Esri News
for Business
Winter 2012/2013

Cloud GIS to the Rescue

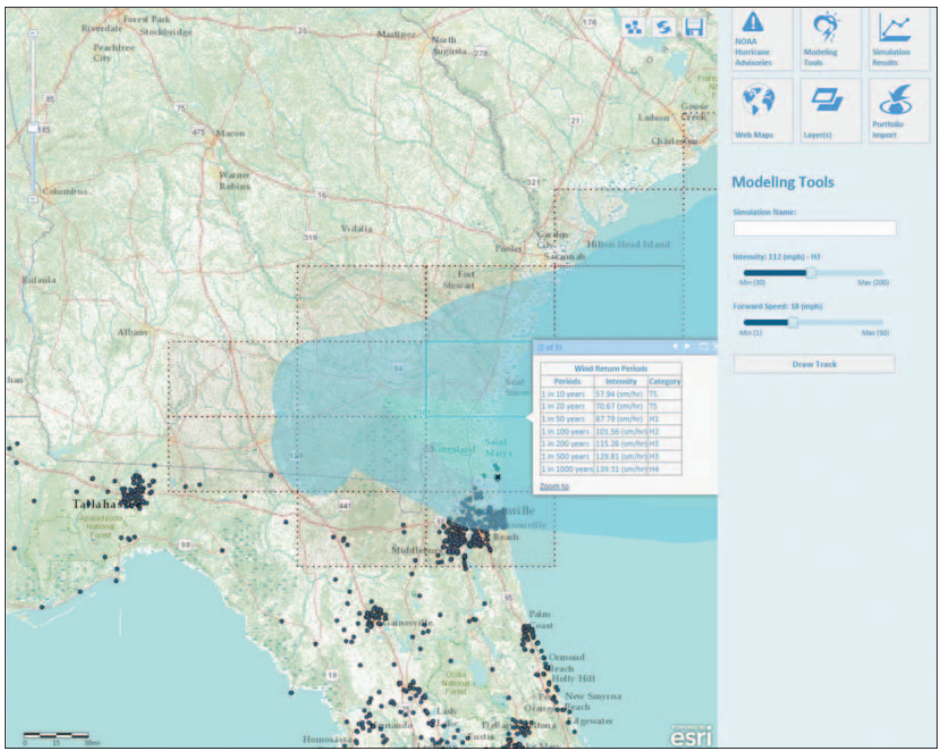
Cloud-based GIS from Esri helped the staff at Wall Street Network (WSN) keep producing online maps even after flooding from superstorm Sandy cut the power at the company's offices at 110 Wall Street in New York City.

Coincidentally—and fortunately—WSN, a technology solution provider based in New York City's Financial District, had recently licensed ArcGIS and ArcGIS Online. The company uses the software to create solutions that help its clients—including risk managers in organizations such as insurance and financial service companies—analyze and effectively present vast amounts of data to better understand the risks associated with a catastrophe such as Sandy.

Kristina Mazelis, chief operating officer and chief financial officer at WSN, learned about flooding near the WSN offices from Sandy in the early evening of October 29, 2012. She received a notification from her data center monitoring equipment, indicating that the offices' backup power supplies had been activated.

"The loss of power we experienced, along with flooding, meant that the company would not be able to use [its] offices and had to instead rely on people to work from home," Mazelis said. "We also had to support dozens of small and medium-sized business clients in the same situation. They needed us to deploy their business continuity and disaster response plans—making sure they, too, could continue to do business even in the face of such a devastating event."

WSN's engineers located in New York and Michigan were already equipped with all the tools they needed to remotely monitor and manage their systems as well as provide live end-user support over the Internet. ArcGIS Online, a cloud-based platform, was one of those tools.



↑ Modeling and visualizing high winds can give risk managers a better idea of what may happen during and after a storm.

Failsafe Business System

WSN uses ArcGIS Online to create interactive maps and applications that can be quickly incorporated in risk managers' workflows so that content created by one user can easily be shared with others. WSN's clients can view and work with maps and perform analysis on smartphones, tablets, and notebooks, as well as the traditional office desktop. "Because Esri software is easy to use and incorporates all the data we need, we can build better products quickly and focus on solving business problems and delivering users new perspectives," Mazelis said. "We can remove the complexities of working with spatial data and provide our clients with the extensive discovery, collaboration, and analysis tools they need in their businesses."

When Sandy hit on October 29, WSN engineers never missed a beat. They continued to create customized solutions for their clients using ArcGIS Online and other cloud-based software. "Because our development is in the cloud, our developers' efforts have not been impacted," Mazelis said. "If we hadn't been

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Cloud GIS to the Rescue

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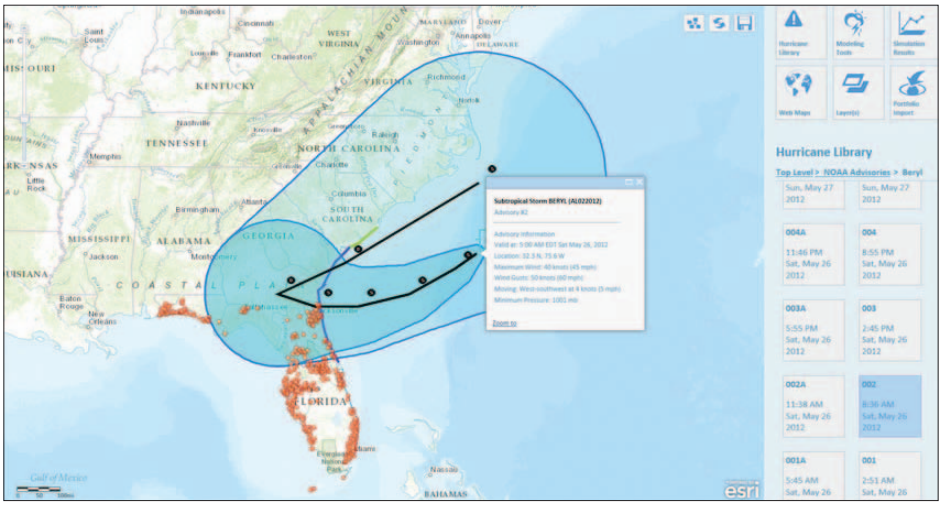
equipped with Internet and cloud capabilities, we would have been dead in the water—no pun intended."

Minimizing Risk before a Catastrophe Happens

In what may now seem like a bit of foreshadowing, WSN decided months before the storm to create its first ArcGIS Online application for the insurance industry. "We chose this solution because we wanted to provide customers with tools to easily view and understand their policies by location to see how they are affected by perils just like superstorm Sandy," Mazelis said.

The ability for WSN to host this solution means its clients don't have to host it themselves. "This is an important point," said Mazelis. "The small carriers that exist in the US provide quite a bit of insurance in the marketplace but lack the budget necessary to run sophisticated catastrophe models. We've lowered the costs for some by hosting the data and platform. We are able to put together these apps, so now carriers of any size can subscribe to the solution without a huge capital expense."



↑ You can view real-time information via ArcGIS Online such as this advisory about Tropical Storm Beryl, which made landfall in Jacksonville Beach, Florida, in May 2012.

After a disaster like Sandy, insurance companies try to quickly create models that calculate its impact. With ArcGIS Online, WSN staff can help these companies understand their true risk instead of playing a guessing game.

Geography traditionally plays a part in this process. Risk managers use a property's location to judge how far away it is from a hazard such as a storm surge zone. With the help of ArcGIS Online, WSN created a solution for risk managers to interactively view and discover updated spatial hazard inventory data to analyze information in real time. Depending on the catastrophe model created—a storm surge, for example—a hazard can be displayed on a map. The map can also include the locations of a client's assets, so calculations can be made to determine the company's exposure to risk before, during, and after a storm.

Cloud Helps Business Continuity

WSN's solution is changing the insurance industry from having to react in an ad hoc manner—for example, after a storm has occurred, asking what the damage was—to being constantly proactive. Hazards such as storms, political situations, and similar events can be monitored in real time.

Ensuring that the monitoring systems in place are available—even when the provider is hit—is invaluable. As of this article's publication, WSN's telephones had not yet been rerouted due to the storm surge, and the company is not expecting to return to business as usual in its offices for another six months. Saltwater damage to building wiring—including electrical, data, security, and elevator systems—means that all wiring must be completely reengineered and replaced. This is the fate for thousands of businesses in New York City. In many places, fuel, oil, and wastewater inundation has made buildings uninhabitable. The City of New York is working with storm-impacted businesses by coordinating programs that provide temporary workspaces and free services and supplies. Businesses in need of these services can view a complete list of locations.

"Lessons learned from Sandy were the unexpected benefits of cloud and mobile technology for business continuity," Mazelis said. "We benefited from implementing these technologies to deploy, manage, and implement our client solutions and understand firsthand the importance of implementing these technologies in our business continuity and disaster response solutions."

> "Because Esri software is easy to use and incorporates all the data we need, we can build better products quickly and focus on solving business problems and delivering users new perspectives."
>
> Kristina Mazelis, Chief Operating Officer and Chief Financial Officer at WSN

For more information on how ArcGIS Online benefits business, visit esri.com/business.

Born Again

The Antidote for Zombie Stores

"I think about the world I was in just 10 years ago—me having to build applications and run analyses for people—and now the barriers have been lifted. Today, I can focus on the content, the business use, and not worry about the infrastructure."

Matt Felton, GIS Director at
MacKenzie Commercial Real Estate Services

"He's already dead, he just doesn't know it yet." That phrase, popularized by horror movies, describes the living dead who naively roam the earth, not realizing that their lives have passed. This phrase has also been applied to retail outlets—stores, restaurants, and service venues—with declining businesses and dwindling operating capital that are limping along with marginal profits.

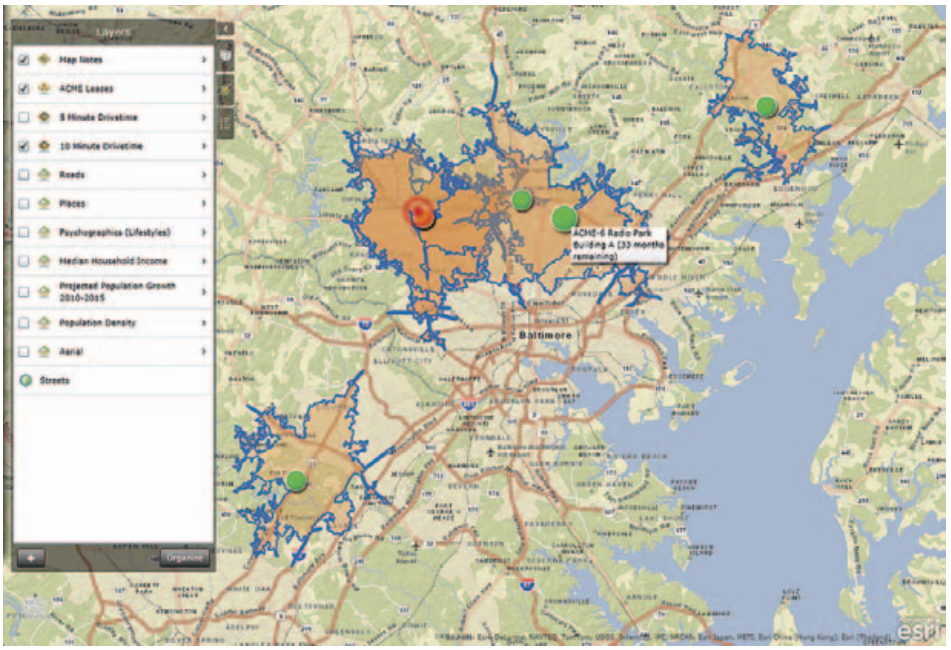
Although these businesses have outlived their usefulness in their current locations, their owners cling to the hope that they will be able to keep the lights on for just one more lease cycle.

"This recession has created zombie stores, stores that appear to be alive but that are really dead," said Ted Hurlbut, a consultant at the retail consulting firm Hurlbut Associates. "In good times, in every chain there are below-average stores that only generate 70 percent or 80 percent of the average store but are still four-wall profitable. In this downturn, with sales in some of these weaker stores off by as much as 10 percent to 20 percent, these stores are now four-wall cash drains."

Finding the Best Use

GIS can help retailers fight off the zombie virus. In real estate, it all comes down to one simple question, What is the best use for this land or this building? according to David Beitz, president and cofounder, Beitz and Daigh, which is a developer, owner, and operator of community-oriented shopping places in primary markets along the East Coast of the United States.

↓ Often retail stores have not adapted to changes in the composition of the market and are no longer suited to their current location.



← Customers can see their entire portfolio, not just one lease at a time, allowing them to be proactive in their management strategies. This translates into healthier retail stores.

"If a retail site is barely making it, GIS can be used proactively to spot opportunities that could increase the value of the real estate," Beitz said. "Maybe that tired chain store location would make a great bank branch. Or maybe it could be combined with several other parcels to build an apartment complex. GIS gives us the tools to research locations and find opportunities in order to make smarter real estate decisions."

Matt Felton, GIS director at MacKenzie Commercial Real Estate Services, agrees: "With GIS, we can help owners of vacant stores with [information on] current, up-to-date market reach, customer profiles, and market potential for zombie sites. Most of these zombie stores are in markets that have dramatically changed quicker than the owners can adapt. Often, these types of stores have outlived their nature in a given market and should instead turn into something new, or they have been completely outpositioned so that no other retailers will want to show interest in the site."

Connecting People to Real Places

As a shopping center company, EDENS uses GIS in the leasing process to first identify potential retailers for a site, then uses the technology to communicate to the retailer why EDENS leasing and development staff think a site is good for it. "Studies show that the more time customers spend at a shopping center, the more money they spend," said Beitz. "Great shopping places provide a variety of activities for people in the community to connect through shopping, services, entertainment, and restaurants."

For example, when EDENS has a retail space or outparcel [a small lot at the outer edge of a shopping center, reserved for later sale] that—if developed as a restaurant—would complement one of their shopping centers, staff look at a number of questions:

- What other restaurants are nearby?
- Who is not in this market but is successfully operating in other similar markets?
- How do the demographics of their target site line up with the potential restaurant's other locations?
- Is this a breakfast/lunch crowd or lunch/dinner crowd?
- What is the daytime (employment) population?
- Where are the schools nearby that help determine commuting patterns?

GIS helps EDENS to understand and communicate the answers to these questions, determining if additional retail square footage might be profitable for landlord and tenant. In addition to maps and demographics, EDENS has also been using Esri Tapestry Segmentation data to better understand its markets. Tapestry classifies US residential neighborhoods into 65 unique market segments based on socioeconomic and demographic characteristics. By understanding the lifestyles, life stages, likes, and wants of people, it is easier to understand what may interest people living in specific neighborhoods.

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"If a retail site is barely making it, GIS can be used proactively to spot opportunities that could increase the value of the real estate. Maybe that tired chain store location would make a great bank branch. Or maybe it could be combined with several other parcels to build an apartment complex. GIS gives us the tools to research locations and find opportunities in order to make smarter real estate decisions."

David Beitz, President and Cofounder, Beitz and Daigh

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"Above and beyond demographics, the Tapestry data profiles the households and gives us a deeper view of the consumers in the market," said Beitz. "I think the key here is to add retail space only if it accomplishes the larger goal of creating a dynamic shopping place where people want to spend time. If you only look at retail square footage per capita, then you will see that lots of areas are overretailed. The problem is that often the retailer has not adapted to the changing composition of the market. Tapestry gives us the consumer understanding of the business equation to better capitalize on opportunities in the market."

Secure Access to Information Anywhere

MacKenzie brokers and retail partners can present retail centers in the most positive light using an online dashboard created by Felton. MapDash, built on Esri's cloud-based solution ArcGIS Online for Organizations provides designated staff with secure access to information from anywhere.

When an anchor store leaves a mall, customer counts and sales often decline. This triggers the material adverse change clause in most leases and affects the rates other tenants pay. To counter this situation, Felton and his team use MapDash to define the current customer dynamics in trade areas and quantify the market opportunity, depth of demand, and spending capability of consumers in the area. With this information, MacKenzie staff can match opportunities with tenant prospects.

"I think about the world I was in just 10 years ago—me having to build applications and run analyses for people—and now the barriers have been lifted," said Felton. "Today, I can focus on the content, the business use, and not worry about the infrastructure."

From Reactive to Proactive

MapDash helps the brokers communicate lease information to their customers. The dashboard helps organizations that hold between 10 and 40 leases in a region access all related information, identify where properties are located, and know when leases on those properties should be renewed.

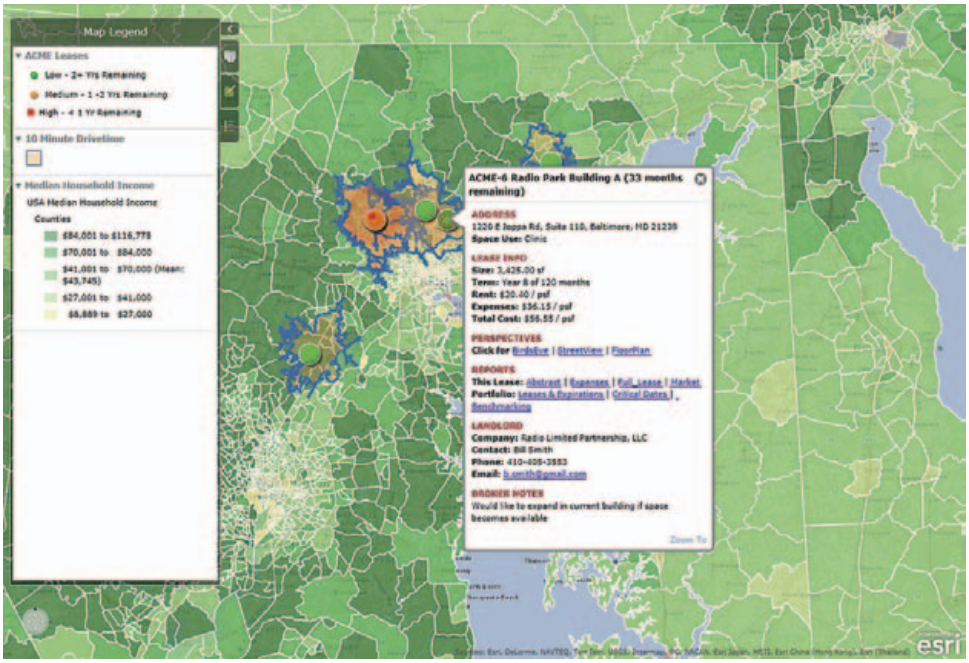
Red flashing dots on the dashboard map signify stores that require attention relating to a time-sensitive issue such as a lease option. Clicking these dots provides both street and bird's-eye views of the retail location, along with reports that summarize the pertinent information about the lease such as length of lease, price per square foot, and length of time at the site. This gives decision makers a better understanding of the terms of all leases, turning the often reactive lease renewal process into a proactive strategy for optimizing the company's portfolio.

"MapDash allows our customers to see their entire portfolio, not just one lease at a time," said Felton. "Accessing information in this manner is better and faster and keeps our clients more informed. This gives them more leverage in the process, and this translates into healthier retail stores."

Opportunity in a Sea of Change

Today's retailers have a tremendous opportunity to leverage their retail locations to gain significant competitive advantages. GIS technology and data help retailers gain a comprehensive understanding of daily store operations and the customer. These retailers can more quickly identify key trends, make decisions, and respond to changing consumer behavior. This is a key competitive advantage. Being agile and responsive is the key to maintaining a viable and growing business in a dramatically evolving economic landscape.

For more information on how GIS can help retailers, visit esri.com/retail.



→ MapDash helps organizations that hold between 10 and 40 leases in a region access all related information, identify property location, and know when leases on those properties should be renewed.

Miele Turns to Esri to Drive Growth

Location Analytics Propels Orange County, California, Dealer to 70 Percent Increase

Miele, Inc., a premium provider of domestic appliances and commercial machines, has streamlined its distribution network in the United States using Esri technology. Esri's software and data are used to better understand which markets are best for the company's hiqh-quality products. By focusing on specific segments of the marketplace, Miele can pinpoint customers and help its dealers be more successful.

"GIS has been an important tool to help us navigate the American economy in the last few years," said Matt Kueny, senior business analyst in sales at Miele. "Just because someone might have the income to spend on one of our products doesn't necessarily mean they are a realistic target for our brand based on other lifestyle variables. Using Esri technology, we have been able to better analyze patterns and share this information with our dealer network so we can get the needed item to the customer."

Using the ArcGIS platform, Miele was able to better gauge the health of its dealer network and ensure that products were available in the most appropriate market segments. Esri Business Analyst Online helps Miele communicate key marketing activities to its dealers and work in a collaborative environment. By being able to visualize and analyze sales information and business data through maps, one Orange County, California, Miele dealer achieved a 70 percent growth in sales.

"Miele has done an astounding job of responding to a changing and highly competitive marketplace by applying technology and expertise in an innovative manner," said Simon Thompson, director, commercial solutions, at Esri. "Miele really is inspirational in that it has helped its dealers grow their businesses in an environment where many businesses are failing."

Miele continues to adapt to its customers' evolving retail sophistication and help its dealers keep up their revenue by applying location analysis to online shopping. "By tracking search engine hits in our gap markets, we are able to geotarget the nearest dealer to that Internet shopper," said Kueny. "We are making the shopping experience more convenient by helping the customer find the nearest product. It's all about customer service."

esri.com/business

A&P Enhances Real Estate Strategy with Esri GIS Software

Solution Will Provide Grocer with Localized Shopping Trends

Great Atlantic and Pacific Tea Company, Inc. (A&P), has licensed Esri GIS technology and data to provide localized shopping trends data that supports the company's commitment to being the number one food and drug store in the neighborhoods it serves. Adopting Esri's solutions for retail real estate and market planning will help the company maintain and grow its market presence across the Northeast.

"Partnering with Esri allows us to enhance our real estate strategy in the neighborhoods that we currently serve by enabling us to meet the specific needs of our customers," said Nrup Krishnamurthy, A&P chief information officer. "In addition, this technology will serve as an essential business tool to help us make well-informed decisions about where and how we go to market in the future."

Esri's powerful location analytics provide A&P staff with valuable data on store locations, including key demographics and shopping trends in local communities. By analyzing geodemographic data, part of the Esri Business Analyst solution, A&P can continue to grow and develop its stores.

"A&P will ensure its products and store positioning meet the needs of its customers with the adoption of location analytics," said Simon Thompson, director, commercial solutions, at Esri. "We look forward to working to assist A&P in achieving its vision."

esri.com/retail

Location Intelligence Is More Than a Map

By Wayne Eckerson, President, BI Leadership Forum, and Director of Research, TechTarget

Without access to a GIS, analytically driven organizations miss valuable insights.

For most business intelligence (BI) professionals, maps are becoming an increasingly common way to view data in a dashboard or report. However, most BI professionals have yet to be exposed to the full power of location intelligence, and that's a shame. But I'm hoping to change that.

In July, I immersed myself in the world of location intelligence at the Esri International User Conference in San Diego, California. I've been in the BI field for more than 20 years, so attending my first Esri conference was an eye-opener. Not only are the exhibits full of fascinating geographic displays, more than 15,000 people attended the event. That puts any BI event to shame.

For my BI brethren, location intelligence is the newest moniker for something that used to be called spatial analytics, geographic information systems (GIS), or just mapping software. Location intelligence creates maps that enable users to view the relationship of objects in space and perform a variety of spatial calculations, such as, How long will it take to drive from Detroit to Cleveland? or What percentage of high-income customers are located within a 15-minute drive of this store? or What's my risk exposure to a hurricane that plows through Dade County, Florida?

Parallel Worlds

Like business intelligence, location intelligence supports analysis and decision making. But for the past 20 years, these two data-centric disciplines have forged independent but parallel paths. Only now are they beginning to converge.

After my presentation at the conference, one attendee asked, "Why hasn't location intelligence taken off in the business intelligence community?" My first response was that a majority of BI shops have been consumed trying to get adoption for basic reporting and analysis applications and only now are ready to incorporate new capabilities such as location intelligence, predictive analytics, and unstructured data.

But later I realized that the BI community has already embraced location intelligence, at least the mapping part of it. During the past 10 years, most BI professionals have spent significant time learning how to display the shape and content of data in visual form, using charts and graphics, including maps. Meanwhile, BI vendors have invested heavily in beefing up the visualization capabilities of their tools and adding new charting components, including maps. To BI professionals, maps are now an integral charting component of any BI portfolio.

The Intelligence in GIS

But location intelligence is more than just a map with dots on it. Location intelligence is a full-fledged analytical system. These so-called geographic information systems specialize in storing and manipulating spatial data, which consists of points, lines, and polygons plotted as coordinates in space.

Each spatial object can be imbued with various properties or rules that govern its behavior. For example, a road (i.e., a line) has a surface condition and a speed limit, and the only points that can be located in the middle of the road are traffic lights. Spatial engines can then run complex calculations against coordinate data to determine relationships among spatial objects, such as the driving distance between two cities or the shadows that a proposed skyscraper would cast on surrounding buildings or RFID tagged products that move beyond a specific area (e.g., geofencing). In essence, a GIS is an object-oriented analytical system that models things in space.

So without access to a GIS, analytically driven organizations miss valuable insights. Until recently, most spatial analysis was conducted by a handful of GIS specialists working in the bowels of a company who imported business data into GIS to create spatial models. But now, spatial insights can be delivered to all users via GIS-enabled applications, including BI, ERP, and CRM. And GIS providers, like Esri, can publish GIS applications to the cloud, allowing users to access interactive maps via web browsers.

Integration with Business Intelligence

In the BI world, the first step toward converging location and business intelligence is plotting business metrics on a map. Like other types of visualization, maps bring data to life and make it easier for business users to identify the significant trends and issues contained in most reports and dashboards. But location intelligence goes beyond basic geographic displays; it delivers interactive spatial models that correlate business data on a three-dimensional surface.

For example, BI users might use interactive maps to sift through hundreds of variables to optimize the siting of new stores, dealerships, branch offices, factories, drill heads, or pipelines. Or they could use maps to view how the buying habits and demographics of customers located around stores have changed over time. Facilities managers could use interactive maps to plot the optimal evacuation routes from any point in an office building or estimate the physical and financial impact of a bomb that explodes outside their building at various distances. Insurance agents could use GIS-enabled BI tools to simulate what they would have to pay policyholders whose homes are damaged by a hurricane, based on the wind speed and path of the oncoming storm.

Finally, the explosion of mobile devices, such as smartphones and tablet computers, places a premium on integration of business and location intelligence. For example, mobile dashboards will notify plant managers about the status of poorly performing machines as they walk a factory floor or alert store managers about stock-outs as they move through the aisles. Mobile dashboards will deliver to executives and salespeople a 360-degree view of a customer as they approach the customer's site. The use cases are endless, and organizations will discover new ones once they GIS enable their BI applications.

Integration Options

Integrating BI and GIS applications is not as hard as it once was. GIS vendors now offer rich REST-based web services APIs to integrate GIS with other applications. And some, like Esri, now offer cloud-based GIS services so you don't even need to own a GIS to benefit from GIS functionality.

As a result, BI vendors are integrating greater GIS functionality into their applications. A decade ago, BI vendors delivered static, graphic maps that customers could overlay with dots. Many now embed GIS shapefiles that enable BI users to plot business data on standard baseline maps and support basic GIS functionality such as zoom, hover, drill, and synchronized filtering. And a few interface directly with GIS, allowing BI report authors to easily add custom maps and more sophisticated GIS functionality to reports and dashboards without having to write code.

Summary

As BI shops seek to infuse reports and dashboards with better visualization and more analytics, it's imperative that they explore the rich opportunities afforded by location intelligence. GIS integration is a simple way to add more robust analytical capabilities to run-of-the-mill reports and dashboards.

Esri Maps for Office Is Now Available

As part of ArcGIS Online, Esri Maps for Office enables the use of familiar Microsoft Office tools to quickly and easily map and share data.

Users can create maps directly in Excel and add them to PowerPoint presentations and other documents. They can publish and share maps on ArcGIS Online that others in an organization can then use to visualize and interact with their data. Maps published on ArcGIS Online can also be viewed or embedded in web pages or desktop and mobile applications.

All that's needed to get started using Esri Maps for Office is an ArcGIS Online paid or trial subscription, along with Microsoft Office 2010 or later.

Once a map has been made, the results can be immediately shared with others by adding them to PowerPoint presentations or by one-click publishing to ArcGIS Online. Both interactive and static maps can be shared. Users have full control over the map symbols and map styling so that they can tell their stories the way they want.

Part of ArcGIS Online

With the ArcGIS Online collaboration capabilities and valuable content, Esri Maps for Office enables the use of familiar Microsoft Office tools to quickly and easily map and share data inside and outside an organization.

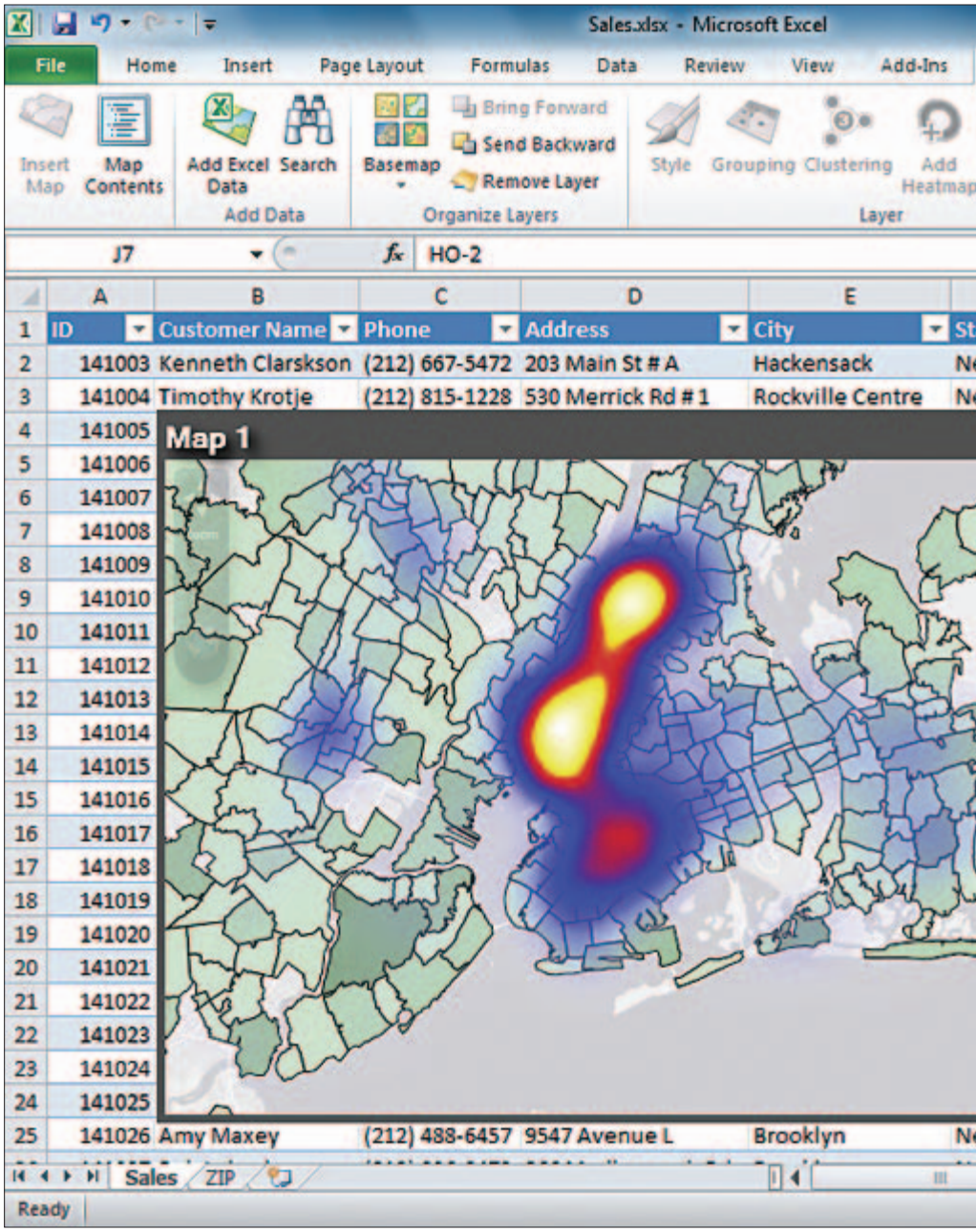
Make Maps Directly in Excel

Users can create interactive maps of their Excel data—not only maps of locations (e.g., customer addresses, sites by map coordinates, facilities, businesses, opportunities, distribution points) but also maps of geographic data, such as color-coded maps of sales by ZIP code or enrollment by state.

Through tight integration of Esri Maps for Office with ArcGIS Online, users can access a variety of background maps, including street, satellite, and topographic maps. They can also reuse and incorporate (mash up) any map to which their organization provides access, as well as tens of thousands of maps published by Esri's worldwide user community.

Impact Your Audience

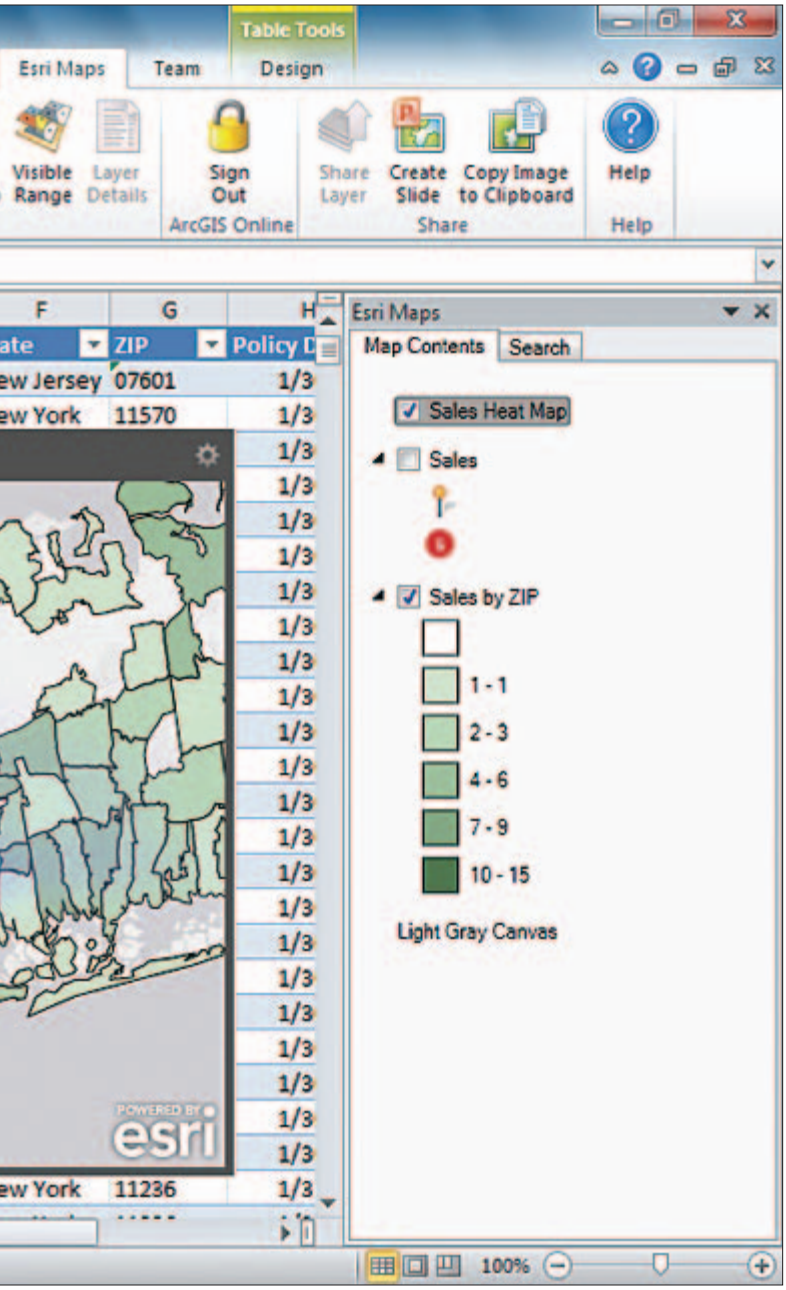
Maps are powerful communication tools that help users get their points across quickly and efficiently. Maps can also help them look at their data in different ways to gain additional insight.



→ Make interactive maps inside Microsoft Excel and PowerPoint with Esri Maps for Office.

Esri Maps for Office is made available as a component of ArcGIS Online. It's delivered as an add-in to Microsoft Office, and current ArcGIS Online subscribers can get it as part of their subscription.

For more information, visit esri.com/software/esri-maps-for-office.



Business Sense

Simon Thompson
Director, Commercial Solutions, Esri

Corralling the Connected Consumer

If you look at the information that companies want to process to understand their businesses better, it is almost 100 percent location driven. All those shopping transactions and searches, all those social media interactions and Tweets—they happen somewhere. Using all this information, companies are finding out where their customers live, what they want, and how to find them and serve them better.

Consider that three years ago, most credit card companies had limited interest in location because they knew they could just blast out marketing materials, and over time, people would come in and get their card. That isn't the case now—the economic environment has changed, and so have consumers and their expectations.

Today, these same businesses are finding they need to market differently and seek out new consumers, but they can no longer afford to carpet-bomb an entire metropolitan statistical area (MSA) like they might have done before. Instead, these organizations can be smarter, more efficient, and more precise by picking individual geographic areas, like a city block or neighborhood. Businesses can even get down to the address level and seek out particular types of customers at specific points of interaction—like leaving coupons for tutoring in a frozen yogurt shop or gym membership information at a health food store.

Businesses are really looking to attract the attention of the "connected consumer" by developing applications that work across every platform and capture insight from all the information that comes linked to any transaction.

Connected consumers are particular. They require enhanced customer service, which means business owners must get closer to the customer and deliver to them something they really want. This is driving new interest in location-enabled applications.

Location technology and spatial analysis are making these types of targeted marketing much easier and very accurate. Using location analytics, business users can seek out the customers they connect with, find more like them, and engage with them. Whether online, in the mall, or down the street, customers can be attracted to your business—just meet them at their level.

Demographic State of the United States in 2012

Companies Still Struggle to Attract Consumers

Because the economic recovery is proceeding much more slowly than expected, companies are still trying to attract consumers who are reluctant to spend as they continue to pay down debt. Although some positive signs, such as modest increases in consumer spending and slightly higher sales of existing homes, are noted in a few areas, effects of the recession are still impacting overall economic recovery. The US population also continues to change in terms of more diversity and different family types and households.

Population Diversity and Change

In 2012, the US population was 313 million. Growing racial/ethnic diversity continued to produce striking changes in the population. This is evident from use of Esri's proprietary Diversity Index, which 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 rose from 60.6 in 2010 to 61.4 in 2012, with a forecast to 63.8 in five years.

The composition of America's 118 million households is also becoming more diverse. 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.

All family households increased by 8 percent from 2000 to 2010; nonfamily households, by 16 percent. The fastest-growing nonfamily households, however, are unmarried partners—opposite sex partners by 40 percent and same-sex partners by 52 percent from 2000 to 2010. At 80 percent, single-person households retain the highest proportion of nonfamily households; however, the increase was less than 15 percent in the past decade. Nontraditional families are the types of households that are growing.

Housing

Although positive signs are noted in areas less affected by the housing boom/bust and employment decline, recovery of the overall housing market remains slow. The 2011 homeownership rate of 64 percent remained the same for 2012. Since 2010, housing growth has been sluggish. Fewer than 900,000 units were added annually, down from 2 million annually at the peak of the housing boom. Many markets are still coping with an excess of vacant, for sale, and foreclosed properties left over from the collapse of the housing market and the Great Recession. Almost one in four counties shows no growth or a loss of housing from Census 2010 to 2012. Significant housing losses also occurred due to natural disasters in the past year, such as the wildfire in Bastrop County, Texas, and tornadoes in Indiana and Missouri. Recovery is happening at different rates across the nation. In many areas, no new housing units are being built; however, in other places, new construction is back in full swing, and demand is high.

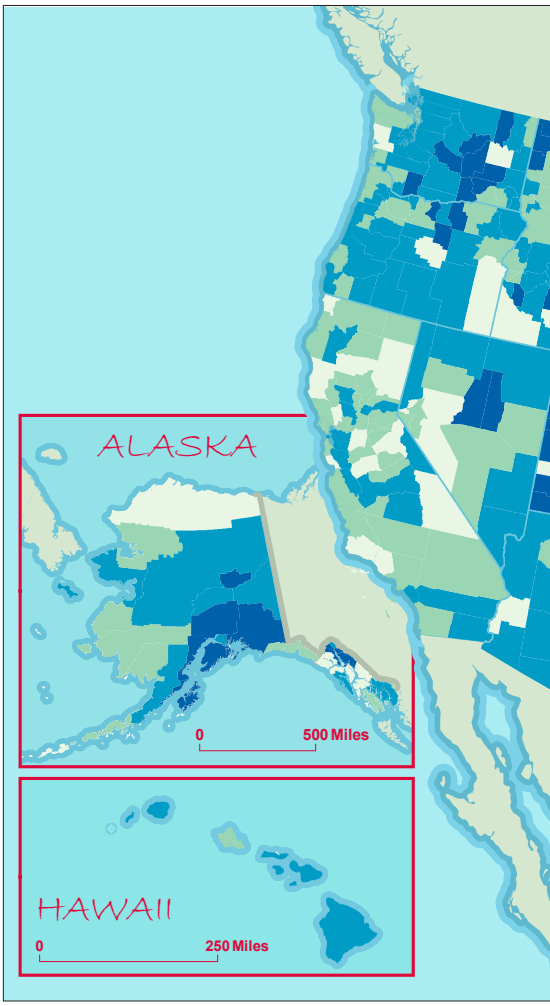
Diverse reasons are causing housing growth in certain metropolitan statistical areas (MSA). The military presence is driving housing growth in the Jacksonville, NC; Killeen-Temple-Fort Hood, TX; and Manhattan, KS MSAs. Growth is also apparent in Morgantown, WV; Auburn-Opelika, AL; Logan UT-ID; and Manhattan, KS—large college towns with good climates and growing economies. Kennewick-Pasco-Richland, WA is a retirement hot spot—especially for Californians. Growth also continues in the Austin, TX; Raleigh-Cary, NC; and Myrtle Beach, SC MSAs.

Employment

The US labor force is emerging from the most severe contraction since World War II. Since 2010, the economy added nearly 3 million jobs, raising the total work force to 142 million. This growth has been geographically broad, with every region and division adding people to payrolls. Only Alabama, Arizona, Hawaii, and Rhode Island registered a net reduction in workers. The total number of unemployed shrank from 16.7 million to 14.9 million people. The US rate of unemployment (the percentage of unemployed people within the civilian labor force) declined. The US labor force participation rate (civilians employed, plus the unemployed as a percentage of the US population aged 16 years and older) also declined by less than 1 percent to 63.4 percent. Some of the reduction in unemployment results from both increasing employment and workers leaving the labor force.

Impact of These Changes on Business

Change is the new constant in these challenging times. Just being "better, cheaper, faster"



no longer works for companies to succeed in this age of social media and increased competition with brick-and-mortar stores. Demographic changes offer additional challenges and many opportunities for businesses to capture more consumers. For example, growing segments of nontraditional, multigenerational, and single-person households, along with increasingly racially/ethnically diverse populations, provide multiple opportunities for business. Senior consumers also have formidable buying power and are ready to spend. Companies that target these new types of consumers with specific products and messaging with multiple media have the best chance of thriving in this difficult business environment.

How can you learn more about your area's demographics? Esri's 2012/2017 Updated Demographics data can provide the answers.

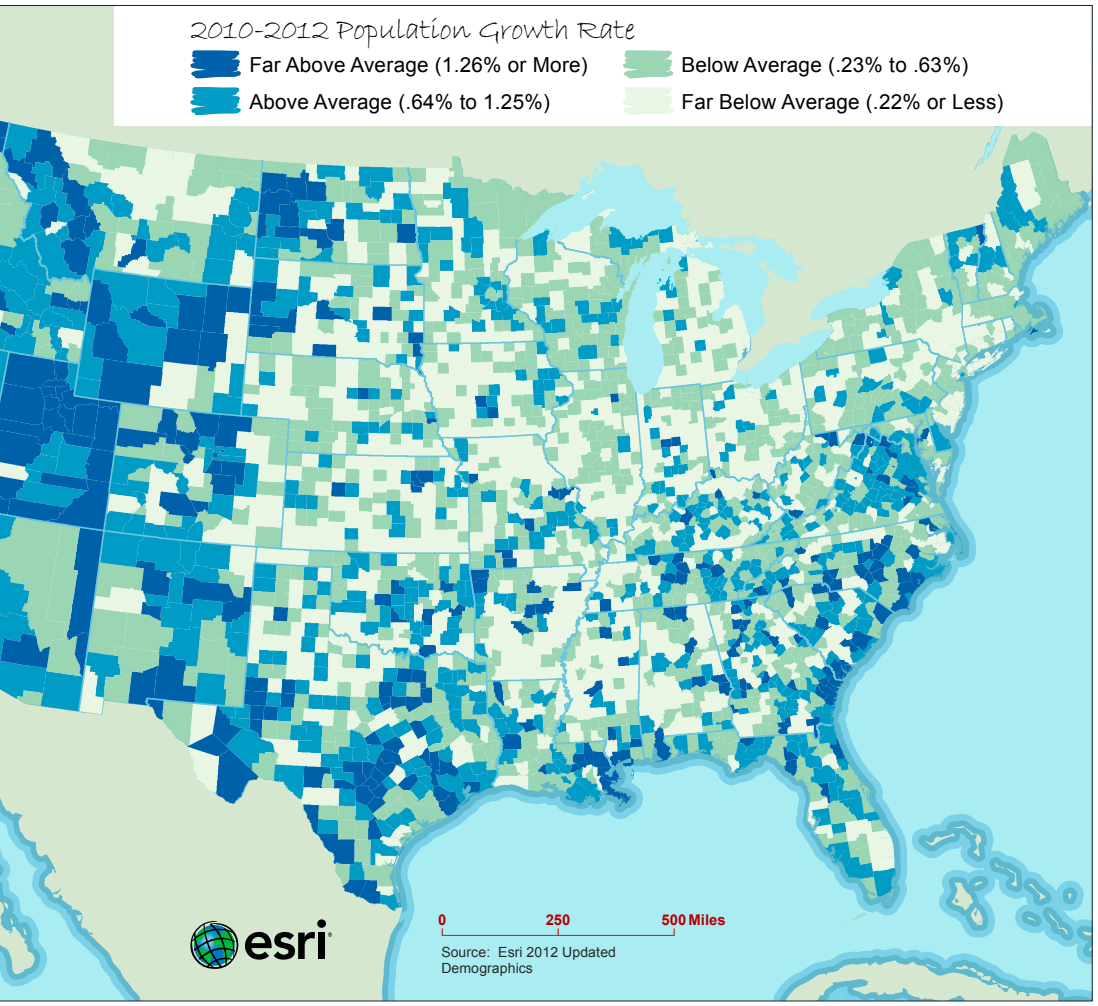
About 2012/2017 Updated Demographics

To perform actionable location analytics in this challenging business environment, you need the industry's most accurate data. Esri's 2012/2017 Updated Demographics database includes a full roster of current-year estimates and five-year projections for population, income, race/ethnicity, home value, net worth, disposable income, and more.

Recently ranked number one for accuracy in a blind, independent study, Esri's 2012/2017 Updated Demographics data was produced with proven methodologies to provide the highest possible level of accuracy.

Delivered in a variety of geographies, formats, and variables, Esri's Updated Demographics is available as an ad hoc database that integrates seamlessly into GIS software and is packaged in products including Esri Business Analyst Online, Esri Business Analyst for Desktop, Esri Business Analyst for Server, Community Analyst, and ArcGIS Online.

For more information about Esri's 2012/2017 Updated Demographics, visit esri.com/demographicdata.



← Population growth provides abundant opportunities for companies to target new types of consumer segments. Areas of growth are clearly illustrated in this map of the United States by county.

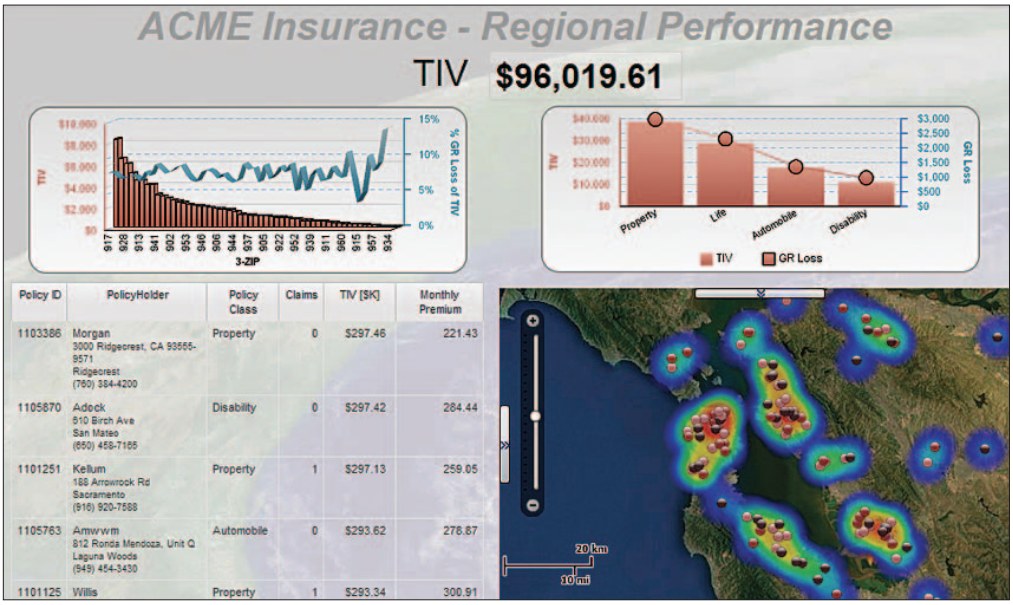
Location Analytics: The Next Big Step in Business Analysis

The Esri Location Analytics platform is designed for business analysts who spend much of their day using tools such as BI and Excel to see patterns and relationships in transaction data.

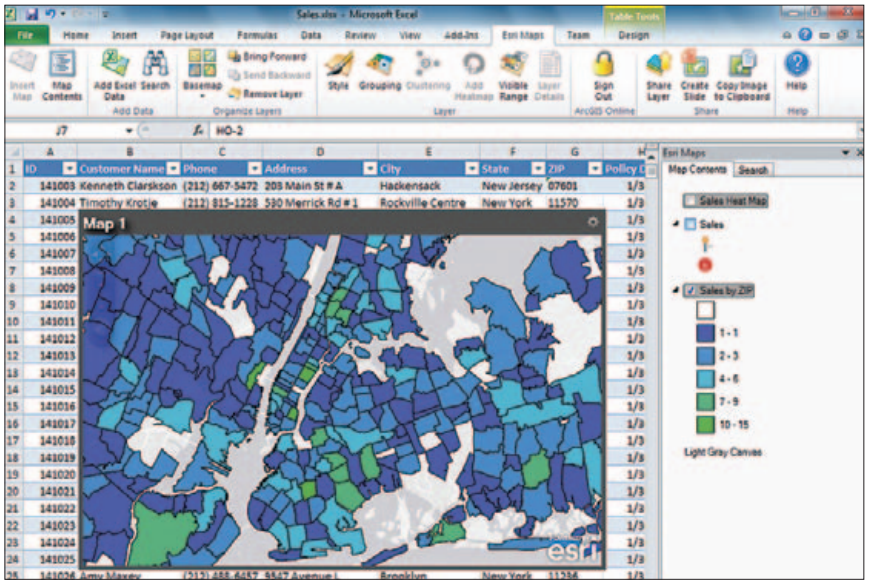
Today it seems that no conversation about information technology (IT) is complete without a discussion about big data, the cloud, or the consumerization of IT. However, arguably, the most impactful trend to hit IT has been analytics—both in media buzz and in corporate investment. Since the publication of Thomas Davenport and Jeanne Harris's book *Competing on Analytics: The New Science of Winning* in 2007, both private- and public-sector organizations have been sold on the notion that they need to leverage analytics on their data to gain insight and drive decision making.

Business analytics has now become pervasive in most large public- and private-sector organizations. Current estimates are that 97 percent of large companies leverage analytics, with over 100 million users worldwide. Users come from across all functional areas, from executives to line operations and from managers to knowledge workers.

These analytic systems basically turn an organization's data into actionable information by discovering and illustrating patterns, trends, and relationships in tabular business data. Typical output is in the form of statistical reports that summarize tabular data and sometimes display this data in graphs and charts. Analytics are often implemented as independent business intelligence (BI) systems but can also be part of larger enterprise systems, like customer relationship, enterprise asset, and resource management systems.



↑ Esri Maps for IBM Cognos highlights regional performance for an insurance company.



→ Esri Maps for Office brings the power of the Esri platform to existing business systems.

Business Analytics and Geography

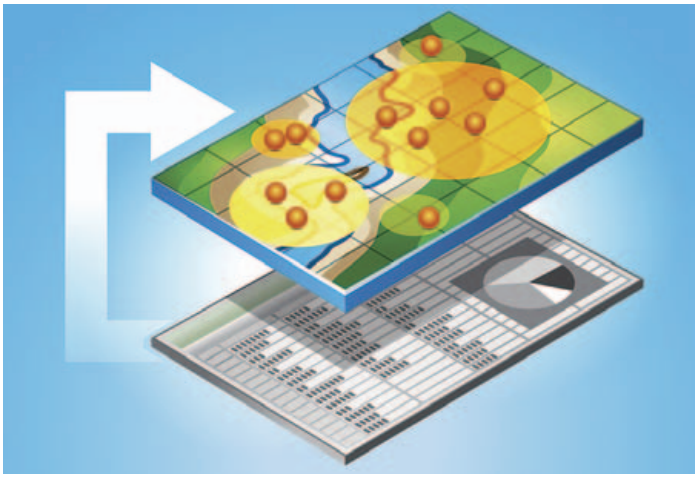
There is a growing realization that by adding geographic location to business data and mapping it, organizations can dramatically enhance their insights into tabular data. Maps and spatial analytics provide a whole new context that is simply not possible with tables and charts. This context can almost immediately help users reach new understanding and more effectively communicate and collaborate using maps as a common language. While this geographic aspect has been largely absent from business analytics solutions, many organizations would like to incorporate it into their operations.

For years, a few progressive organizations have integrated maps and spatial analytics with their business data using GIS technology and netted powerful results. This approach has not become widespread because of the expense of custom integration with enterprise systems and because the capabilities of GIS are beyond the technical knowledge of the business analytics users.

A second approach has been the use of consumer web mapping technologies. This has likewise been problematic because of both difficulties with enterprise integration and a fundamental lack of needed capabilities.

Location Analytics—The Missing Perspective

Industry analysts are suggesting that the demand for mapping and geographic intelligence is emerging as an important segment of the business analytics software category. This interest is reflected in the fact that spatial visualization is one of Deloitte's top 10 technology priorities of 2012. This new segment is being called location analytics and is focused on thematic mapping and spatial analysis for the world of business analytics. This solution space involves simple mapping and spatial analysis capabilities that work directly with business analytics packages and enterprise data systems with no custom integration efforts.



↑ Creating interactive maps inside existing business systems can help users see patterns that graphs and charts cannot reveal.

Esri Location Analytics—Esri Maps

Esri has recently built a simple and powerful solution for the location analytics space known as Esri Maps. This product complements and extends the leading business analytics products: Cognos, MicroStrategy, SharePoint, and others. Esri Maps supports easy-to-use mapping and spatial analytics. These capabilities are complemented with a full library of geographic content for enrichment that makes Esri Maps simple to use and inexpensive, and users can immediately make maps of data contained in business analytics systems. Esri's direct integration with leading business analytics platforms means there is no cost for integration or ongoing maintenance. Also, because it is built using ArcGIS (Esri's core technology platform), it can provide powerful GIS analytic capabilities and make use of other GIS investments in an organization.

Specific capabilities include the following:

- Mapping visualization: Point, color-coded, temporal, clustered, heat maps
- Spatial analytics: Bidirectional interaction, map filtering, proximity, custom area (drive time, trade area), and advanced analysis tools (geoprocessing)
- Geographic information enrichment: Basemaps, imagery, demographics, consumer and lifestyle data, environment and weather, social media, business, etc.

Esri supports multiple business analytics platforms. For example, Esri Maps for IBM Cognos delivers maps, spatial analytics, and geographic information to the IBM Cognos BI environment. Similarly, Esri Maps for Office, a feature of ArcGIS Online, delivers complete location analytics capabilities to Microsoft Office users (see "Esri Maps for Office Is Now Available," page 10).

The Esri technology augments and extends leading enterprise technology, like BI, customer relationship management, and enterprise asset management, providing mapping, spatial analytics, and geographic data enrichment in a complementary and nondisruptive manner. Users of these systems benefit from enhanced insight into their business data without leaving the business system or changing their information workflow—making these systems more impactful and effective for the users, as well as the business at large.

Enterprise Implications of Location Analytics

While Esri Maps provides a location analytics solution for business analysts, this capability is also part of a larger web mapping platform (ArcGIS Online—arcgis.com) that provides enterprise mapping and geographic analysis services for an entire organization. ArcGIS is used to share, visualize, and analyze all sorts of organization data using geography as a common framework. This system can also dynamically integrate (mash up) varied data, including data that has been mapped using location analytics. When integrated with the growing volume of geospatially referenced data available on the web, new insights begin to emerge.

continued on page 16

Esri Online

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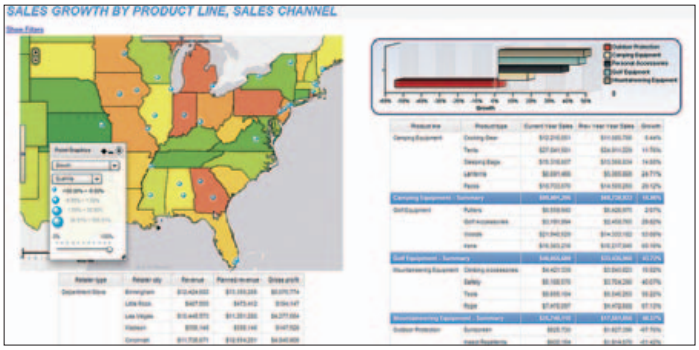
Location Analytics: The Next Big Step in Business Analysis

continued from page 15

ArcGIS Online is helping enterprises extend the concepts of simple location analytics into whole new areas of information sharing; communication; collaboration; and, ultimately, better decisions. In the private sector, this capability is helping companies be more efficient and create a competitive advantage. In the public sector, it means more effective, transparent, and efficient services.



↑ Business intelligence dashboards are enhanced with interactive maps.

Location Analytics and Enterprise GIS

The Esri Location Analytics platform is designed for business analysts who spend much of their day using tools such as BI and Excel to see patterns and relationships in transaction data. They want self-service mapping and simple spatial analytics that are delivered within the analytic systems they use every day. These users will drive the proliferation of location analytics across the organization.

GIS professionals are in a unique position to help these analysts. They are already creating useful frameworks, data, and map layers that let non-GIS professionals, knowledge workers, and anyone in the organization start to use location and geography to make better business decisions.

They can also support this new community and help integrate and leverage their capabilities with other enterprise data to maximize the positive impact.

The integration of mapping and geographic intelligence across the entire enterprise will reinforce and leverage the mission of GIS professionals, particularly in transforming the way organizations leverage geographic knowledge.

For more information, visit esri.com/locationanalytics.

Location—The Tie That Binds

By Keith King, General Manager, Private Sector Group, GISi

As an executive, how hard is it for you to get a complete view of what is really happening in all parts of your enterprise? Is the information you receive fragmented? Out of date? Do you have multiple versions of the "truth"? Can you spot trends? Would you like to wake up in the morning and use your iPad to review KPIs? Can you make timely decisions about your business with confidence?

In other words, are you getting the information you need, in the format you need, when and where you need it?

Organizations have worked for years to tear down information silos, but challenges remain. If this is the case for you, consider utilizing geography as an integrating platform to organize, analyze, visualize, and share your enterprise data assets.

Spatial, or location, information is contained in much business data. For example, wouldn't it be great to integrate and visualize the following:

- Customer addresses and disaster event data
- Supply chain requirements with weather and traffic data
- Point of sale and demographic data
- Indoor customer mobility patterns with product placement and customer demographic data
- Regulatory compliance requirements with housing loans history
- Store location and crime data
- Location of Tweets related to marketing campaign actions
- Asset information and maintenance compliance performance

The list goes on. My point: It makes good sense to utilize geography as an integration strategy because location is often the common denominator across disparate data assets and systems. Once these items are integrated and organized around location, the next logical step is to use spatial technology to analyze, visualize, and share the data.

Esri has developed an entire technology stack for utilizing geography as an enterprise platform. Wiring up CRMs, ERPs, data warehouses, and other operational business systems to a geographic platform is not as hard as you might think. If you want, you can start with small investments in technology and services and quickly develop new and powerful ways of running your business.

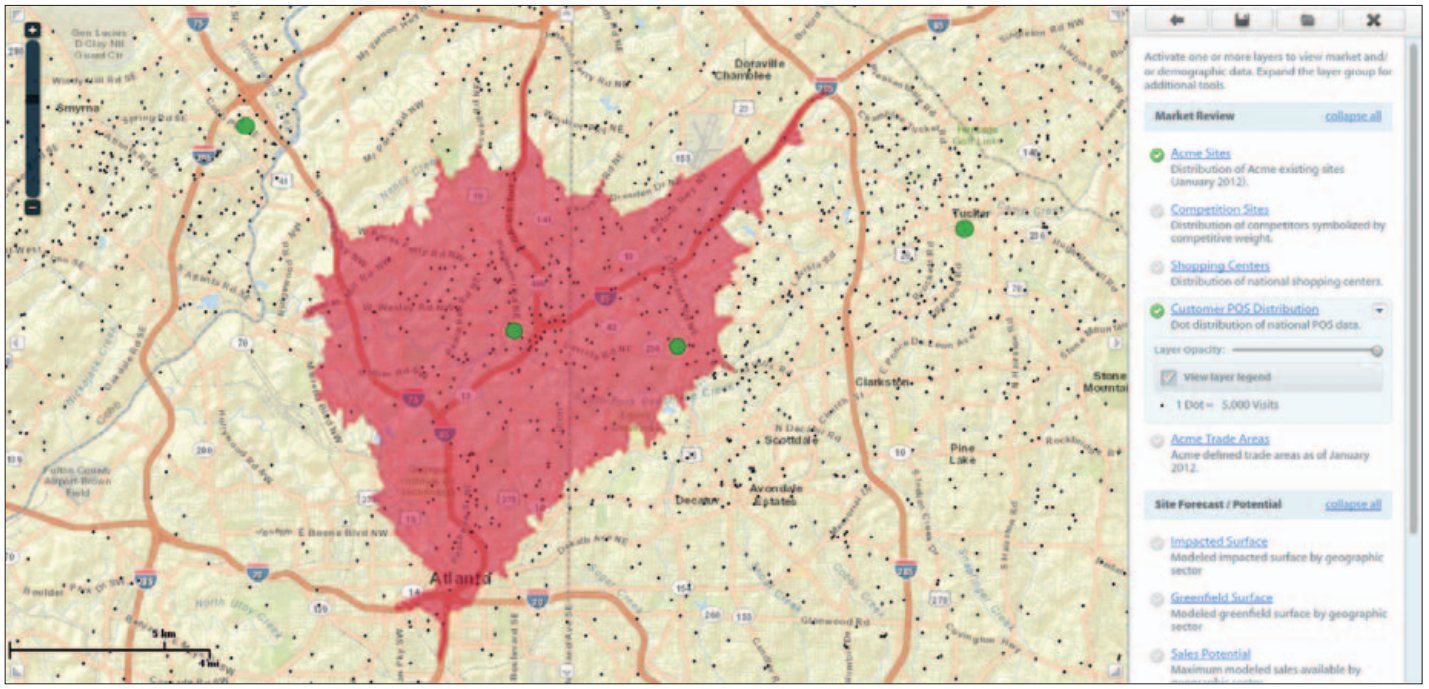
The trends are clear. It will be commonplace for organizations to have specialized spatial analytics divisions. Interactive maps will be a standard part of the executive's BI dashboard. Geographic platforms are increasingly being recognized as good options for dealing with big data, predictive analytics, risk analysis, and data from mobile devices, to name a few. Geography is also a great platform to use for providing value-added services for your customers. Put simply, maps serve as a common language for effectively communicating complex ideas.

Geography as a technology platform is a game changer that delivers a distinct competitive advantage.

Don't get left behind.

Contact Keith King at kking@gisinc.com or 205-941-0442, extension 159, with questions or comments.

↓ Visualizing the business environment is easier using ArcGIS Business Analyst—trade areas, competition, and existing stores, along with roads and other information, can be seen together in one environment.



Keeping Service Levels High and Costs Low

Esri Business Summit Delivers the Goods on Location Analytics

By Karen Richardson, Esri Writer

"Using location analytics significantly changes your insights into the future—you get an understanding of where you came from and find out where you want to go," said Bruce Wong, manager of advanced network analytics at General Motors (GM) Company as he spoke at the Plenary Session of the 2012 Esri Business Summit, held July 22–24 in San Diego, California.

The Esri Business Summit brings some of the best minds in business together to share how commercial organizations worldwide are using place-based decision making to support customer service, grow profitability, and manage change in an increasingly complex world. Nearly 400 attendees listened to plenary speakers in the morning and then attended focused sessions on topics such as using GIS for better customer service, retail applications, and spatial modeling for better growth.

Being in the Best Place

Wong was the first of several plenary speakers. He began the morning talking about how important it is for GM to understand and improve its business analytics. The company transformed itself, going from bankruptcy to profitability and posting $1 billion in first quarter profits this year. Wong said the company has been using more GIS analytics to trim fat and become more fiscally fit.

Dr. Wayne M. Gearey Jr., senior vice president of location intelligence at Jones Lang LaSalle, reiterated Wong's emphasis on location and added that location intelligence is the game changer. "Using location analytics, we can define our data filters to understand the best location based on what the business ecosystem looks like," said Gearey. "This is important because our ultimate goal is to get our clients to a geography of opportunity using the right people, data, and technology. As a result, we build trust and they come back again and again."

↑ Rob Bakker of the insurance and financial services firm Achmea stressed the importance of thinking about old things in new ways.

Knowing What the Customer Needs and Wants

Rob Bakker, knowledge manager at Achmea, an insurance and financial services firm in the Netherlands, stressed that it is imperative for business managers to think about old things in new ways. Achmea's use of GIS has led to streamlining processes for its 18,000 employees, cutting costs, and innovating new products.

While neither a GIS expert nor a practiced public speaker, Bakker said he felt compelled to share Achmea's success using GIS for risk management, more efficient business processes, and transparency to both government authorities and its customers.

"Achmea has a complex structure—many labels and brands," explained Bakker. "We have divisions in health, banking, real estate, life and pensions, and non-life. Each division has its own dynamics and methods of product distribution."

Working on priority key performance indicators for each of these divisions, Bakker's GIS team was able to build business cases showcasing the effectiveness of GIS for diverse business functions. "One tenet is to be a leader in our industry," said Bakker. "So, we focused on social solidarity and created a pilot project with the City of Eindhoven [in the south of the Netherlands] to help them measure rainfall and mitigate flooding. That translates to creating a digital underwriting map for the reduction of unknown risk accumulation. By doing this, we talk the same language as the decision makers and connect GIS to the strategic goals of our business."

Using GIS, Achmea managers believe they also have a better view on underwritten fire risks and thus are more effective in their risk management. Having this common operational picture for the underwriters of several Achmea brands is more efficient and competitive. It makes claims data available for customers, increasing the company's transparency, and allows Achmea staff to develop products and services that make them an insurer that customers can depend on.

Dependable and Nondisruptive

Interstate Batteries leverages GIS to enhance its outrageously dependable service model. A $1 billion, privately held company, Interstate Batteries relies on a vast network of dealers to sell its products and provide spent batteries for recycling. Esri technology is at the center of its efforts to maximize the efficiencies of Interstate Batteries distributors as they serve supported dealers. "Esri mapping technology serves as the glue of our best-of-breed CRM [customer relationship management], business intelligence, and master data management solution by providing a visual delivery mechanism for distributor route fulfillment. At Interstate Batteries, we strive to serve our distributors and dealers with the best products and business/technology solutions, including opportunities to make GIS useful and effective," said Mike Darr, program manager for Interstate Batteries' Market IQ Program. "Before you know it, you'll have the user looking at data in ways he never pictured it and uncovering previously unknown opportunity."

Other plenary speakers during the morning session included Felma Degefa, senior staff engineer at Kohler Co.; David Kniffin, business manager for 3M Traffic Safety Systems; and Sudhir Potharaju, vice president of software development for AIR Worldwide. They emphasized the need to keep projects small and simple and take care not to be a business interrupter that changes the way that managers work.

Keeping Service Levels High

Adam Kostecki, a claims examiner in the Property Loss Division at Amica Mutual Insurance, extended this train of thought in his afternoon breakout session "Pushing GIS to the Front Lines to Improve Customer Service." Amica, headquartered in Lincoln, Rhode Island, is a provider of personal insurance for autos, homes, and boats. Known in the industry for its high standard of customer service, the company has been awarded several J.D. Power and Associates customer satisfaction awards.

During the presentation, Kostecki demonstrated how Amica uses GIS after hailstorms, tornadoes, and wildfires to proactively respond to policyholders' needs. In one compelling example, Kostecki showed how local branch users kept policyholders informed during the High Park and Waldo Canyon wildfires in Colorado. During the height of these fires, tens of thousands of homes were under mandatory evacuation. Some people couldn't access their homes for days. Amica used GIS technology and up-to-date satellite images to notify some policyholders that their homes were still standing.

"They saw smoke and flames approaching as they evacuated and had no idea if they would have a home to return to," Kostecki explained. "Our policyholders were amazed we had access to this technology. They really appreciated these updates."

Kostecki also showed examples of how GIS could be used during the claims adjustment process to improve efficiency and lower expenses. "With GIS, we have a much better idea of what our claim potential is going to be after an event," he said. "In the past, it might have taken days to fully understand the magnitude of an event. Now our branch users can generate reports with a few mouse clicks, and they can do this in real time as the event is occurring."

Breakout sessions and Lightning Talks filled the balance of the afternoon. The day ended with a poolside social at the Omni San Diego Hotel, courtesy of Gold sponsor Microsoft and Silver sponsors AccuWeather, CloudTrigger, i-cubed, Nokia, and TomTom.

For information on the 2013 Esri Business Summit, visit esri.com/bizsummit.

↑ "Look for the simple opportunities to make GIS useful and effective," said Mike Darr, program manager for Interstate Batteries' Market IQ Program. "Before you know it, you'll have the user looking at data in ways he never pictured it."

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