using the Esri Location Analytics platform, we are able to combine data and improve analysis to get a much clearer understanding of new and existing markets," said Andy McCann, senior vice president of store development. "We know how geography plays a significant role in consumers' choices and behaviors, and now we have more powerful insights that maximize the way we respond to and understand our customers, stores, and market presence."

A combination of Esri Business Analyst, Esri Business Analyst Online, ArcGIS Online deployed on Microsoft Azure, and Esri Tapestry Segmentation data helps Hy-Vee real estate department staff combine disparate data sources to better understand and gain market share. Location analysts, managers, and decision makers can perform in-depth analysis across the entire store network, in a single market, or down to an individual store. This helps Hy-Vee to better understand its market potential and opportunities. In addition, field staff can share on-site observations and findings using mobile and tablet devices with back-office staff ensuring quicker feedback on real estate opportunities.

"Seeing an employee-owned company like Hy-Vee become more effective and collaborative by releasing the power of location analytics is truly exciting," says Simon Thompson, director of commercial solutions at Esri. "Helping Hy-Vee bring additional services, new jobs, and economic development to communities through new and redeveloped stores is a win-win for staff, customers, and local economies. Esri celebrates Hy-Vee's continued success and growth."

For more information on how location analytics and GIS help retailers, visit esri.com/retail.

Opening the Door to New Opportunities

When The Shopping Center Group (TSCG) began almost 30 years ago in Atlanta, Georgia, the founders decided to exclusively focus on retail real estate. Today, TSCG operates 22 offices from New York down to Florida and over to Mississippi, providing a full assortment of advisory services to tenants, landlords, developers, investors, and financial institutions. Throughout its history, the company has remained true to its core mission—"Only retail, everything retail"—and is now the largest privately held retail-only real estate platform in the country.

TSCG understands that local market knowledge and relationships can mean the difference between successful placements for tenants or costly mistakes. Location analytics enables its local associates to combine their research experience, knowledge, and instinct with analytics to create critical insights for decision making. TSCG is building a platform where Esri Business Analyst and Esri Business Analyst Online will deliver up-to-date market analysis supplemented with demographic, business, traffic, and competitive information.

> "Being able to apply critical information when and where it is needed,.. will separate us from the pack."
>
> Gregg Katz, The Shopping Center Group

"Information is power, and Business Analyst provides key pieces of information that we need to get our jobs done," said Gregg Katz, director of Innovation & Technology, The Shopping Center Group. "Being able to apply critical information when and where it is needed and then analyze it is what has, and will, separate us from the pack when it comes to retail real estate."

TSCG will also benefit from Esri's Location Analytics platform through the ability to collaborate and share information anywhere on any device, including phones and tablets, using intuitive reports and map templates that consistently promote the company's brand and mission.

In retail real estate, there is a significant amount of information available; it's the ability to deliver the right information and value that matters. Esri's Location Analytics platform provides the data analysis, sharing, discovery, and collaboration that real estate companies need to differentiate excellence from average.

For more information, visit esri.com/realestate.

Keeping a Successful Franchise Growing

Great Harvest Bread Company, headquartered in Dillon, Montana, is known for its whole grain breads and baked goods. More than 220 bakeries in 43 states are run by franchisees dedicated to the company's mission of providing delicious and nutrient-rich food products to local communities.

To ensure its franchisees are both happy and successful, Great Harvest takes special care to find locations with viable territories that support long-term business success. A combination of Esri Business Analyst software and Tapestry Segmentation data allows the company and franchisees to quickly perform detailed market analysis that identifies market gaps and profitable potential locations to open new bakeries.

"The timeliness of the information we gather is of great help," said Mike Ferretti with Great Harvest. "We can now very easily pull data together, perform the analysis we need, prepare a visual story map, and share that with decision makers in minutes. This lets us focus on the process of making the business successful rather than compiling and managing data."

> "This lets us focus on the process of making the business successful rather than compiling and managing data."
>
> Mike Ferretti, Great Harvest

Profiling and ranking customers and franchise territories allows Great Harvest to better understand existing customers' behaviors to serve them better. Using cloud-based software subscriptions to ArcGIS Online and Esri Business Analyst Online enables them to quickly analyze prospective locations anywhere and supplement desktop analyses with the most current data. This information is then shared throughout the organization using intuitive story maps and visualizations.

Esri's Location Analytics platform enables franchises to understand how and where they can grow their businesses and help franchises thrive. Whether large or small, understanding and analyzing location-based data allows companies to build enduring, profitable relationships with their franchisees and customers.

For more information, visit esri.com/retail.

↓ Great Harvest Bread Company franchisees run more than 220 bakeries in 43 states.

After the Storm

By Mark McCoy, Insurance Industry Manager

The outbreak of bad weather that has plagued the United States this year has created a significant need for access to location data and pre- and postevent map imagery. I was recently on a call with a former colleague who was looking for the latest postevent imagery. He described how imagery and other recently available features of ArcGIS Online, Esri's cloud-based mapping platform, were having a significant impact on streamlining their claims workflow and efforts to effectively align field resources.

He went on further to describe how the ArcGIS Online mapping solution they created is reducing the time required to perform lots of other tasks that had been mostly manual and labor intensive before.

One of the tasks that he mentioned was the need to send information on customer impact to the primary stakeholders in the organization. Before implementing their location analytics, it would take days—if not weeks—for their data analysts to respond to these calls. Identifying the location of the event and the customers who were impacted was labor intensive, iterative, and an effort he characterized as only an approximation at best. Accurate assessments were achieved as customer loss calls were received and the adjusters deployed to the customer site confirmed that a loss had occurred.

With ArcGIS Online, the wait time for claims adjuster validation was drastically reduced. Now, within a matter of hours after event data is released, the organization establishes a more precise count of the customers who were in the impacted area. This has helped to improve the speed at which it responds to requests for information made by internal and external stakeholders. It has also reduced the impact it had on employee resources required to generate the report.

The stakeholder requests for customer impact data following events like these are customary. We've discussed one simple example of how one insurance organization has benefited from ArcGIS Online. We believe there might be several. Thinking about what maps can mean for improving workflows and customer engagement processes in your organization, what are other tasks that the use of ArcGIS Online and maps will improve?

For more information, visit esri.com/insurance.
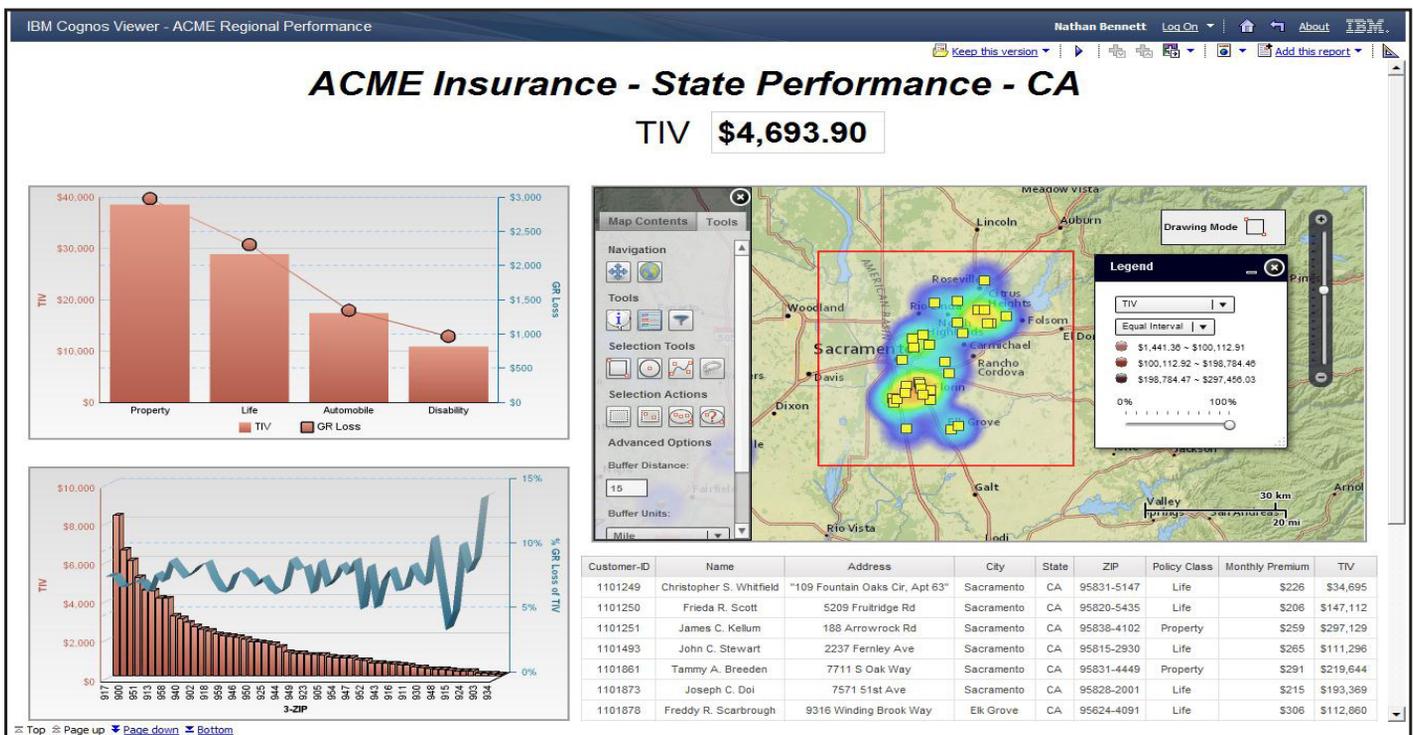
↑ Combining the event footprint, along with geocoded customer points, insurance users are able to quickly assess impacts on policyholders.

Geoenriched Mobile Claims Processing

Insurance Field-Workers Use Location Analytics for a More Streamlined Workflow

Esri and Motion Computing, a global provider of mobile computing solutions and rugged tablet technology, have aligned to help insurance agencies improve their claims workflow. By providing access to Esri's ArcGIS platform on ruggedized tablets, everyone in an insurance agency,

from adjusters in the field to analysts in the office, have access to the same real-time data. This helps streamline everything from preevent planning to the most optimal customer service delivery to postevent fraud detection.

"Esri's solutions solve the toughest geospatial challenges," said Grant Frederiksen, senior director, strategic corporate alliances at Motion. "Powered by a Motion mobile solution, including a rugged tablet, tailored accessories, and services, together we deliver powerful location-based information at the touch of a finger."

Mobile and enterprise integration of geographic

information can provide a single version of the truth throughout an organization and do the following:

- Simplify real-time and operational insight anywhere
- Enhance loss adjustment workflow, prioritization, and scheduling
- Reduce the costs and complexity of deploying work force enablement apps
- Increase individual performance and organizational efficiency

"Working with Motion, we are able to provide better collaboration and decision making at the right time and place," said Simon Thompson, director of commercial solutions at Esri.

esri.com/insurance.

Taking GIS to the Next Level at the Esri UC

Lots of Esri users stopped by the Facilities Industry Island in the Federal Showcase and GISi booth 2417 to try out a prototype mobile application for indoor logistics at the Esri UC.

Esri's Platinum Partner GISi Indoors partnered with Esri and Infsoft to create a solution demonstrating some of the cutting-edge technologies in the emerging indoor positioning marketplace. Esri UC attendees helped test the solution by downloading the app from the Android store, then provided some feedback. Users could navigate the conference floor and find vendor booths. Points of interest, including room and booth numbers, were searchable. Navigation was available via indoor turn-by-turn directions and positioning using cutting-edge sensor fusion and triangulation technologies.

Users who opted in to anonymous analytics could swing by the GISi booth to see where people were using the app. Prizes and coupons were sent to users' phones while loitering in geofences throughout the conference.

This prototype is part of a larger initiative from Esri to promote standards for indoor mapping and logistics. As part of this initiative, Esri has become a member of the In-Location Alliance. First formed in 2012, Esri joins more than 20 companies, including Nokia, QUALCOMM, and other high-profile technology leaders, that have come together to drive innovation and market adoption of high-accuracy indoor positioning and related services.

Esri has been active in indoor mapping for many years. Shelli

Stockton, facilities industry manager at Esri, reports that a growing number of organizations turn to Esri and its partners for in-depth facility mapping. "GIS allows users to quickly move from existing architecture drawings to indoor maps. We also offer a comprehensive facility management data model that maps indoor assets and provides the basis for a common operating picture in indoor asset tracking. Our users appreciate the ability to decide which of the data is going to be available publicly and which data should only be available to selected users."

New releases from Esri, including the real-time ArcGIS GeoEvent Processor for Server and ArcGIS Geotrigger Service, provide the ability to track mobile users inside and outside buildings. This new technology also allows sensors to be monitored for uses such as real-time readings of room temperatures in office buildings and viewing mobile assets, all without draining the battery life of the mobile device in use.

"This is an exciting, new frontier for GIS and location analytics, and we are able to help the community with standardized high-accuracy mapping and analysis tools," said Wolfgang Hall, Esri's industry manager for logistics and supply chain management.

For more information, visit esri.com/indoors. To download the app, visit the Android Store and search for "gisi esri."

Esri Joins Global In-Location Alliance

Esri Will Bring Its Experience to Define Standards for Indoor Mapping

Esri announced that it has joined the worldwide In-Location Alliance. Esri joins a growing number of companies that have come together to drive innovation and market adoption of high-accuracy indoor positioning and related services. Esri will help to define standards for indoor mapping and logistics across many industries including health care, higher education, finance, government, and retail.

"This is an exciting, new frontier for GIS and location analytics, and we are able to help the global indoor logistics community with standardized, high-accuracy mapping and analysis tools," said Wolfgang Hall, Esri's industry manager for logistics and supply chain management.

The Alliance began in August 2012 and provides a forum for collaboration for members to share their experiences, provide solutions based on a common architecture, and work together toward common interests.

Esri and its partners have provided technology for indoor mapping for many years, predominantly in facility mapping. The Esri ArcGIS platform of desktop, server, mobile, and cloud software and services gives users the ability to do the following:
- Move from existing architecture drawings to navigable indoor maps
- Create a common operating picture for indoor asset tracking using the facility management data model
- Manage data for both private and public use for safety and security

To learn more about Esri's initiative for indoor logistics, visit esri.com/indoors.
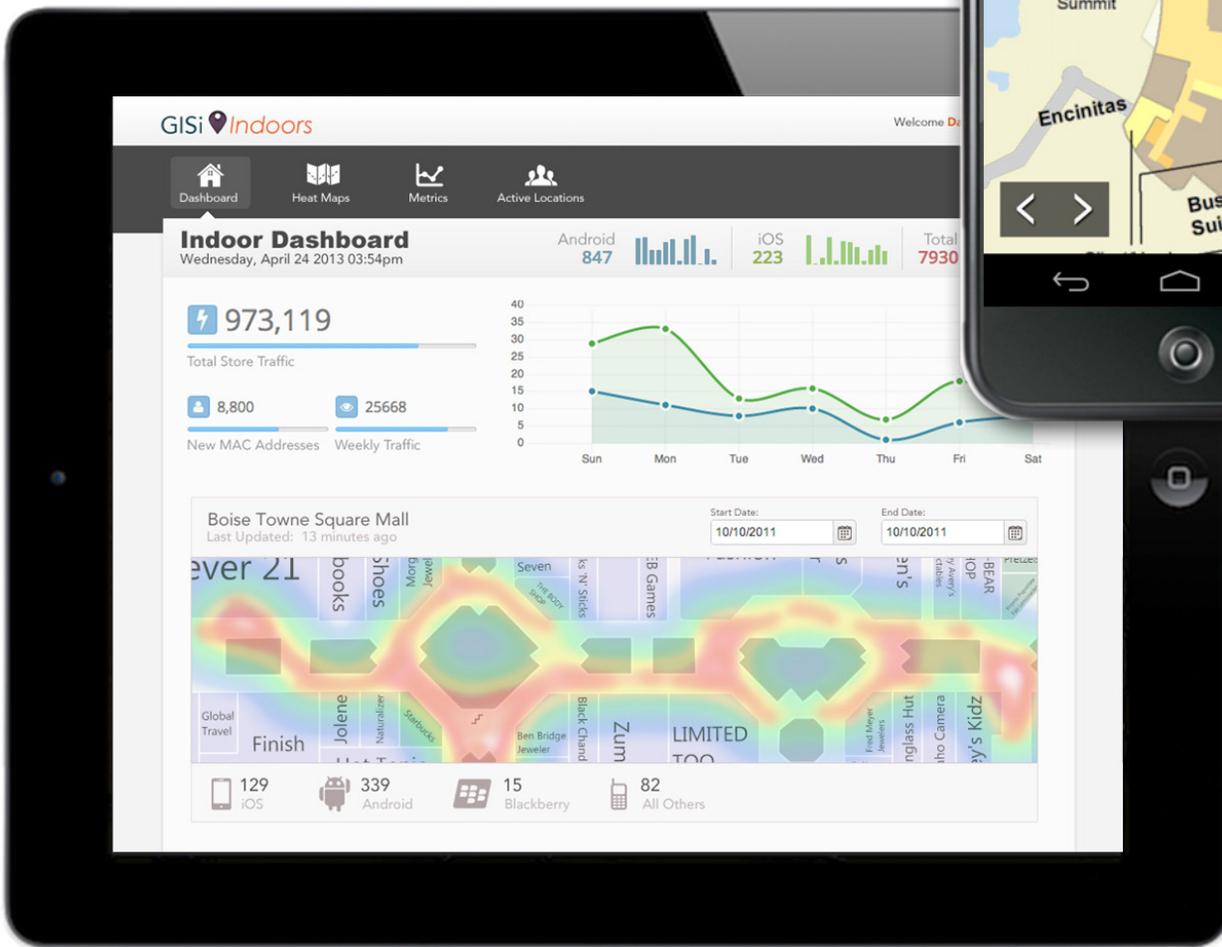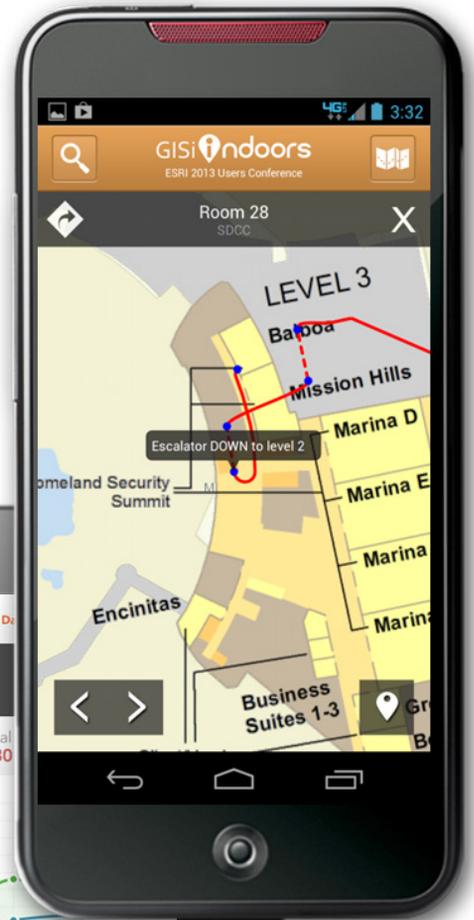
GISi Introduces New Business Unit: GISi Indoors

Did you know that, according to the EPA estimates, people spend about 90% of their time indoors? That's a lot of time, not only in their homes and offices, but also navigating grocery stores, shopping malls, hospitals, retail shops, you name it. People do a lot of navigation…often getting turned around, lost, not exactly sure where they are, or how far they need to travel by foot to their desired destination.

Online retailers see a similar dynamic with their on-line visitors navigating their websites. But they have a few tools at their disposal to help them understand their users, users' behavior, and help optimize for a better user experience. At the heart of a well designed and well optimized website is top-notch website analytics. Without the ability to track and study on-line behavior, traffic, trends, and patterns, these retailers would lack the insight needed to make important decisions. But what about the folks out there navigating on their feet and not on their laptops? What about their user experience? How do we learn more about them?

This is where indoor location-based technology comes into play…and it's quite exciting.

Before we launched our newest business unit, GISi Indoors, we knew that there was a definite need for organizations, especially brick-and-mortar retailers, to have insight into what's happening once people enter their buildings. We thought it would be fantastic if we could provide businesses with the kind of insight and technology needed to not only understand their visitors, but also provide services to them to make their experiences even better.

With GISi Indoors the process normally begins with the free assessment that's designed to help us understand the type of products, services, and technologies that may be required to meet a client's indoor technology needs. Next we conduct workshops, which are in person assessments. We provide digital and hard copy presentations of our findings with focused recommendations for implementation and success.

GISi Indoors is a very tailored approach. We work with clients to develop a focused plan and the backing of a diverse base of expertise and partnerships. So whether they need good indoors analytics, a custom-tailored app, prototype or enterprise indoor application, we're there for the long haul.

You can learn more about GISi Indoors by visiting www.gisiindoors.com. The GISi Indoors team also maintains an active presence on Twitter (@GISiIndoors) and Facebook www.facebook.com/GISIncIndoors.
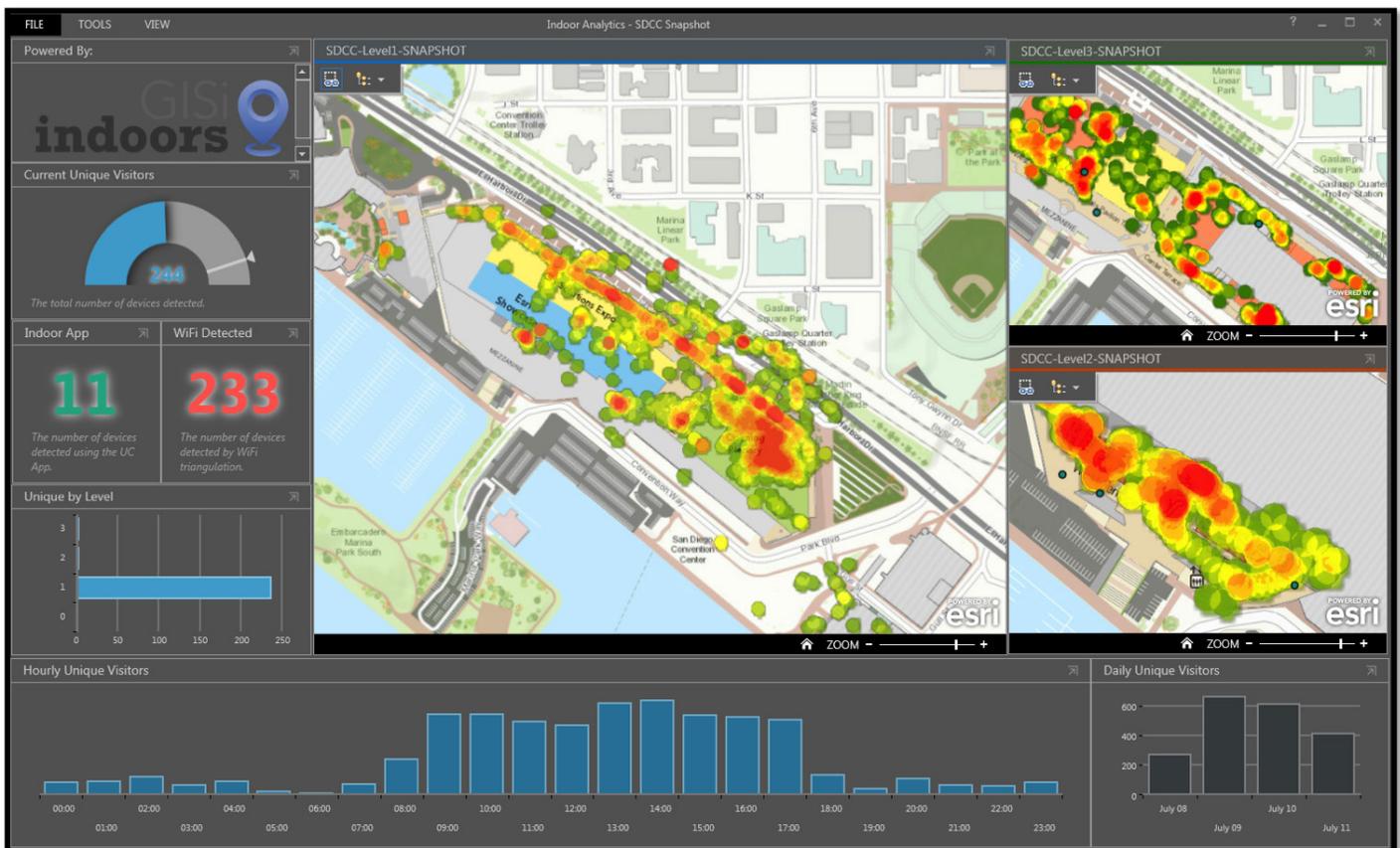
Population Changes Provide Opportunities

A Look at 2013 Population and Household Demographics for Business

Population and household types continue to change in the United States as some categories grow and diversify while others decline. These demographic changes offer opportunities for companies to create, expand, or version their products and services. Can business capitalize on these demographic changes?

Population Growth and Decline

The US population in 2013 is 314 million. Population in the South and West is growing nearly three times faster than in the Midwest and the Northeast. Reasons vary for the fastest-growing metro areas, such as The Villages, FL (+13.6 percent)—retirees and seniors; Jacksonville, NC (+7.6 percent)—military presence; Kennewick-Richland, WA (+6.5 percent); Austin-Round Rock, TX (+6.5 percent)—technology and education; and Myrtle Beach-Conway-North Myrtle Beach, NC/SC (+6.1 percent)—tourism. Populations in North Dakota and Montana are exploding, due in large part to work at the Bakken Oil Shale.

Conversely, the slowest-growing or declining areas include Flint, MI (-2.2 percent); Binghamton, NY (-1.1 percent); Detroit-Dearborn-Warren, MI (-1.0 percent); Mansfield, OH (-1.0 percent); and Niles-Benton Harbor, MI (-0.9 percent). Counties with the largest declines are Wayne County, MI (Detroit); Cuyahoga County, OH (Cleveland); and Genesee County, MI (Flint). These Rustbelt areas suffered from high unemployment when manufacturing and other heavy industry companies moved away or closed.

Increasing Population Diversity

Diversity continues to increase and change the makeup of the population. Esri's proprietary Diversity Index accurately summarizes racial and ethnic diversity in an area. This measure shows the likelihood that two people, chosen at random from the same area, belong to different races or ethnic groups. The index ranges from 0 (no diversity) to 100 (complete diversity). Esri's Diversity Index for the United States has risen from 60.6 in 2010 to 62 in 2013, with a forecast to 64.8 in five years.

At 82.1, Hawaii is the most diverse state in 2013; Maine has the lowest diversity at 12.5.

There are several reasons for the increase in population diversity. The Census Bureau noted that for the first time in nearly 100 years, deaths exceeded births among non-Hispanic whites, a process called natural decrease. Another factor may be that whites are also either delaying or eschewing parenthood due to economic constraints such as inadequate employment or student loan debt. Most births in the United States are now to Hispanic, black, and Asian mothers, helping to account for more dramatic changes in diversity. Based on the current growth rates by race and ethnicity, non-Hispanic whites will become the minority in approximately 30 years. This minority shift will occur more quickly in the younger population than in the total population.

Changing Household Types

The composition of America's 119 million households is also changing. Although husband-wife families remain the dominant household type, their share of all households continues to slip—from 52 percent in 2000 to 48 percent in 2010. From 2000 to 2010, the real increase in family households was in single-parent families, up by 22 percent, and multigenerational households, up by 30 percent. Husband-wife families increased by less than 4 percent in 10 years, and husband-wife families with children declined. Growing segments of households include nontraditional family types such as single person, single parent, multigenerational, and same-sex partners.

American Change: Population Diversity

DIVERSITY INDEX, 2013

- > 75.0
- 62.1 to 75.0
- 45.1 to 62.0
- 25.1 to 45.0
- 10.1 to 25.0
- < 10.0

ALASKA

0 — 500 Miles

HAWAII

0 — 250 Miles

0 — 250 — 500 Miles

Source: Esri 2013 Updated Demographics

Demographic Change: Population Growth

POPULATION GROWTH, 2010-2013

- > 2.01%
- 1.26% to 2.00%
- 0.57% to 1.25%
- 0.26% to 0.56%
- -0.14% to 0.25%
- < -0.15%

ALASKA

0   500 Miles

HAWAII

0   250 Miles

0   250   500 Miles

Source: Esri 2013 Updated Demographics

Opportunities for Business

These demographic changes present challenges—and opportunities—for business. For example, Hispanic and Asian families with large, multigenerational households may require dwellings with architectural features that can accommodate each generation. Others may have combined households due to job loss or caring for a senior relative who can no longer live alone. On the other hand, the need for smaller quarters or more apartments for one-person households provides additional opportunities for developers. Differences in household size provide opportunities for consumer product companies to market their products to more diverse groups of consumers. For example, packaging food products into single servings or super sizes doubles market exposure and answers the needs of various household types. Catering to different ethnic and cultural needs can also add market share by versioning and marketing these same products to different racial and ethnic populations.

About 2013/2018 Updated Demographics

Esri's 2013/2018 Updated Demographics database includes a full roster of current-year estimates and five-year projections for categories such as population, income, race/ethnicity,

home value, net worth, disposable income, and more. Delivered in a variety of geographies and formats, the 2013/2018 Updated Demographics data is available as a map service from ArcGIS Online and in products such as Esri Business Analyst Online in ArcGIS Online, Esri Business Analyst for Desktop, Esri Business Analyst for Server, and Esri Community Analyst. The data is also available by table or database for seamless integration into GIS software.

For more information about Esri's 2013/2018 Updated Demographics, visit esri.com/demographicdata.

Sharing Stories and Successes at the Summit

More Than 500 Attendees Talked Technology and Strategy in San Diego

Sharing stories was the name of the game at the Esri Business Summit held July 7–9, 2013. Rob Reiner with Darden kicked off the morning session of plenary talks with sage advice for the crowd of more than 500 attendees: "It's not important that you invested in certain tools, it's what you do to differentiate yourself that matters. Science has the upper hand now and will for the future. But don't forget to balance human work and technology—no one is successful relying 100 percent on either one."

The duality theme was a strong part of the summit. Emcee Simon Thompson highlighted the opportunities and benefits of bringing spatial data, location analytics, and business systems closer together. Speakers from Cirque du Soleil and Little Caesars emphasized the need to innovate and how rational creativity involves both the art and science, left brain-right brain approach to geographic analysis.

This balance was reflected in another plenary story by Gregg Katz from The Shopping Center Group. Katz is responsible for creating and integrating the technology strategy for his company, which operates 22 offices from New York to Florida, providing a full assortment of advisory services to tenants, landlords, developers, investors, and financial institutions. Katz stressed that what separates companies from each other isn't necessarily the technology used but, instead, who is using it. He then told a tale of selecting a new business site based on criteria from a client. One of the proposed sites—and the one that the client, which was not familiar with the area, chose—happened to be located right in the middle of a cemetery. "Sometimes the data doesn't tell the whole story. It's your user, in this case our broker, who knew the hyperlocal information that ultimately led to the right decision," said Katz. "That's what differentiates organizations at the end of the day."

Looping in Location Analytics

Learning how to apply new tools correctly is important to business, and summit presenters delivered important guidance to the crowd, in particular on how to successfully implement location analytics. Mark Smith, the CEO and chief research officer for Ventana Research, opened the location analytics breakout session, one of four afternoon sessions offered. Smith is an expert in enterprise software and business technology innovations including business analytics, big data, cloud computing, business collaboration, mobile technology, and social media.

During a panel discussion moderated by Chris Ovens, Esri's director of location analytics, location analytics champions, including Shawn Hanna from Petco and Patrick O'Hagan from Starbucks, addressed useful strategies that have worked

↑ More than 500 attendees soaked up presentations focused on retail, risk management, supply chain, and location analytics.

for them to bring location analytics to the forefront in their organizations.

"Linking business intelligence to location technology is the best thing we have done as an organization," said O'Hagan. Hanna agreed that this was a great goal for organizations to strive for but that his organization had not yet completely integrated with business intelligence, and this was reflected by many of the attendees through an innovative interactive poll. When asked to weigh in on a smart device to a poll question—"How integrated is your GIS in your enterprise systems?"—only five attendees chose extremely. A majority of attendees, 27, chose "somewhat," and 19 attendees chose "not at all." The poll is still open for feedback.

Save the Date

Next year, the summit will expand to four days and begin on Saturday, July 12, 2014. Come and share the benefits of location analytics and help build a community at the Esri Business Summit in San Diego, California, July 12–15, 2014. In the meantime, stay connected and contribute or visit social sites including LinkedIn and Facebook and by following @EsriBizTeam on Twitter.

To learn more about the summit visit esri.com/bizsummit.

Breathe Life into Big Data

ArcGIS Tools and Hadoop Analyze Large Data Stores

With data influx reaching exabyte levels, big data can easily become unmanageable and useless without the proper tools to analyze it fast. The strength of your data stewardship therefore depends on how much command you have over big data.

To bypass the capacity limitations of working with billions of records at a time, Esri created GIS Tools for Hadoop, a toolkit for executing spatial analysis in the Hadoop environment and looping it back into ArcGIS.

Geoenable Big Data in Hadoop

Many data stewards and developers have come to rely on Hadoop's open source framework to handle large data stores. Because Hadoop lacks the native functionality to exploit the location component in big data, GIS Tools for Hadoop was designed to extend the popular data management platform with utilities for spatially operating on billions of records at a time.

Although most data includes spatial parameters, large volumes typically require tedious, sequential processing to do any meaningful work on them. For non-GIS users of Hadoop, the toolkit lets data stewards study big data as a whole unit in Hadoop format. Results from those analyses reveal patterns and relationships that traditionally could only be derived from smaller, more manageable datasets. For ArcGIS users, GIS Tools for Hadoop bypasses traditional geoprocessing workflows by enabling the execution of spatial queries on Hadoop data from ArcGIS.

This new ability gives developers and data analysts much-needed control—essentially transforming big data from being something to be dealt with later into an immediately useful resource.

Bring Big Data into ArcGIS

After conducting spatial analytics on your Hadoop data, the toolkit provides a way of importing big data into the ArcGIS environment. Results from spatial querying and analytics in Hadoop can be moved to ArcGIS for further processing and visualization. Those geoprocessed datasets can then be saved to ArcGIS or exported back into the Hadoop system, thus creating a looping workflow between the ArcGIS platform and the big data environment.

Forget about archiving your large data stores for later use. Command your big data now with GIS Tools for Hadoop. The free, open source toolkit lets you do the following:
- Run filter and aggregate operations on billions of spatial data records
- Define new areas represented as polygons and run point-in-polygon analyses inside Hadoop
- Integrate big data maps in reports or publish them as big data web map applications

GitHub Project

Esri recognizes big data as being the next big frontier of IT and requiring many perspectives to help manage it. As such, Esri hosts GIS Tools for Hadoop for free on the popular open source project site GitHub. Esri encourages developers to download the toolkit, report issues, and actively contribute to improving the tools through the GitHub system.

To download GIS Tools for Hadoop, visit esri.github.io/gis-tools-for-hadoop.
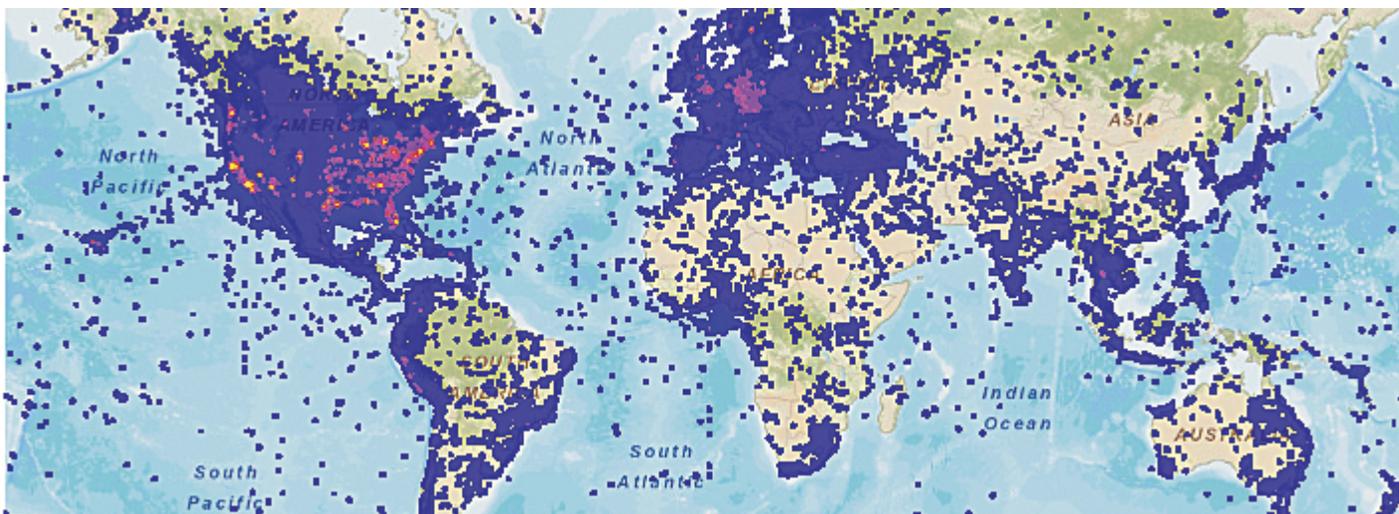
↑ GIS Tools for Hadoop unlocks spatial patterns and relationships concealed within big data.

esri®

380 New York Street
Redlands, California 92373-8100 USA

137477 50.1M/11ml

Put the *Where* in Your Enterprise

Deliver Better Outcomes with Esri Location Analytics

esri.com/locationanalytics

esri®