

The Geographic Hub

A New Business Asset for the Insurance Industry

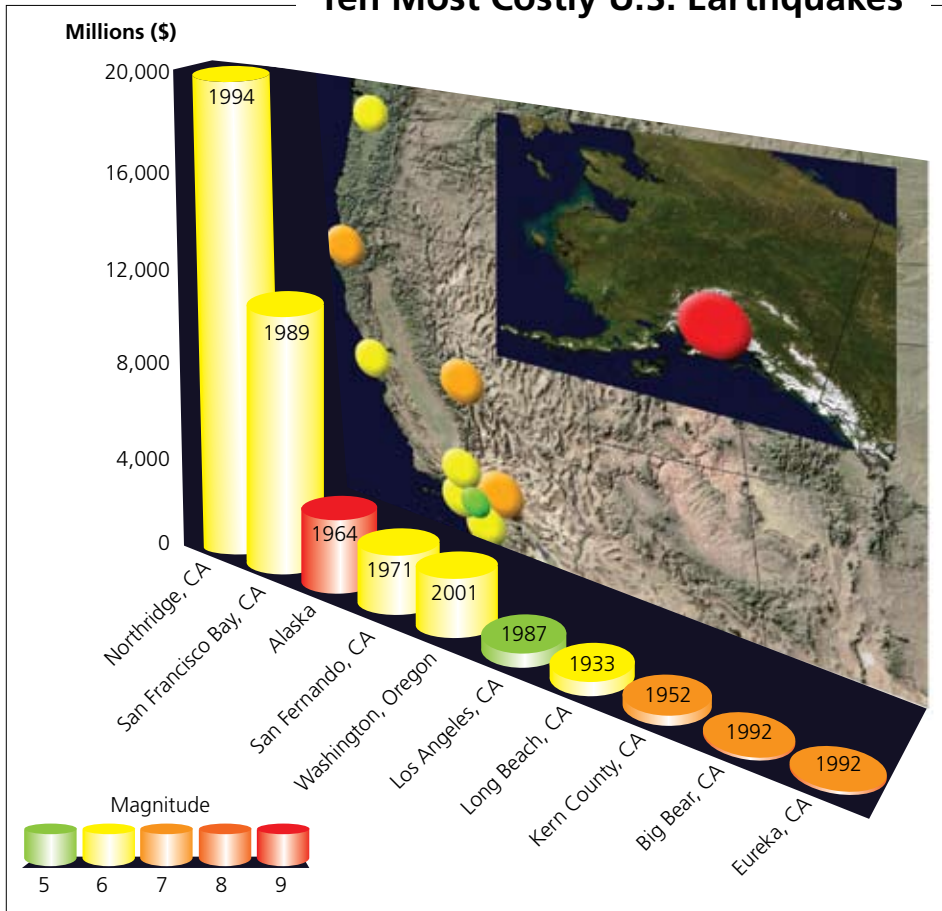
Losses from georisks are increasing dramatically worldwide. The December 2004 tsunami was followed by the devastating earthquake in Kashmir that killed 80,000 people and left numerous others injured or homeless. The Gulf hurricanes, which brought so much damage and disruption to the United States, made 2005 the costliest natural catastrophe year so far in insurance history.

Innovative insurers and reinsurance companies have recognized geographic information

system (GIS) technology, spatial analysis, and detailed asset modeling as strategic resources. By making more effective use of GIS, companies in the insurance industry will be able to minimize risk, release capital, and maximize operational performance.

Historically, much of the analysis that primary insurers and reinsurance companies performed was aggregated to coarse geographic units such as postal units. Everyone in the same postal unit paid the same price for their

Ten Most Costly U.S. Earthquakes



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policy and the risk was assumed to be equal. The insurers spread the risk while attempting to charge a fair premium, maintain customer loyalty, and balance operating ratios and demands from stakeholders.

GIS Builds Better Business

Insurance companies wagered on disasters and business discontinuities not happening. Recently, it seems luck has run out for many companies in the industry. New, tough regulations and more

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The Geographic Hub—A New Business Asset for the Insurance Industry

stringent compliance rules have come hard on the heels of losses and reduction in customer confidence. Companies are experiencing pressure on many sides and must deliver more profitable products and services quickly while opening up new markets to regain their competitive edge. Agility is key.

Insurers are increasingly recognizing the value of accurately georeferenced data and precisely geocoded assets. Geography is emerging as the core of successful insurance companies. A business that geocodes policies to premise level is able to more clearly identify and locate risks, perils, and places where accumulated risk exceeds capacity or acceptable underwriting levels. Businesses that create a geographic hub can tie all assets, policies, liabilities, risks, perils, and statistical models together. Spatial analysis is easily and more effectively joined with statistical analysis and business intelligence to improve commercial operations. Rating and

pricing rules engines are optimized with a new understanding of the business as a whole.

Improving Accuracy and Understanding

A geographic hub allows modeling and analysis to be performed at a much more granular level than with list- or table-based analysis. Exposure levels can be more accurately defined and risk better understood and managed. Risks do not need to be evenly spread among others in the same ZIP Code but are fine-tuned based on true proximity to perils.

Each customer is rated according to individual risk and the business potential associated with those who request similar coverage. Insurers are able to manage their own risk appetite, identifying more profitable business in markets and areas that would be excluded by nongeographic models. In parallel, insurers gain the ability to more accurately and dynamically manage their reinsurance reserves and

improve their liability ratios.

A less variable and volatile operating environment should ensure that the geoenabled insurer will develop more appropriate and attractive pricing models that deliver better customer service and create more favorable market conditions.

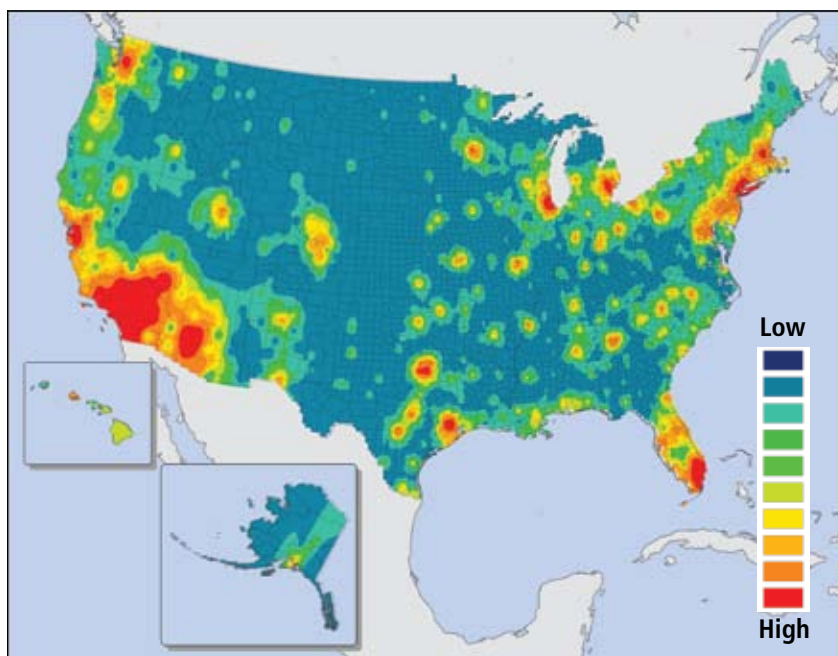
GIS Improves Capital and Risk Management

Accurately geocoding every insured asset allows companies to automatically perform peril, risk, and capacity assessments. More detailed understanding of portfolios and books is achieved behind the scenes, with the ability to target untapped customers or market sectors, dynamically price policies, and balance capital and reinsurance requirements. Better use of capital and reduced overhead allow insurers to write new business and improve their workflow. Underwriting, reinsurance, marketing and sales, claims management, compliance monitoring, and corporate governance can be linked more closely, balancing capacity, risk, and exposure to the advantage of all stakeholders.

An understanding of the exact location of every insured asset and its proximity to other assets, perils, or risks is now recognized as a major requirement for all companies involved in the insurance industry. Geographic analysis is increasingly associated with all forms of commercial activity and policy, risk, and exposure management. GIS is the geographic advantage—a powerful tool that empowers decision making and business understanding. Are you able to realize it?

For more information on ESRI GIS solutions for insurance, visit www.esri.com/insurance.

Map Fact: Total Insurance Spending



Insurance Spending Aggregated across Multiple Product Lines (Source: Consumer Expenditure Surveys, Bureau of Labor Statistics, ESRI forecasts)

Norwich Union: Creating Equitable Insurance Quotes with GIS

Norwich Union (NU) is the largest insurer in the United Kingdom (UK). The company typically pays out approximately 70 million English pounds annually in loss and damage caused by flooding. Unprecedented levels of flooding in 2000 increased the number of flood-affected properties, and this figure climbed to 270 million English pounds. With the Environment Agency predicting that there would be a tenfold increase in the risk of similar river and lake flooding incidents over the next century, NU needed to find a better way to gain understanding of flooding patterns. NU wanted to be able to base insurance quotes on accurate, realistic information, improving insurance premiums for customers and reducing risk for the organization.

Acquiring a Better GIS Platform

NU was using a simple GIS program for data pre-

sentation, but it was not capable of the complex, spatially based analysis required to accurately model floodplains.

NU recognized that ESRI ArcView software offered a robust enterprise-level GIS platform that could accommodate the vast quantities of data generated, perform complex analysis, and be easily used by a new team of personnel. The adoption of this software has subsequently brought a huge benefit to NU's customers and to the organization.

Through gaining a more detailed view of flood risk across the UK, NU benefited from reduced business risk and passed this benefit on to its customers through a more accurate system of flood insurance premiums. It is able to establish the precise flood risk of insured properties; adjust insurance premiums based on new, more accurate information; give its underwriters a



better understanding of risk; and, in turn, offer insurance that is better suited to its customers' specific needs.

"At Norwich Union, improving customer service is paramount," says Jill Boulton, GIS manager, NU. "ESRI has enabled us to look at our data from an entirely different perspective, giving us a better understanding of risk and enabling us to offer our customers an insurance package that meets their specific needs, not those of their neighbor."

To learn more, read an interview with Jill Boulton, GIS manager for Norwich Union, on page 8.

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Munich Re Creates a Global Corporate GEO Data Service Platform

Munich Re Group is one of the world's largest reinsurers and the second-largest primary insurer in Germany. The company operates from its headquarters in Munich, serving more than 60 reinsurance subsidiaries, branches, service companies, and liaison offices worldwide. Globally, 5,000 insurance companies in approximately 160 countries rely on Munich Re's expertise and financial strength. It is consistently recognized as one of the most influential and respected companies in the industry.

Munich Re has been researching geoscientific phenomena and their attendant risks and loss potentials since 1974. The company is committed to sharing its knowledge and experience with clients and the public to diminish the future effects of natural catastrophes. Munich Re has developed a wide selection of reports, tools, and services to distribute its knowledge and georisk expertise more widely.

ESRI's ArcGIS suite has allowed Munich Re to define a comprehensive set of GIS layers and Web services that allow a user to geocode to an address

level, run scenario simulations, and perform accumulation analysis. Different groups of users have access to the most appropriate data and services based on their individual requirements and analysis needs: in-house underwriters have the greatest need for the most powerful tools, while customers can log in to Munich Re's Connect platform to access hazard and insurance information.

GDS: The GEO Data Service Platform for Munich Re

The GEO Data Service (GDS) has become an integral part of the entire IT infrastructure at Munich Re. Its data warehouse and geotoolkit include an extensive collection of spatial data and hazard information as well as geocoding and mapping services. The core datasets, such as hazard zones, insurance portfolios, and claims data—which are used for analysis—are stored and managed by an ArcGIS geodatabase running on Oracle 9. Every asset or event can be identified and geocoded if needed. GDS comprises a rich set of tools and applications for its users.

NATHAN: The Natural Hazards Assessment Network

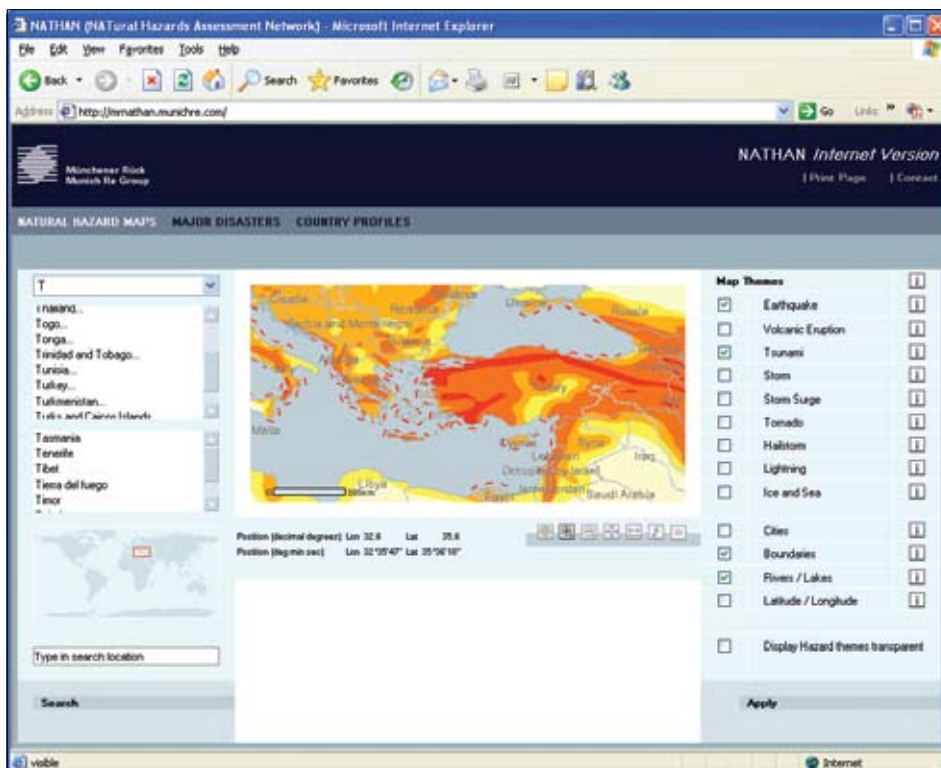
One of Munich Re's key tools based on GDS is the Natural Hazards Assessment Network (NATHAN). It is an integral part of the company's entire IT infrastructure and supports underwriting and risk management tools with global natural hazard information as well as sophisticated geocoding, risk analysis, and mapping capabilities.

NATHAN is based on Munich Re's corporate GEO Data Service. It provides functionality ranging from data capture and geocoding of insured risks to visualization, risk analysis, and risk modeling. The system not only allows users to review accumulation issues but also model and identify concentrations and geographic patterns associated with various risks.

NATHAN is composed of three modules:

1. A Natural Hazard Maps module that allows a user to place a hazard pointer anywhere on the earth's land surface and immediately generate a qualitative estimate of the natural hazard situation at that location
2. A Major Disasters module that provides information on economic and human losses from current and historic natural catastrophes worldwide
3. A Country Profiles system that generates an overview of a selected country's geography, population, and economy together with its overall natural hazard profile

A free public version of NATHAN, based on ArcIMS and GDS, is available via the Internet at mrnathan.munichre.com. This provides an overview of worldwide hazard zones as well as recent events and summary reports of their social and economic impacts.



Example of Natural Hazard Maps from the NATHAN System

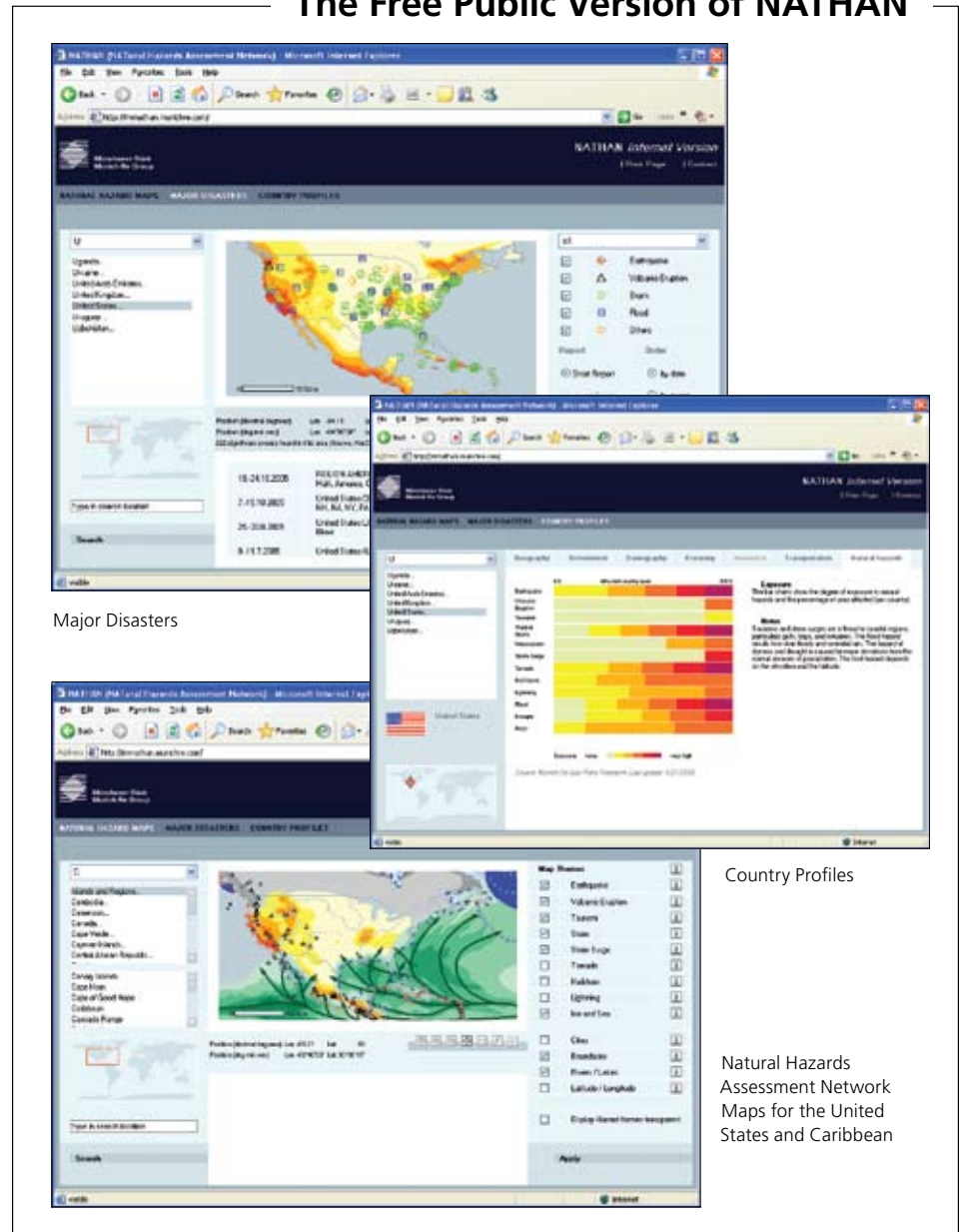
The Free Public Version of NATHAN

Global Location Finder—This facility enables address-based geocoding of risks. Portfolio and claims data can be georeferenced and used for detailed simulations and analysis. There is no limit to the number of objects that can be referenced, and due to excellent application performance, large treaty portfolios with more than a million risk addresses can be easily processed. For countries for which no address-based data exists, the system automatically performs coarser geocoding based on known Catastrophic Risk Evaluating and Standardizing Target Accumulations (CRESTA) zones and a global city database where hundreds of thousands of locations are stored.

To date, more than 20 million risks have been geocoded down to street level, together with their house numbers, for 20 European core markets and the United States. This is an important step toward more risk transparency in the underwriting process. High-quality geocoding of worldwide portfolio and claims data is crucial for risk management and portfolio optimization, especially for lines of business involving natural hazards and man-made risks such as terrorism.

GAP Service—The Geographical Analysis of Portfolios (GAP) service performs assessment of customer portfolios based on geocoded data and enables the identification of areas of concentration or accumulation. The MRGAP extension allows analysis of encrypted portfolio and claims data. GAP's multiperil analysis of property insurance portfolios makes it possible to identify previously unknown and unidentified accumulation situations, or hot spots. This is especially important when potential accumulation effects are caused by multilocation policies. Primary insurers are using this information more and more, not only in traditional hazard-related analysis but also for the purposes of managing their sales operations and client acquisition strategies.

Cat. Loss Estimation Service—This customer service estimates weather-related losses caused by wind and hailstorm events. The service integrates high-resolution portfolio data and the latest



information on windstorms and severe weather events and creates an estimate of the expected losses and focal areas within 48 hours after an event. The medium-term aim is to extend the capabilities to allow optimized loss management and drive improvements in the efficiency of workflow for loss adjusters.

Risk on Earth—This new service offers aerial and satellite imagery that lets underwriters gain a better understanding of the overall portfolio situation by adding images to their risk maps. This service was triggered by the internal interest in Google Earth at Munich Re but was developed

using ESRI's Web Services. Munich Re recognized that ESRI Web services (1) allow seamless data integration with the GDS georisk platform and (2) provide a more attractive and progressive architecture that helps Munich Re capitalize on current and future investments in data, analysis, and systems development.

For more information on Munich Re and its use of ESRI GIS platforms, contact Andreas Siebert or Juergen Schimetschek, Geo Risks Research, Munich Re (e-mail: geo@munichre.com).

An Interview with Mark McCoy, ESRI Insurance Solutions Industry Manager



BusinessGeoInfo recently sat down with Mark McCoy, ESRI insurance solutions industry manager, to discuss ESRI's vision for GIS technology in the insurance market and what the coming year would bring in terms of technology, data, and applications.

Q: Why has GIS become so important to the insurance industry?

McCoy: Insurers are using geography, or location, as a common language across their entire organization, even out in the field. With information being so departmentalized these days, it has become even more essential to have a solution that ties all business data together so insurance companies can see the big picture when making critical business decisions.

Whether you are an executive, an underwriter, or even an appraiser, being able to visualize

your data provides a new perspective and can often show areas of risk or potential risk that you may never have seen before. This plays a crucial role when making decisions about the insurability of new policies or when reevaluating existing ones. Executives, actuaries, and underwriters are finding that, since GIS so easily integrates into their existing business processes and IT infrastructure, they can immediately see how their risks and liabilities are geographically distributed and the ultimate impact this has on portfolio performance.

Q: What are the main benefits?

McCoy: There are many, but I think most insurers would classify the benefits in terms of improved customer service, faster and more accurate decision-making tools for underwriters, and more responsive claims support processes. GIS assists behind the scenes, linking information from existing data warehouses or legacy systems

to a specific location. This helps reduce costs, improve performance, and ultimately deliver more affordable policies to customers. I can summarize this into three major business benefits:

- Improved business intelligence for senior managers
- More effective understanding of risk and potential accumulation
- More realistic and accurate data processing using a geoextended workflow

Q: Can you give a few examples of what insurers are doing with GIS today and where you see this going in the future?

McCoy: Using GIS to see risk at a set point in time or to do historic review for future impact is a traditional use of GIS in insurance. This information can in turn be used for predictive analysis, statistical modeling, and frequency analysis to improve pricing. The data can then be visualized in a number of ways depending on preference, whether it be by heat maps for hot spot analysis or on aggregation maps.

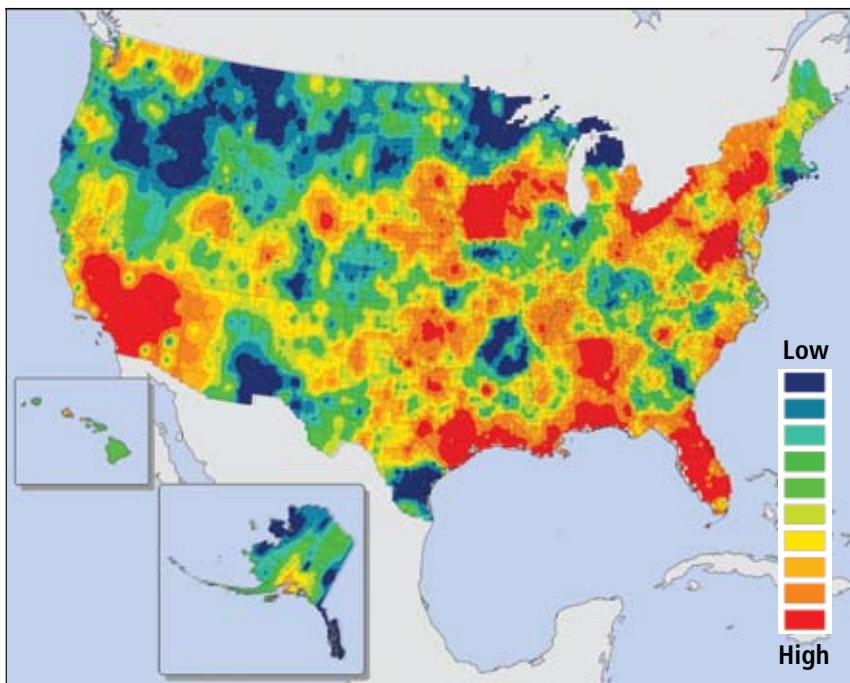
One of the emerging trends we are seeing in the marketplace today is the use of real-time data. Real-time data can include Global Positioning Systems (GPS), weather, traffic, and so on. Another trend is dynamic pricing, where insurers manage their portfolios by comparing the capacity and liabilities of each policy as it is underwritten.

Of course, GIS also plays a major role when responding to catastrophic events. This is an area where I see GIS being more heavily deployed in the field via mobile devices of all types. We saw this a few years ago after Hurricane Katrina and most recently with the California wildfires, which took GIS to a whole new level. We look forward to seeing more innovative uses of GIS in the near future.

Q: What are the major drivers for insurers using GIS?

McCoy: The three major drivers are transparency, accuracy, and repeatability.

Map Fact: Total Insurance Risk



Insurance Perils and Risks Aggregated for the United States (Source: Consumer Expenditure Surveys, Bureau of Labor Statistics, ESRI forecasts)

GIS allows insurers to achieve greater transparency of product rating plans by accurately quantifying each individual risk or policy. This allows the impact of each risk or policy on the total portfolio to be known. You can see how this leads to improvements in managing risks, pricing products, and handling claims.

Better accuracy means better product performance. Products are offered at a price attractive to customers, and the insurer has a more accurate understanding of liability. Integrating GIS with customer relationship management (CRM) systems also helps improve rating plan performance. Insurers get a deeper understanding of who their customers are and consequently know how to target select product offerings to them.

Last, repeatability means that the same methods can be used again and again with confidence in the results. GIS allows you to use established datasets for analysis and apply the same methods to different product lines like auto, life, or homeowners insurance. This standardizes probability and pricing models and ensures consistency across the entire organization. The most valuable aspect of GIS is that it can be applied everywhere, from the underwriting or agent system all the way to the executive dashboard.

Q: How are insurance companies overcoming business challenges in today's market?

McCoy: GIS is best deployed as an enterprise technology supported by information technology standards. In the past, there have been issues with awareness and recognition of GIS as a strategic asset, since GIS was seen as a specialized activity with low priority given from the IT department.

The most successful insurance companies have been those that have taken a dedicated cross-departmental approach to GIS. The investment made in one department can be capitalized on by others with improvements in accuracy and repeatability. When you make GIS part of your daily business practice or move it to decision support functions in the organization, you get far more value and return on investment. Benefits received from using GIS for

an accurate underwriting process flow through the organization when claims need to be paid or additional reinsurance purchased.

Q: Is measuring success easy?

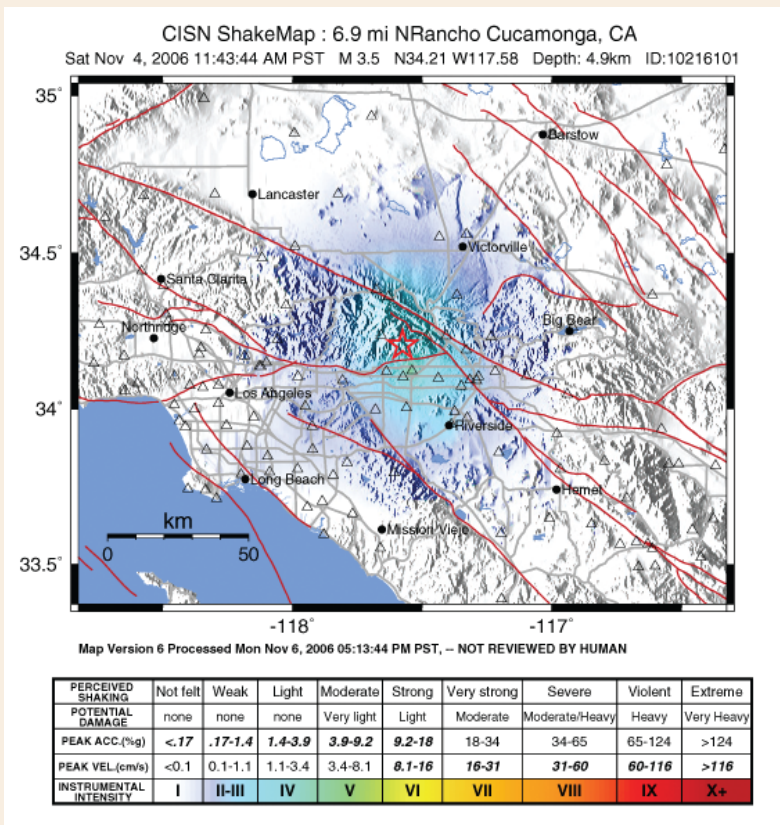
McCoy: Quantifying the return on investment from GIS, as with any system, can be difficult. In many ways, it is more appropriate to identify benefits that might not have a hard dollar amount associated with them. For example, because GIS provides a more accurate report on loss position after an event, the insurer can manage reserves better and protect long-term assets. Additionally, GIS puts accurate management information into the hands of key stakeholders who manage business and investor funds. All this translates into improved confidence among mutual investors and stockholders. It's hard to track and quantify the im-

port of business that wasn't written or policies that were never purchased because they were deemed too risky. GIS undoubtedly helps insurers balance their risk appetite better and identify highly profitable policies even in areas where the competition may not be willing to write the business. Insurers quickly get a feel for the impact GIS makes on more accurately or profitably pricing their risks.

Integrating GIS into an insurance company streamlines and improves workflow while also providing more realistic and comprehensive models. This may be a bit of a paradigm shift and require significant change management, but the gains far outweigh the costs.

For more information, contact Mark McCoy at 909-793-2853, ext. 1-1553, or e-mail mmccoy@esri.com.

**Earthquake ShakeMap for 2006
Event Near Rancho Cucamonga, California**



Map supplied courtesy of U.S. Department of the Interior, U.S. Geological Survey.

ShakeMaps are near real-time maps of ground motion and shaking intensity following significant earthquakes. These maps are used by federal, state, and local organizations, both public and private, for postearthquake response and recovery, public and scientific information, and preparedness exercises and disaster planning.

Interview with Jill Boulton, GIS Manager for Norwich Union

Recently, *BusinessGeoInfo* interviewed Jill Boulton, GIS manager for Norwich Union (NU), the largest insurer in the United Kingdom (UK). With a market share of approximately 20 percent and insuring more than 700,000 businesses, one in five motor vehicles, and one in five households in the UK, NU chose GIS to help control claims costs.

Q: How long has NU been using GIS?

Boulton: I guess you could say Norwich Union has been representing things on maps for years. We started using GIS in 2002. It wasn't until we started using GIS that we saw what a powerful tool it is and began to appreciate its many applications. So far, we have only just scratched the surface in its capabilities.

Q: What prompted NU to implement GIS?

Boulton: The floods of 1998 and 2000 made NU realize that we needed to understand in much greater detail which properties were like-

ly to have a flood risk. As no information existed to help us analyze this, we created our own flood map with both depth and frequency. From this, a flood risk rating was established for every property and used in our premium calculations.

Q: What benefits can the insurance industry realize with GIS?

Boulton: As insurance becomes more complex, it will be the insurers who understand their risk best and price it correctly who will thrive. GIS can also help with reinsurance, claims handling, and marketing.

Q: What advice would you give to other insurers looking to implement GIS?

Boulton: It's important to use a GIS system that gives you room to grow as you gain confidence. NU was lucky to have chosen ESRI as our corporate GIS provider; ESRI's advice saved us from many costly errors early on.

I also recommend getting a corporate spon-

sor. Unless you get that buy-in from upper management, the implementation could flounder.

Q: Do you see GIS changing the way insurers do business?

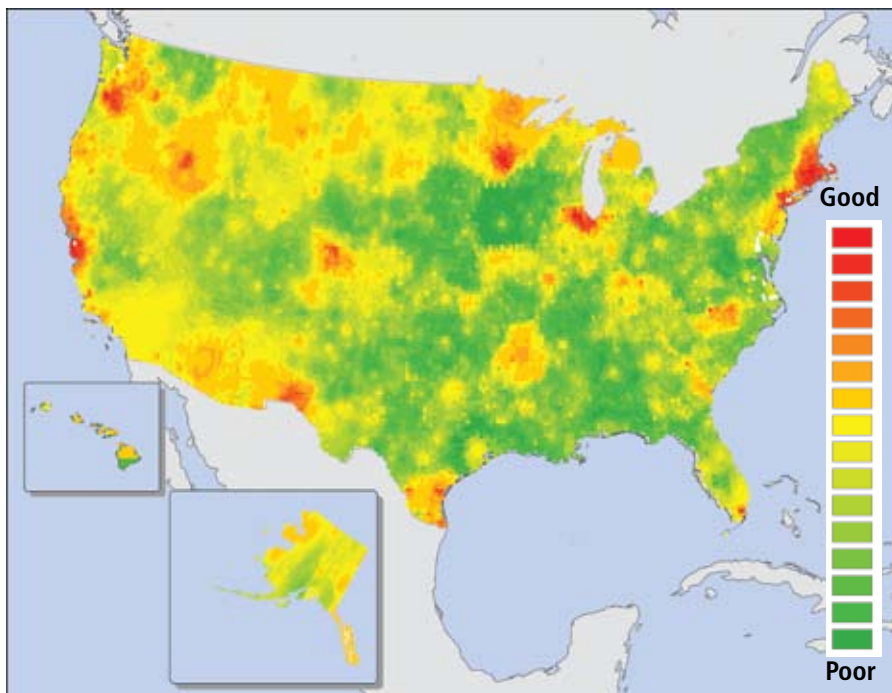
Boulton: Absolutely. GIS has enabled insurers to rate consistently at an individual property level. It will make accumulation analysis far easier and allow companies to target customers in a much more defined way.

Q: Are there any lessons learned from your use of GIS?

Boulton: Make sure all your data is spatially enabled—it makes life a lot easier when you are dealing with many different computer systems. And, as I said before, get buy-in from senior management.

To read more about how ESRI GIS has benefited Norwich Union, visit www.esri.com/insurance/casestudies. Reference Norwich Union article on page 3.

Map Fact: Balance Surface



Map shows total income compared to risk. Red areas have proportionally greater income than risk. (Source: Consumer Expenditure Surveys, Bureau of Labor Statistics, ESRI forecasts)

GIS-Extendable Business Functions

Common Insurance Business Functions Significantly Improved, Optimized, and Extended by GIS

- Geohazard Risk Assessment
- Peril and Catastrophe Modeling
- Actuarial Investigation and Modeling
- Underwriting and Policy Pricing
- Book Analysis and Portfolio Optimization
- Target Marketing and Customer Profiling
- Policy Leakage Analysis
- Decision Support and Policy Quotation
- Territory Rating and Scoring
- Reinsurance Capital Management
- Claims Management and Triage
- In-Field Adjuster Support and Scheduling
- Regulatory Reporting and Compliance
- Management Information Systems
- Business Continuity Planning
- Common Operational Picture (COP) Solutions

WeatherBug Professional

Severe Weather Alerting

WeatherBug maintains the largest exclusive weather network in the world, providing individuals, schools, businesses, and government agencies with the most precise live weather information, the most relevant weather reports, and the earliest weather warnings to safeguard lives and property and plan with confidence. With more than 8,000 WeatherBug tracking stations and more than 1,000 cameras across the United States, WeatherBug delivers live local weather conditions to millions of consumers via the Internet and mobile devices.

Cross-Industry Business Solutions

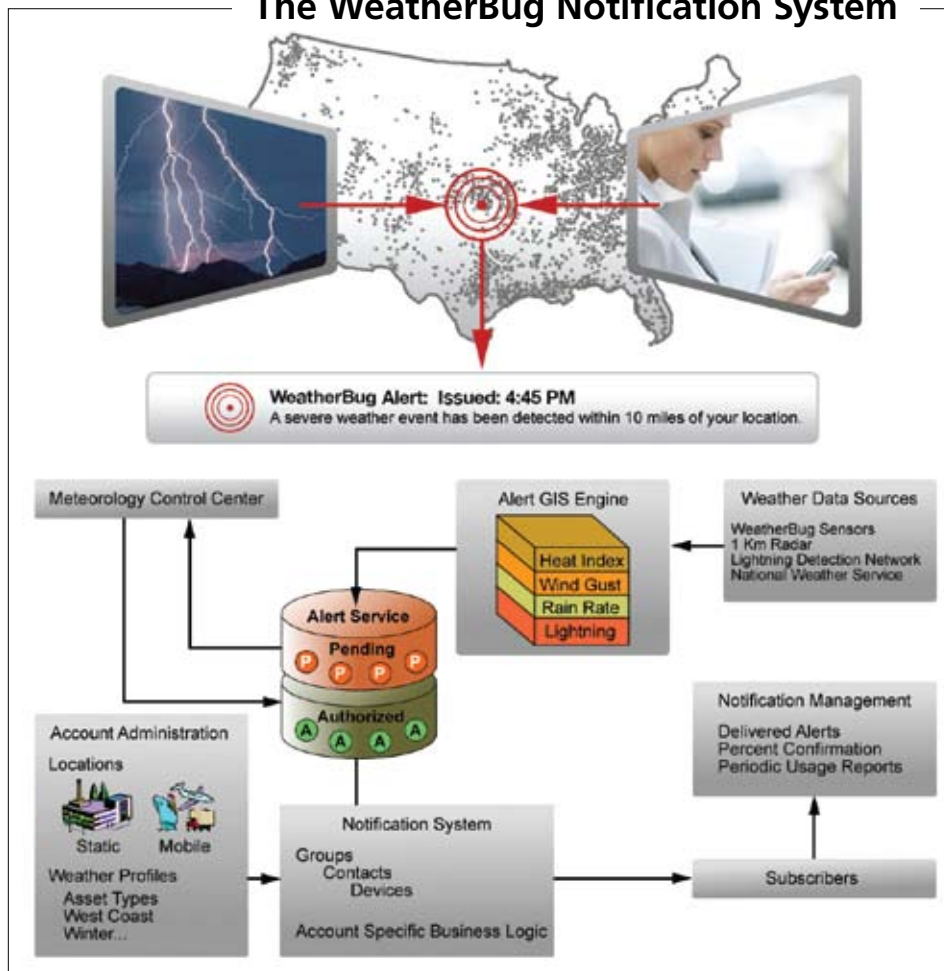
WeatherBug's services are provided to more than 100 state and local government agencies, including the National Weather Service (NWS), as well as real estate, retail, insurance, and transport businesses; broadcast television stations; schools; and other public services. WeatherBug is also available as an Internet service to power business applications that can consume its live weather feeds. These suites of products and services assist organizations to make critical business decisions quickly, efficiently, and confidently.

In the event of severe weather, such as hurricanes, tornadoes, hail, ice storms, and thunderstorms, live weather information allows companies to respond more effectively, execute business continuity plans, and better protect and secure their assets. Staff and vehicles can be directed or moved to safer ground, plans can be made to respond to potential business interruption, and scenarios can be tested against continually updated information. WeatherBug's live feed is also useful in other emergency situations, such as in a fire, terrorist attack, or chemical spill, where it can be used for impact models and to evacuate people away from smoke, toxic plumes, or other hazardous emissions.

Live National Feeds and Alerts

WeatherBug is the only national, live, neighborhood-level weather service available in the United

The WeatherBug Notification System



States. Updated every two seconds, WeatherBug's Smart Notification Weather Service advises subscribers when severe weather is detected in their proximity or in areas that are subject to an alert or watch notice. The system matches precise, neighborhood-level severe weather threats with a user's location. Two-way alert messages are provided to that user's phone, pager, or voice mail and responds back to the issuer. Smart Notification combines precise weather detection with ESRI's GIS platform, location-based technology, and high-end notification service. The system can work with all GPS-enabled cell phones and in-vehicle devices to track mobile as well as static assets.

Protecting People, Property, and Communities

WeatherBug's Smart Notification Weather

Service has become a major asset for organizations that want to improve their ability to protect lives, property, or their local communities. In addition to real-time alerts, the system has many uses for response planning and homeland security. WeatherBug's national data is complemented by global weather conditions and forecasts for 58,000 locations and 200 countries worldwide. Companies across the insurance industry are looking to WeatherBug to assist in understanding and minimizing risks, deliver more accurate and precise information in the event of severe weather, and facilitate better planning and mitigation strategies.

For more information on Weather Bug, visit weather-safety.weatherbug.com.

Mobile GIS for Insurance Applications

Increasing Efficiency and Accuracy for Improved Customer Satisfaction

Field-deployed workers in the insurance industry need to be able to do their jobs efficiently and easily. Mobile GIS applications can be the essential tool for this, allowing information to be collected and passed from the field to a main database back at the office. ESRI's ArcGIS Server Mobile Software Development Kit (SDK) allows solutions to be developed and deployed in the field—using PDAs, smartphones, or Tablet PCs—and integrated with other hardware such as GPS, digital cameras, and bar-code scanners. Greater hardware performance coupled with cheaper, wider communications coverage now allows these mobile GIS applications to be usefully deployed in the field to respond to any claim, regardless of the asset or level of threat or disaster.

Mobile GIS can assist insurance companies in many different parts of the business, from risk assessment and in-field verification to policy val-

uation and site documentation. Advanced data management and synchronization features in the ArcGIS Server Mobile SDK allow data to be exchanged with back-office systems, and if coverage permits, information can be continually updated. Multiple field-workers can collaborate with the central office to ensure that their activities, scheduled tasks, and workflow are balanced and efficient.

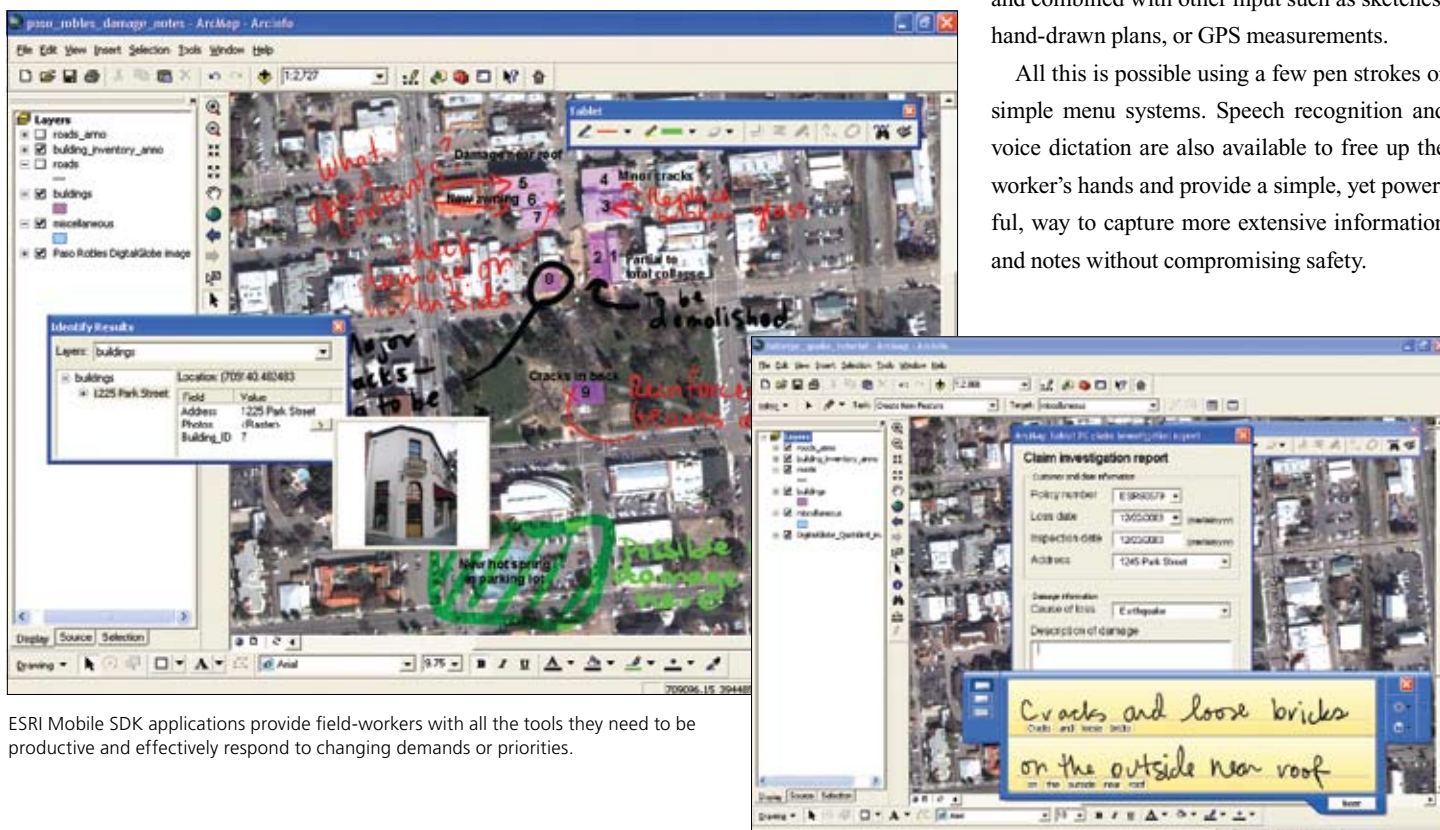
Claims Management

Tablet PCs are an ideal solution for mobile claims management. They are lightweight notebooks, ruggedized to survive dropping and resist moisture and dust, that run standard Microsoft Windows applications. In-field GIS is easy to use thanks to digital pens and voice commands. The traditional keyboard and mouse are also available when the field-worker returns to the hotel, office desk, or command center.

Tablet PCs also support wireless networks, allowing users to connect to central servers to retrieve and update information in real time from the field. A Tablet PC configured with ESRI GIS lets the claims manager take an intelligent GIS geodatabase into the field. Relationships between features are maintained together with attribute integrity. The worker also has the ability to analyze and share new information from the office with other colleagues or on-site personnel.

ESRI's mobile applications support innovative features such as pen-based computing and digital ink technology, which allow users to write notes and redline and highlight specific features on maps, building footprints, or aerial photographs. The workers can complete editing tasks in a more natural way than traditional desktop applications, therefore improving both efficiency and accuracy. Handwritten on-screen notes and text can be converted into database information and combined with other input such as sketches, hand-drawn plans, or GPS measurements.

All this is possible using a few pen strokes or simple menu systems. Speech recognition and voice dictation are also available to free up the worker's hands and provide a simple, yet powerful, way to capture more extensive information and notes without compromising safety.



ESRI Mobile SDK applications provide field-workers with all the tools they need to be productive and effectively respond to changing demands or priorities.

Handwritten notes can be converted to database information and actions authorized from the central office.

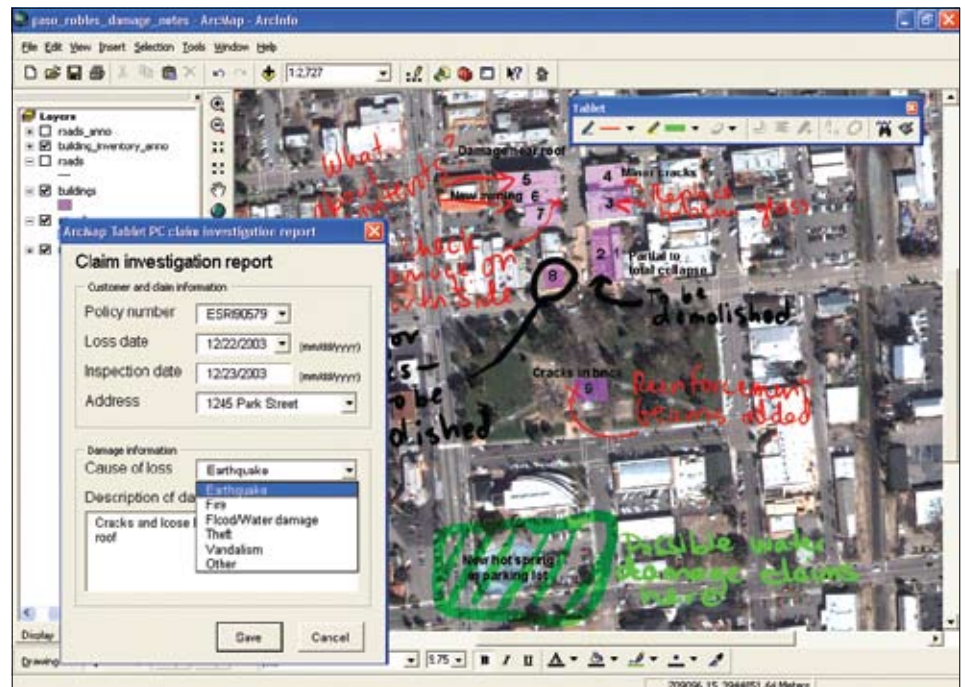
Improved In-Field Information Gathering

Mobile GIS applications are designed to optimize workflow and improve user productivity. For example, bookmarks allow the field staff member to immediately identify areas of interest and select the most appropriate map and information layers with which to investigate a claim. All this can be shared with other personnel back at the office, and the bookmark allows the worker to quickly regenerate the information upon returning to the site.

With an Internet connection, the field-worker can also use ESRI's free Web services or integrate personal capabilities to gain additional data, perform geocoding, obtain routing and driving directions, or get information from sources that may not be stored in the GIS. ArcWeb Services let the mobile worker integrate information from a range of different suppliers without the need to have the data locally or incur the corporate expense of managing the same data at headquarters. Other ESRI partners and customers also provide Web services of current and historic data. The mobile crews can access real-time severe weather reports, information on flood extent and damage, scenario maps, and other streams that will assist in situation awareness and allow everyone to be more clearly informed of the conditions in the local neighborhood.

Information can also flow from the worker to the centralized office. Handwritten notes, diagrams, comments, and digital photographs can be sent to the claims office and reconciled with known information. For example, on-site investigation of the physical damage to a building can be supplemented with photographs of the exterior damage, while internal disruption and features requiring immediate repair can be quickly noted.

All this information can be created as searchable attributes along with other text-based information that is linked to the building and individual floor plans. The claims processing office can use the information arriving from the field to triage and more efficiently process the claim. More timely approvals can be issued to repair buildings, rehouse tenants, or get businesses back up and running. Improved



Preloaded information and form-based data entry can improve in-field workflow.

information sharing leads to quicker and more appropriate decision making. This often translates into better customer service and reduced impact on the policyholder. Reducing the downtime and interruption for personal and commercial customers translates to real cost reductions for the insurer and a more valuable long-term client relationship.

Enhanced Workflow and Operational Consistency

With its portable design, ruggedness, and pen and voice technologies, the Tablet PC offers increased mobility and productivity compared to a traditional notebook computer. It also overcomes the computing power and screen size limitations of handheld devices. For the mobile insurance professional, a Tablet PC powered with ESRI mobile applications becomes an effective, versatile platform for field mapping and analysis. Field applications can be written to simplify complex tasks and automate procedural activities. Applications can encapsulate workflow to ensure that all the required information is gathered at each processing step and validated against business rules or corporate procedures, if required.

Because the mobile SDK is integrated into the ArcGIS Server suite, an application developer can deploy the same functionality on the Tablet PC as on a desktop or in the enterprise. Therefore, a single, common set of business rules and system functionality can be deployed multiple times, anywhere across an organization, using its enterprise GIS platform. The field-worker benefits from specific tasks and business practices that are optimized to the specific workflow or task at hand while the centralized office is assured of consistent functionality, reduced training costs, and improved system management.

In addition, new tasks or data services can be created to respond to high-priority or unusual situations. Rather than having to install new software on every Tablet PC in the field, the insurance company could publish the task using Web services. The new functionality would automatically be available to each mobile or remote worker upon connecting to the Web server. This significantly reduces total cost of ownership and allows greater responsiveness to unplanned or unforeseen business challenges.

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Mobile Insurance Solutions

As mobile technology advances in terms of bandwidth and capacity, insurance companies are, in turn, more widely deploying mobile applications to their field staff. The most common use is to support the in-field claims management process by providing standardized workflows, automating data capture, and extending decision making from corporate headquarters into the field.

Data Models and Sharing

Success depends on a sophisticated data interchange and sharing model, which synchronizes data sharing between the corporate office and the worker in the field. This lets insurance companies keep oversight of the triage process but enables the claims team to respond immediately to the situation it encounters in the field. For customers, it also serves as a means to build trust and confidence that the situation and their needs are being treated correctly. When their needs are met, customers are more likely to remain loyal to their insurance provider.

Shareholders benefit from increased customer confidence in the claims management process and accuracy of the information derived from it. The company can continually monitor and calculate its loss or exposure, often within days or hours of an event happening. Having accurate, up-to-date information is critical to policy validation and timely payout. Good shareholder feedback on exposure also supports confidence in the company and its processes. More accurate, timely, and validated forecasts about the impact of events can protect market standing and stock price.

If an insurance company can anticipate a pending peril, it can better prepare claims staff and prioritize schedules, find accommodations, and monitor employee safety in case of additional hazard or another imminent event.

Solutions for the Desktop and Enterprise

ESRI's ArcGIS Server extends GIS functionality across a company's business infrastructure. Centralized applications can be enhanced with

Binding Insurance through Geography



applications working on mobile clients. Field personnel can synchronize data with the company infrastructure or connect to a central data warehouse using any communications network—mobile carriers, Wi-Fi, or fixed landlines.

Applications can detect the availability of the connection and synchronize data and business logic as necessary. The applications can also handle interruption and unforeseen loss of connectivity, synchronizing the next time the network is available.

Data processing and decision making can be much more dynamic than in the past. Field-made decisions can be included in the centralized common operational picture as they are received, processed, or authorized. Better information sharing leads to more accurate understanding of exposure and reinsurance needs.

Embedding Mobile GIS into Business Activities

Mobile applications are the ideal platform for postevent assessment. Decision makers can fine-tune key parameters of the pricing model based on accurate postevent assessment by fully trained and equipped workers. Timely, accurate data collection can help reduce fraud, claims disputes, and the total cost of claims processing. In turn, this allows actuaries and other analysts to better assess future risk and exposure associated with perils.

For more information on ArcGIS Mobile solutions, visit www.esri.com/mobile.

Implementing Successful GIS in Insurance

Recommended Steps for a Successful Insurance GIS Implementation

- Define the strategic purpose of the GIS and objective, measurable goals.
- Consult with and get buy-in from key stakeholders and business units.
- Prioritize and quantify the resources required to be successful.
- Identify the system users and define the main points of improvement.
- Select an enterprise platform capable of supporting all users and workflows.
- Establish an integration plan to embed GIS into business activities.
- Agree on, communicate, and monitor the implementation timetable.
- Evaluate achievements against milestones and adjust where necessary.

ESRI's Community Tapestry Segmentation

Helping Insurance Companies Improve Customer Knowledge

In this highly competitive business environment, it is becoming increasingly critical for insurance companies to acquire and retain their most profitable policyholders. It costs more to acquire customers than to retain them. Since insurance organizations remain concerned about high policy lapse rates and are constantly pressured to operate more efficiently, they seek better business practices. Therefore, they must be creative in identifying new markets and exploiting underdeveloped markets while ensuring they retain their existing customers and avoid policy leakage.

This challenge can be met by gaining a thorough knowledge of customer types: who exactly are the people who purchase different insurance products, how are their lifestyles and needs changing, and what underlying trends are influencing purchasing rates? Insurance com-

panies are uniquely positioned because they already collect and maintain vast amounts of customer data.

Data Mining

By mining data files, insurance companies can better understand their customers' product preferences, craft effective marketing messages, and design products for up- and cross-sell campaigns. Pairing the right insurance products with the right audience at the right time can significantly boost bottom lines and reduce customer acquisition costs.

Data such as latitudes-longitudes, demographics, and segmentation codes can be geocoded and appended to each customer record to create an enhanced customer database—one that combines actual information collected

by the insurance company with predictive or syndicated data. This enhanced data reveals information about potential customers who live in the same area as existing policyholders. Adding demographic and lifestyle information to customer records provides a detailed portrait of customers by type. These enriched customer records can be sorted, analyzed, and mined geographically to reveal the demographics, lifestyles, and product preferences of a company's customers.

Statistical Analysis

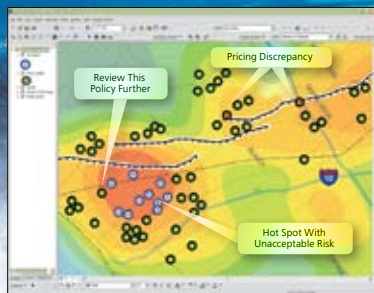
GIS allows insurance companies to significantly expand the statistical analysis performed in business intelligence tools. If a company knows who its customer types are, where they live, and the variation within and between different neighborhoods, it can respond more effectively to their needs. Better messaging, more relevant products, improved customer service, and increased rates of return can be quickly delivered by understanding customers' geographic distribution and structure. Customer profiling will also allow the company to pinpoint core customer groups and identify other markets that are underserved or offer greater promise.

Marketing departments now require more precise customer segmentation to provide better communication with a segmented client base. Segmentation operates on the theory that people with similar tastes, lifestyles, and behaviors seek others with the same tastes. These behaviors can be measured, predicted, and targeted.

Community Tapestry

ESRI's segmentation system, Community Tapestry, classifies all U.S. neighborhoods into 65 distinctive segments based on socioeconomic and demographic characteristics. Community Tapestry combines the traditional statistical methodology of cluster analysis with ESRI's latest data mining techniques to provide

Transform Your Business View of Risk



Hot spot mapping shows policies in high-risk areas that need further analysis.



Visualize risk and policy pricing data overlaid on a 3D globe.

Gain the Geographic Advantage

Geographic information system (GIS) software provides you a new way to visualize and analyze your level of risk, liability, and exposure. By integrating mapping and geographic analysis into your current business processes, you can better understand and evaluate your customers, policies, claims, and assets.

To learn how you can benefit from GIS or to see how GIS is helping other major insurers, brokers, and reinsurance professionals, visit www.esri.com/risk.



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1-888-333-2771

www.esri.com/risk

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Building an EOC Approach to Crisis and Disaster Management

Insurers are continually looking to find ways to minimize their risk and maximize their operational performance. Considerable time and effort are spent accurately calculating the risk associated with a particular event, customer, or location. Once done, further modeling and analysis try to balance these risks with the requirements of others seeking similar coverage. The gamble of insurance companies is spreading the risk while charging a fair premium.

Insurance companies wager that disasters and business discontinuities will not happen. However, when these events do occur, the insurer needs to respond quickly to local needs, helping people and businesses return to their everyday lives. Some have been criticized for how they respond to “client-impact” events. Customers expect insurers to handle critical situations effectively and make things right. Similarly, insurers have financial and regulatory obligations to maintain the financial stability of the company. Insurance is a high-stakes balancing act—a competitive business with little margin for error.

Insurers must balance their capital assets, levels of reinsurance, competitiveness, policy prices, and book of business, yet still deliver high levels of customer support, provide and underwrite multiple lines of business, and comply with ever-expanding regulatory rules. With so much pressure, it is easy to see why many insurers feel overwhelmed by a lack of accurate and up-to-date information for decision making. GIS has proven itself a valuable tool to overcome these issues.

When implemented in the core of an insurer’s business, GIS acts as a “jump station” that links disaggregated data, analysis, and business processes through the medium of geography. GIS offers new and more advantageous ways to conduct business and overcome the limitations of tabular analysis common to business analytics products.

How We Do This

Create an Emergency Operations Center approach to a crisis or disaster.

Insurance companies need to respond to man-

How Do We Do This?

1. Create an Emergency Operations Center approach to a crisis or disaster.
2. Triage the claims and address worker and customer needs once field deployed.
3. Monitor performance and respond to changing needs.
4. Manage personnel in the field.
5. Integrate and collaborate using powerful information interchange tools.

made or natural disasters in an effective manner. In many ways, coordinating the response is no different than implementing an Emergency Operations Center (EOC). Indeed, many large- and medium-sized companies already use and rely on ESRI-enabled EOCs to manage their response to crises and disasters. EOCs create a common operational picture (COP) that allows companies to consolidate information and validate, qualify, and summarize it so decisions can be made more quickly and successfully.

Information is analyzed, coordinated, and packaged via a centralized response center. Real-time data from field-deployed workers and in-house executives can be validated against company procedures and policies. Action can be taken to mitigate against or reduce the risk of further losses. GIS allows companies to map, overlay, and interweave many different datasets together, using location to create an enterprise-wide COP. This provides both a summary of events and detailed breakdowns of situations requiring further monitoring.

For insurance companies, the GIS-enabled EOC should be integrated with customer relationship management (CRM) software; financial systems; customer information, such as claims history and complaints; and peril databases. At the same time, GIS can provide accurate and up-to-date information for risk analysis software, allowing assessment personnel and loss management teams to be better informed of events and their financial impact.

Triage the claims and address worker and customer needs once field deployed.

An EOC-style approach allows an insurer to sort, prioritize, and profile its response. In the back office, GIS has an important role in extending and improving the way client needs are handled and more accurately estimating and evaluating the number of staff members, their skills, and their level of experience.

ESRI GIS provides powerful scheduling, routing, and logistics optimization software that can be easily interfaced with corporate human resources systems. This integrated approach can improve the efficiency of the in-field workforce and reduce the time and costs associated with collecting claims information. GIS software assists in logistics and route planning by defining who will be served, in what order, where, with what resources, and when.

Staff benefit from more streamlined workflow, less duplication, reduced time spent in the field, and improved coordination. The customer in return receives better care, more timely decision making, and a clearer understanding of why decisions have been made. GIS helps reduce the workload for the mobile and centralized workforce and can improve client care, ensuring that customers feel that they truly matter to the insurer.

ESRI has many business partners, including SAS, SAP, Information Builders Inc. (IBI), and Business Objects, that provide solutions to better inform decision makers. When linked to GIS, insurers are able to solve other problems and gain a more holistic view of what’s needed and when. Appropriately applied, the combined solutions identify the quantity and quality of resources required to meet the potential event or to manage the response to an ongoing crisis.

Monitor performance and respond to changing needs.

One of the most powerful aspects of GIS is data aggregation and consolidation. GIS fuses different information formats and sources, creating actionable tasks that enable better decision making. At the simplest level, GIS allows EOC center

staff and line-of-business managers to visualize and prioritize activities such as finding appropriate accommodation for response teams within the affected area, ensuring all travel needs are met, and identifying access to communication channels or other infrastructure needs. ESRI GIS has been heavily used in response management and planning to assess requirements for protective clothing and special equipment; identify risks, medical hazards, or needs for specialized staff insurance; and improve task management.

By correctly implementing GIS, an insurer can use the same underlying enterprise data model and software technologies to measure performance and respond to change. This can include GPS tracking and security, workload balancing, managing worker fatigue or overscheduling, and reducing claims-processing delays through claims triage. GIS is an important resource that can improve client satisfaction and ensure that the field-deployed workforce has appropriate information to deal with changing priorities and the need to reorganize resources or refocus activities.

Manage personnel in the field.

Field-deployed insurance workers responding to a situation need tools that enable them to perform better and respond more dynamically to changing situations, emerging information, and fluid time-tables. ESRI ArcGIS Server software provides a new out-of-the-box ArcGIS Mobile application and the ArcGIS Mobile Software Development Kit that have become essential tools for collecting information and feeding data into the enterprise. These support a range of connectivity models that allow data to be continuously shared with the central office or up/downloaded as network connectivity permits. This allows near real-time data interchange and process monitoring that lets insurers manage, plan, and respond to any situation more effectively. New tasks can be set to meet altered priorities, objectives can be redefined based on balancing shifting resources, and issues can be resolved on the spot as needed and authorized.

Event notification system companies, such as NC4, Dialogic, Walker Wireless, Amcom, and 3n, have integrated ESRI software into their alert

notification and incident monitoring systems. This allows notices to be sent to the workforce and linked with sophisticated analysis and visualization solutions including BlackBerry-enabled mapping, wireless management applications, and remote data collection facilities.

Integrate and collaborate using powerful information interchange tools.

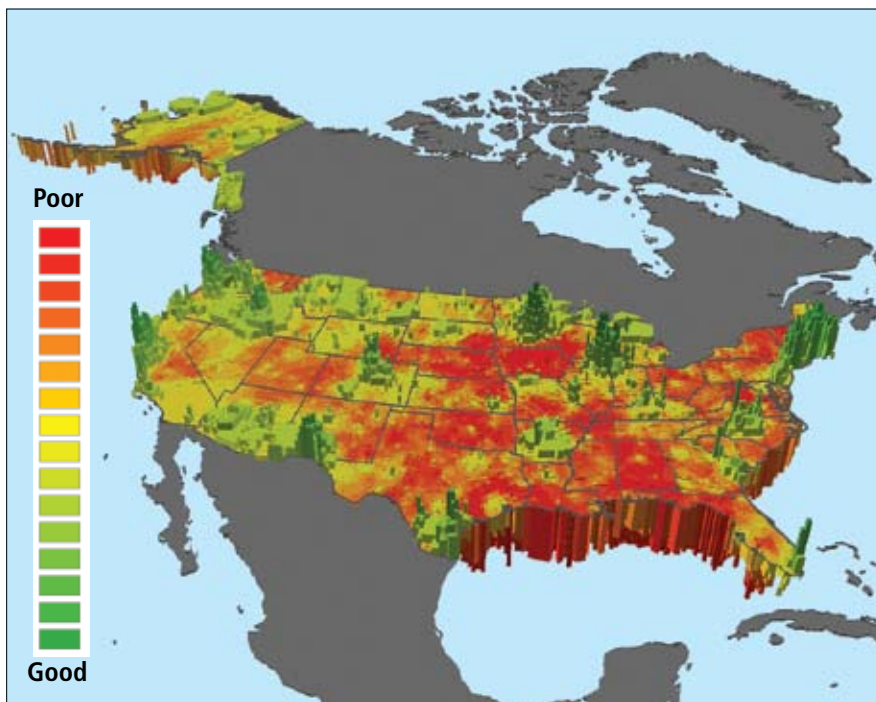
GIS offers many possibilities through which insurance companies can share, create, and compile information for wider use within the organization. Collaboration can occur across departments and software products. Spatial analysis can extend and support statistical analysis for better pricing and risk analysis. Maps can be embedded into other business functions and the result visualized in multiple ways. Tradecraft and expertise can be published by knowledge workers and consumed by others via the Internet, LAN, or desktop applications.

ESRI applications support a wide range of real-time information feeds, from geoRSS to Web services. Information from online weather services, storm warning notices, earthquake monitoring, and GPS-derived information can be embedded with in-field and corporately gathered data sources. Other static or more traditional GIS-style mapping services based on OGC Web standards, Google KML, or mashup environments can be used whenever required. This allows insurance staff members to gain the most valuable and appropriate information to support their needs and business requirements.

GIS is recognized by leading insurance industry analysts as essential for the decision-making process. ESRI has developed a full suite of software products that facilitate and enable new forms of analysis, modeling, visualization, and data management. ESRI GIS enables insurance workers to be connected when in the office or responding to crises in the field—and anywhere in between.

For more information on enterprise applications, visit www.esri.com/arcgisserver.

Map Fact: 3D Balance



3D Visualization of Insurance Spending and Risk (Source: Consumer Expenditure Surveys, Bureau of Labor Statistics, ESRI forecasts)

Beyond Boundaries

New Ways to Model Risk, Peril, and Policy Prices

Risk profile mapping is a standard practice insurance companies engage in to analyze their portfolios across various geographies and scales. Historically in the United States, insurers have only been using ZIP Code-level geographies to locate policies, assets, risks, and events on the map. Innovative European companies perform all their modeling using postal boundaries, which can be 20–50 times smaller than U.S. ZIP Codes (identifying a group of approximately 15 homes rather than thousands), and they use this information for their analysis.

Some have gone further, geocoding each policy with submeter-level accuracy and aggregating multiple policies when they fall in a single building such as an office block or multi-level housing unit. These companies also identify properties, such as warehouses, churches, and public infrastructure, that do not receive mail or have a traditional street address. This lets these insurers truly associate the risk and liability to the exact location at which it is underwritten. Insurers need to geocode to a rooftop, to the policy holder's postal address, rather than approximating the address geographically or accumulating individual policies that are spread out across a facility, city, ZIP Code, state, or even the entire county.

The Challenge

Insurers also need to combine and analyze other datasets and model their business and portfolio based on perils and risks. Many of these

valuable datasets are collected using different boundaries or are natural landscape features or physical phenomena that do not conform to human geographies.

Wind pools, floodplains, earthquake zones, and true patterns of crime are not easily definable within the postal units that are the mainstay of social and economic reporting. Insurers need to combine multiple datasets that don't easily mesh together. Boundaries don't fit, and reassigning or realigning everything to another set of boundaries will introduce major errors and inconsistencies that rapidly degrade the quality and value of other datasets.

The Solution

The insurance tools available to ESRI GIS users can easily overcome these problems. It gives insurers a wide range of tools through which to standardize data collected at different scales, in different geographies or formats. The data can be combined in a standard, consistent manner that increases its value rather than degrading it.

One concrete way to solve the problem of different geographies is to create surfaces that are grid based. By converting data into a regular grid, for example, one- by one-mile blocks, a new framework is created into which all the other datasets can be fitted. Each data layer can be converted to a grid, which can be thought of as a scorecard. Each value in the grid is a measure of the risks assigned to that area.

Different scores can be created for different

geographic areas and types of insurance risk. For example, risk from pollution declines as distance from the source increases. Flood risks vary by distance but are influenced by elevation as well. Other risks may be thought of as more consistent across an area.

ESRI provides a number of ways of assigning the score to each cell. Each cell that falls within the original geographic area can be assigned a score according to the risk. Inverse distance weighting classifies each grid cell with a score that is averaged and proportional to all the surrounding risks. A fixed or variable search radius can be used to count the incidents within a sphere of influence or area. A risk score based on a count of the number or density of events/policies within each cell can also be calculated.

Modeling Risk and Perils

Scores are assigned using special techniques that reflect the impact and interaction of those risks across different geographies. Risks can be redistributed based on distance searches or uniform division, constrained by statistical analysis or proportioned based on a gravity model. Geographic analysis can also influence the score based on the variation within and between different geographic units. Different spatial and statistical models, such as correlation, regression, and cluster analysis, can be used to create the scorecards, using corporate rules or quantified techniques.

Once each score is calculated, it can be standardized and overlaid. A total risk score can be calculated using many familiar statistical techniques. Commercial property insurance rates can now be calculated on a common basis that considers different risks to residential insurance or auto insurance. Any risk can be converted to a grid. This may consider not only where you live but also where you work. For auto insurance, a risk may be calculated based on traffic density, frequency of accidents, the type of journey, or proximity to other perils and risk factors.

ESRI's Location Hub—The Clear Advantage for the Insurance Industry

Supports automated analysis and decision making based on auditable rules and procedures

Operates at subsecond response times on a robust and dependable platform

Enables full integration into the business process and wider collaboration

Negates the need for a decision support solution as an appendage to the business process

Supports real-time or batch processing of a client's risk portfolio

Is fully scalable across departments, the enterprise, and remote offices

Replaces visual interpretation with quantifiable and replicable analysis

Reduces decision-making time and the likelihood of human error

Integrating Statistical Analysis

Insurers are familiar with statistical analysis and modeling based on tables and aggregation. GIS modeling uses spatial analysis to supplement and extend the statistical analysis familiar to actuaries and risk modelers. More and more insurance companies are becoming aware of the true commercial value of detailed geographic interpretation and risk information created by geostatistics. The challenge for these companies is to overcome the belief that geostatistical analysis is complex, costly, and cumbersome to implement and manage. In reality, it is merely a case of refocusing and extending the existing database-driven analysis through GIS. This analysis can easily incorporate business intelligence software and other database analysis systems. GIS moves insurers a step closer to having true customercentric business models.

GIS can more accurately calculate the risk profile for existing and future customers based on key metrics, detailed statistical analysis, and geographic distribution. Any peril or risk factor can be included such as storms, flood-

ing, forest fires, crime, theft, terrorism, or accident potential. Customers' buying habits and demographic segmentation can also be used to influence or weight scores.

Dynamic Pricing Models

The risk pricing surface is a balance between potential risk and an insurer's own business rules or sales goals. The company can introduce dynamic pricing models that accommodate different business objectives. Initially the focus may be on gaining more customers or outperforming a competitor, but as the portfolio expands, other objectives can be achieved. New policies or premium services can be targeted to a particular customer market. GIS analysis helps insurers develop a tightly focused product that can be more successfully marketed to individual customers based on precisely localized factors and customer habits.

Benefits

One of the major benefits of this targeted, highly segmented approach is that agents can give more accurate, attractive quotes to the customer

using fewer steps and questions. This reduces the costs of policy writing and increases success rates. Insurers can also ensure that the underwriter follows specific rules and operating parameters—escalating decision making for policies that fall outside the norm or ascertaining more information where required.

GIS is a powerful software tool that extends and enriches the analysis that insurers already perform. It allows them to distinguish themselves to their clients by more attractive and accurate prices and services while maintaining tight control of the premiums that are offered to clients. A number of insurers have already grasped the geographic advantage: in a business where others are underperforming, these insurers are succeeding.

For more information, visit www.esri.com/business.

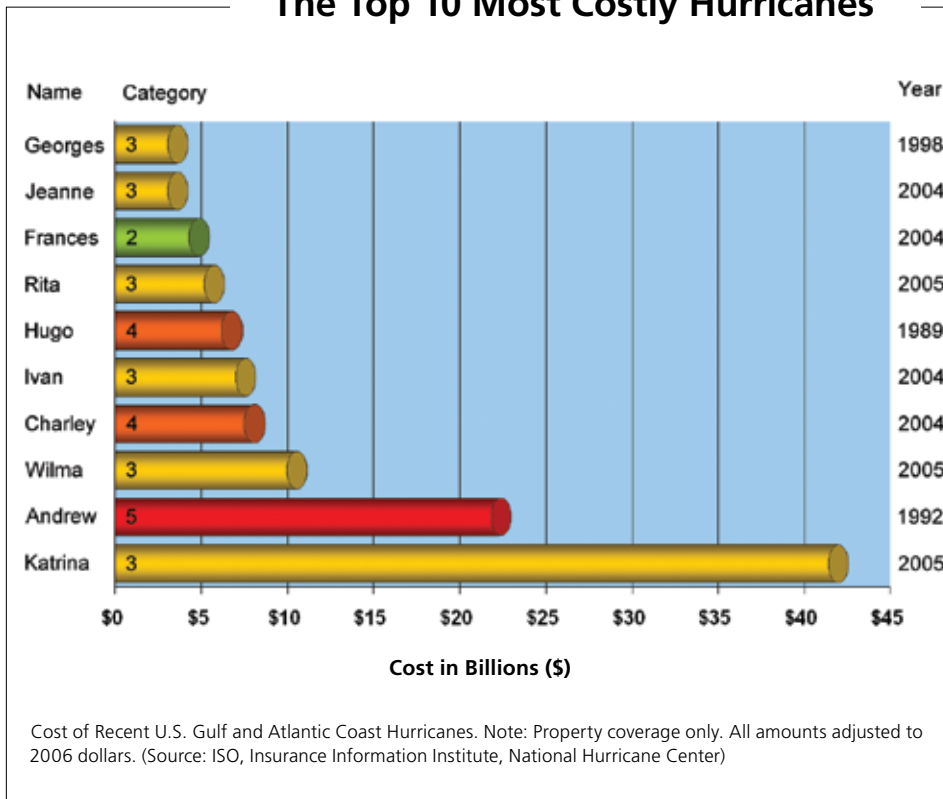
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Members of ESRI's commercial team provide strategic direction and leadership for business, insurance, retail, financial services, real estate, manufacturing, and media customers. We are looking for motivated individuals with commercial expertise who share our passion of growing GIS in this fast-paced and rapidly expanding market. Positions are located at ESRI's headquarters in Redlands, California, unless otherwise noted.

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- Business Development Manager—Commercial/Business
- Consultant/Project Manager—Commercial/Business
- Account Executives, Commercial Team

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The Top 10 Most Costly Hurricanes



ESRI on the Road

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www.dma08.org

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October 15–17, 2008
www.worldworkplace.org/2008

2008 IsoTECH

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November 9–11, 2008
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For more information, visit
www.esri.com/events.

Celebrate 10 Years of GIS Day!

Help celebrate the tenth anniversary of GIS Day on Wednesday, November 19, 2008.

To find help planning and putting on an informative and successful GIS Day event, visit the resource and registration Web site at www.gisday.com.



GIS Day provides an international forum for users of GIS technology to demonstrate real-world applications that are making a difference in our society. More than 80 countries participate in holding local events such as corporate open houses, hands-on workshops, community expos, and school assemblies. GIS Day is principally sponsored by the National Geographic Society, the Association of American Geographers, University Consortium for Geographic Information Science, the United States Geological Survey, the Library of Congress, Sun Microsystems, Hewlett-Packard, and ESRI.

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Mobile GIS for Insurance Applications

Better Decision Making and Information Gathering

ESRI's Tablet PC applications come with powerful data synchronization and validation facilities. This allows a mobile worker to preload information before leaving the office for the field or to synchronize data as required when mobile or over the airwaves when within network coverage. For example, an assessor may require additional information when on-site at a client facility. By connecting to the central server, more information can be downloaded or instructions sent back on how to more appropriately price and underwrite the policy.

Detailed instructions and requirements can be supplied to the in-field worker to allow the policy to be written and minimize risk for the insurer. Other recommendations and specific actions that mitigate the threat of future loss can be communicated to the customer: the insurer may want to have commercial goods raised off the floor if the warehouse is in a flood zone, special provisions may be noted to ensure vehicles are stored under cover in areas subject to severe weather events (hailstorms, etc.), or certain lines of business could be excluded because they exceed the insurance company's capacity to write that business.

Mobile Applications and ArcGIS Make Businesses More Efficient

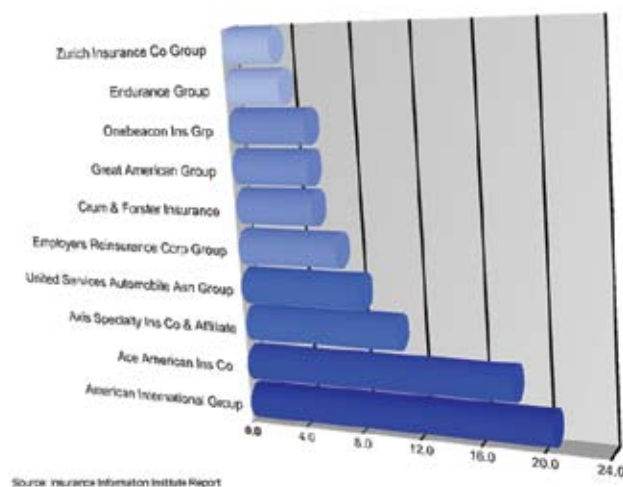
Better information interchange, especially up-to-date and more accurate information, can allow insurers to change their risk appetite. More accurate geocoding and ground truthing may identify more profitable areas where higher-grossing business can be written without additional risk or liability. More appropriate pricing leads to improved customer satisfaction. More detailed understanding of risk and liability translates to a greater ability to dynamically manage capital, reduce reinsurance premiums, and control accumulated exposure.

Mobile workers and field-deployed staff in utilities, telecommunications, government, agriculture, retail, real estate, health care, and many other industries have benefited from the enhanced functionality of a Tablet PC running ArcGIS solutions. For the insurance industry, mobile GIS is in its infancy but holds considerable promise.

For more information on running ESRI GIS on a Tablet PC and links to bundled hardware and software offers, visit www.esri.com/mobile.

2005 Market Share—Hawaii Earthquake Coverage

2005 Market Share - Hawaii Earthquake Coverage



ESRI's Community Tapestry Segmentation

a robust and compelling segmentation of U.S. neighborhoods. For a broader view of markets, segments in the 12 Tapestry LifeMode summary groups share an experience such as being born in the same time period or a trait such as affluence. Segments in the LifeMode summary groups also share life stage experiences such as completing educations, obtaining jobs, getting married, buying houses, having children, becoming empty nesters, or entering retirement.

Community Tapestry from ESRI identifies numerous segments whose residents indicate an interest in insurance policy products such as renters', homeowners', life, disability, medical, travel, and accident insurance.

Insurance companies can use the information gleaned from the Tapestry segments to target different customer types for specific products such as the following examples:

- Wealthy residents in the Tapestry Top

Rung, Suburban Splendor, and Boomburbs neighborhoods might be interested in life insurance policies valued above \$500,000.

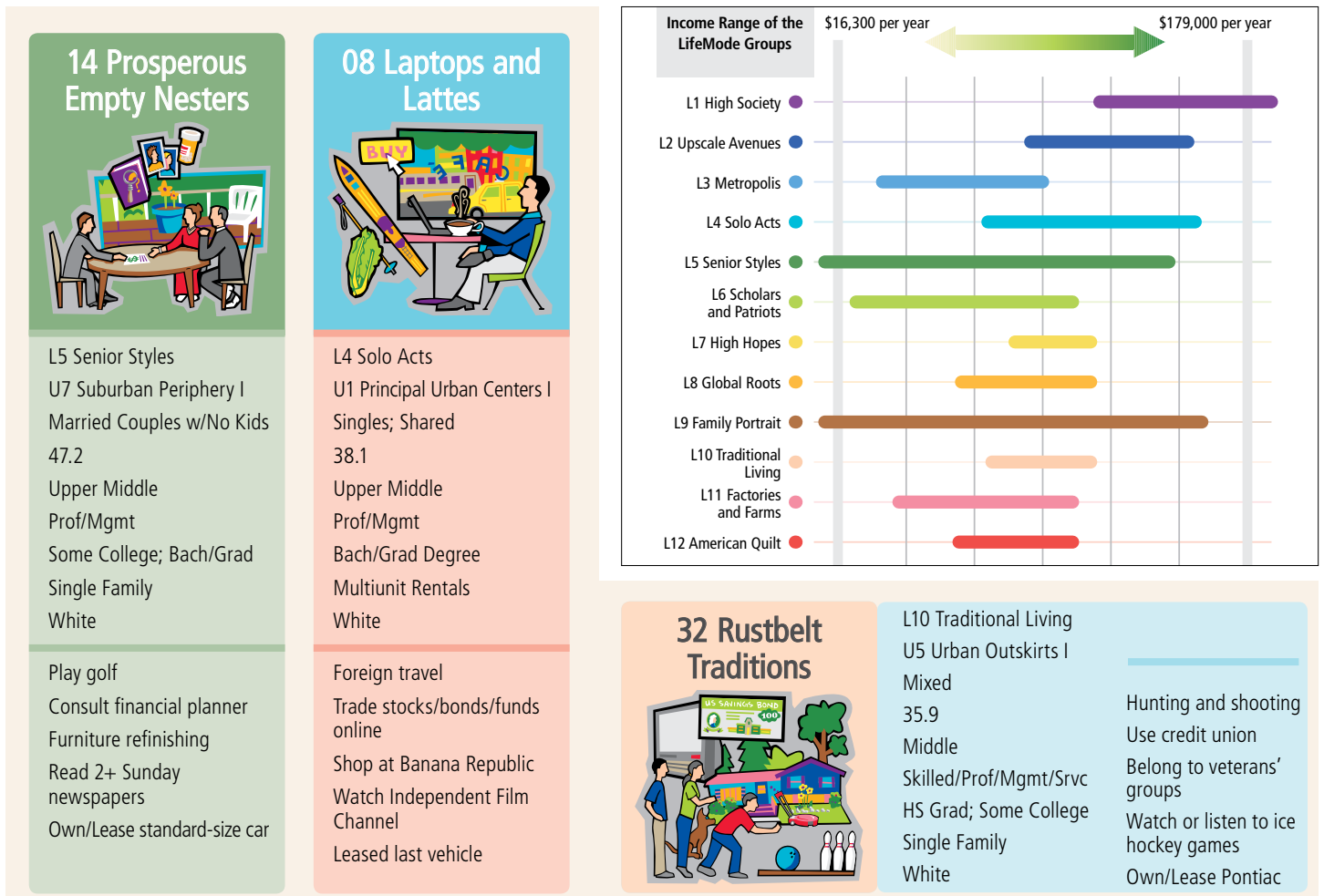
- Affluent singles in the Laptops and Lattes segment who rent are less likely to need homeowners' insurance policies, but would definitely be a profitable market for renters' insurance.
- Wealthy, active seniors in the Silver and Gold and Prosperous Empty Nesters segments are candidates to purchase travel, long-term care, medical, and disability insurance policies.
- Residents in the Rustbelt Traditions segment are anticipating retirement, own their single-family homes, and would probably be a market for variable life and homeowners' policies.
- People in less affluent Tapestry segments might purchase insurance products such as medical, health, disability, renters', or home/auto policies.

After product preferences are identified among

the customer types, Community Tapestry can also provide guidance on the best media vehicles to reach each segment and marketing incentives that will produce the best response. Customer types respond differently to various promotions such as coupons; direct mail; phone contacts; and newspaper, radio, or TV ads. Community Tapestry identifies the customer types that respond best to each category of marketing promotions, helping the insurance company optimize its marketing spending and campaign strategies.

The more an insurance organization knows about its customers, the better it can serve them, keep them, and find more like them. Because profitable customers are highly desired by all insurance companies, this knowledge is critical. Community Tapestry is a powerful tool for the sales and marketing departments of any insurance company.

To find out more about Community Tapestry segmentation, visit www.esri.com/tapestry.





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