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Virtual Earth: Seeing in a New Way

Easy-to-use interactive maps give greater clarity and insight into public-sector data.

www.microsoft.com/virtualearth/government

All governments have information they want to share with the public. But do citizens understand what governments are trying to say? Sending a message is pointless if the receiver doesn't comprehend it. To convey information effectively, many public agencies are turning to online maps. They're integrating data they already have with the innovative mapping features of Microsoft Virtual Earth. And the public is responding.

Much of the information that government collects and maintains is related to a location. And people know their way around a map. Presenting information through a Virtual Earth mapping application allows citizens to quickly find the information they need by viewing that data within the context of its location and surroundings. High-resolution aerial imagery and highly accurate geo-coding bring greater clarity with Virtual Earth maps, and

provide a better understanding of the information provided through citizen-services Web sites. It's often simply a better way to present government data.

"It allows you to take your business intelligence data, to plot it on a map, to help you better visualize that data, to gain clarity and insight on that data," said Jerry Skaw, public sector marketing manager for Virtual Earth.

Both private- and public-sector entities have built applications using the Virtual Earth platform. Virtual Earth can be integrated with nearly any data source, providing unlimited opportunities for customization. Presenting government data through the Virtual Earth mapping platform can improve internal data sharing and provide information in a manner that makes the data more easily understood, increasing Web site traffic.

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CASE STUDY

Better in Boston

Development projects around the city are easier to visualize with Virtual Earth.

<http://gis.cityofboston.gov/article80>

The Boston Redevelopment Authority (BRA) manages the review process for the city's construction and development projects. Before projects are permitted, they need approval from the BRA. Being involved in land use planning, economic development and construction, the agency handles a lot of information.

In its quest to make that information available to more stakeholders in the process — including the public — the BRA recently launched a map-based Web site that gives a unique look at current and planned projects.

The site is built on Microsoft Virtual Earth. With various search criteria, users can find an assortment of projects on the map. They can search by neighborhood, project type, project status and more. Once users find a location, they can see the parcel ID, address, description of the project, current status and several other types of information on either a road map, imagery or even in 3-D views.

"People love to be able to see the project on a map," said Carolyn S. Bennett, GIS manager of the BRA. "They like to see the information that goes along with it, the project report variables that we track."

Users find the exact information they want, such as square footage and other details. "They can get all the specs from the project reports, and it's right there on the Web site," said Bennett. "So it's a great way for people to see what's happening in their neighborhood and citywide."

Greg Knight, senior GIS applications developer of the BRA, said the agency wanted the site to present information in an easy-to-use format. "We think the Virtual Earth tool does exactly that," he said. "We didn't want people to have to learn complicated GIS tools to get to this data. We wanted it to be accessed in a simple way."

By putting data within the context of maps, the BRA aids the review process for city staff while also answering questions from the public. A lot of the answers are right there within the maps. It helps everyone get a better, quicker understanding of what's happening.

The BRA had a database and wanted to add a spatial component to it. Virtual Earth was the answer. "We liked the quality of the aerial photography," Knight said. "We really liked the environment."

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Virtual Earth provides several views for users, including 2-D maps and 3-D images. Satellite photography is complemented by high-resolution aerial imagery. Users can easily zoom in and out, and pan the maps or images in any direction. It's a highly visual and immersive Web experience.

Governments already use Virtual Earth maps in a wide variety of ways. For example, fire and police departments track incidents, personnel and vehicles. It's a great way for emergency response leaders to maintain situational awareness during an incident. "Anytime you have multiple users looking at the same data on a Virtual Earth map, it enables the sharing of data and collaboration," said Skaw.

Also, citizens can find polling places, parks and traffic information. They can learn the condition of the bridges they will cross. The number of uses for Virtual Earth grows constantly as government finds new ways to share information via maps.

IMAGE COURTESY OF MICROSOFT



Virtual Earth fits into Microsoft's Software + Services strategy, a new approach that provides government organizations maximum freedom and flexibility to meet their technology needs. "We're no longer telling you how you have to have your software delivered," Skaw said. "You can have it as a Web service model; you can have it as a desktop application; or you can have it as something that's hosted by your servers, or hosted offsite."

Developers find it easy to work with Virtual Earth's application program interfaces. The necessary tools are available online, and Virtual Earth readily integrates with an agency's own tools and data. For users, Virtual Earth delivers a powerful and intuitive gateway to the information they're looking for.

Traffic Safety Improved With Mapping

University of Alabama software analyzes crash data, integrates it with Virtual Earth.

<http://care.cs.ua.edu>

Can a database save lives? It can if it's a traffic crash database and it's used in the right way. The CARE Research & Development Laboratory (CRDL) at the University of Alabama analyzes traffic crash databases. The CRDL applies advanced analytical and statistical techniques to the data, helping make traffic safer in 12 states.

The laboratory is part of the Computer Science Department in the university's College of Engineering. It focuses on products to improve highway safety, homeland security, judicial management and law enforcement.

The Critical Analysis Reporting Environment (CARE) is the CRDL's primary software. Although CARE can be used on many types of data, it's most often used for analyzing traffic crash data. The CRDL also provides a software tool that helps government agencies pull the CARE functionality into Microsoft Virtual Earth. Analysts, law enforcement officers and others can better understand where and when crashes occur with the CARE data displayed on maps. They can then take steps to cut down on crashes.

"We're collecting coordinates from the crashes and citations," said Rhonda Stricklin, assistant research engineer at the CRDL. "Then we're mapping them against each other to study, in order to recommend future patrol strategies. If you've got all your crashes in one area and all your citations in another, you might change your enforcement pattern."

The CARE tool lets users quickly analyze data by various criteria, such as whether a crash was alcohol-related, what time it occurred, if it involved casualties and other factors. With Virtual Earth, it's easier for experts to spot patterns. The CRDL is beginning to work with police departments on changes to officer routing because of the crash data.

The CRDL is very happy with Virtual Earth. "The Virtual Earth engine has much faster rendering capability than any other products that we've used in a Web environment," said Matthew Hudnall, assistant research engineer at the CRDL. "The rendering engine is absolutely wonderful."

About 15,000 law enforcement users have access to CRDL applications. In addition to crashes, officers can use Virtual Earth to look up information on suspects, citations, addresses and more. It's a good example of how mapping can help law enforcement provide better service to the public.

Mapping Makes the Difference

Cities see big increase in page views once mapping features are added to Web sites.

The eCityGov Alliance is a consortium of nine cities in the Puget Sound, Wash., area. The cities work together to provide online services and information to residents, businesses and visitors.

The Alliance strives to develop new models for the way government works. It also develops methods for improving service delivery to citizens.

In addition to its home Web site, the Alliance has five Web sites providing services, with plans for two more. Two of the existing sites — www.nwproperty.net and the award-winning www.myparksandrecreation.com — use Microsoft Virtual Earth to create more powerful capabilities for users.

The parks and recreation site recently won its second Spotlight Award from the Washington Recreation and Park Association. The site offers map-based information on more than 300 parks, plus mapping and information on trails and facilities.

When Virtual Earth mapping capabilities were added to the site, page views tripled from 400,000 to 1.25 million per year.

The site is easy to use. The interactive maps deliver a wealth of information within seconds. Users can quickly find parks, facilities or trails. From the map, clicking on any location brings up a detailed description, pictures and driving directions.

"When we first started using Virtual Earth, we did a survey in each city, and we got great feedback," said Kimberly



IMAGE COURTESY OF MICROSOFT

www.myparksandrecreation.com
www.nwproperty.net

Kallinger, project manager for the eCityGov Alliance. "Everybody really liked it. All they wanted was more." Respondents suggested adding off-leash dog parks to the search criteria, for example, and that idea was implemented immediately. Next year, the Alliance plans to add special events and facility rental information to the site.

The other eCityGov Alliance site using Virtual Earth, www.nwproperty.net, helps users find commercial property for sale and lease. The mapping features make it quick and easy for users to find specific properties they might be interested in.

Although the eCityGov Alliance is focused mostly on customers, the regional approach helps the agencies involved too. "For the governments themselves, we can really help span the digital divide for the smallest of the small," said John Backman, executive director of the Alliance. "For example, Snoqualmie is only 7,500 people. Because we can share in the costs and make it proportional to their size, they can afford to have online services that they would never be able to afford otherwise."

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To find out how Virtual Earth can augment your business intelligence applications and customer-facing Web portals, contact a Microsoft representative at vearth@microsoft.com or visit our Web site at www.microsoft.com/virtualearth/government