HYDRO INTERNATIONAL INTERVIEWS CHRIS PENDLETON

The Thing about Bing

Bing Maps users will soon be able to look skyward from Streetside and see the stars and constellations. That is just one of the ways in which the Bing Maps team is creating what may turn out to be the coolest mapping technology yet. In the meantime, thousands of organisations and developers around the world are delivering rich imagery through the maps APIs and other technology from Bing Maps, the web mapping service that is part of the Bing suite of search engines. We caught up with Chris Pendleton, the Bing Maps technical evangelist for Microsoft, to find out more about the technology and specific uses for hydrographers and oceanographers in Bing.

What does your job entail?
As the Bing Maps technical evangelist, I educate users on using Bing Maps in both our consumer and platform experiences. Whether it's by writing posts on my Bing Maps blog, speaking at conferences or producing videos with industry experts, I find a way to increase the use of mapping in our everyday lives.

How did you get into this field?
After completing my undergraduate studies I took a web developer position with a small start-up called NetCreate Systems in San Diego. NetCreate built custom websites from the ground up and featured clients such as Intuit, TheScientist.com and AICPA.org. NetCreate also evolved a template-based website creation tool for enterprises, which attracted the likes of Ace Hardware, Herbalife and Shell Oil, to name a few. NetCreate was acquired by Vicinity Corporation, which focused on building store locators. Many of Vicinity's customers wanted the ability to control the franchise or the websites of brick-and-mortar locations, so the two technologies complemented each other. Post-acquisition, I was retained by Vicinity to run their Professional Services organisation where, as professional services manager, I oversaw customer application development. Soon afterwards, Microsoft acquired Vicinity. I managed the acquisition, overseeing the migration of Vicinity customers to begin using MapPoint Web Services.

What is most exciting about Bing maps at the moment?
Bing Maps has so many exciting things happening, but if I have to pick one thing I would say the Bing Map Apps. The extensibility of allowing different services to be mashed into Bing Maps is a great way to provide agile developer capabilities to our consumer site, which is now effectively a platform.

What is the major advantage of Bing Maps compared to Google Earth?
Bing Maps and Google Earth are two totally different approaches to mapping. Bing Maps is a cloud-based consumer website that gives users robust functionality, such as finding locations, visualising data, interacting with other users via Collections and getting routeing and local search information. Bing Maps also includes APIs that allows developers to create rich, map-based applications. Google Earth is client software that is installed on the desktop. Google Earth does stream much of its data from the cloud, however, its primary purpose seems to be software and services.

What benefits does Bing Maps offer?
Bing Maps has a wide range of data layers that continues to grow. A couple of things set Bing Maps apart. Firstly, it has the highest resolution aerial photography on the market. Microsoft manufactures the UltraCam via our Vexcel subsidiary and uses it for most of our aerial photos. This is the same camera Digital Globe will use to collect for the Clear 30. Secondly, Bing Maps offers oblique photography (aka 'bird's-eye'), photos captured from an angled lens that provides more context of the relevant area. Thirdly, Bing Maps offers a hybrid oblique view which overlays street labels that have been re-projected to work with the oblique angled photos. Finally, Bing Maps offers a rich Silverlight experience for both consumers and developers. .NET developers use their existing knowledgebase of .NET programming skills and easily create map-based applications.

What is the business model that Bing Maps is built on?
Bing Maps has a two-pronged approach to revenue generation:
The Bing Maps consumer site is based on an ad-revenue business model. So we're always apt to promote additional queries on our consumer site. The Bing Maps Platform generates revenue on a per-transaction, per-user, or unlimited transaction model.

How important are business-to-business partnerships and applications in making Bing Maps work?
The relationships we have today with our B2B customers are invaluable to us. The majority of Bing Maps use cases are generated by our enterprise customers. This is why we continue to innovate on the Bing Maps Platform, provide enterprise service-level agreements and 24/7 support. Additionally, on the Bing Maps consumer side, we look to our B2B customers to further promote their brands on Bing Maps

in the form of highlighted listings (branded map icons) and the recently released Bing Map Apps, which mash-in data to Bing Maps (as opposed to creating mash-ups).

Does Bing Maps offer business opportunities for companies in the arena of imagery, remote sensing etc?
Bing Maps is always looking for best-of-breed data to be a part of Bing Maps. We're very interested in discussing opportunities with imagery providers about their offerings; however, we will continue to push forward with our DG relationship.

What are the uses of Bing Maps for hydrographers and oceanographers?
At this point, hydrographers and oceanographers can use Bing Maps to visualise the placement of anything in the ocean. We provide precise placement of data points for GPS information from scientists in the oceans to allow them to easily map out important information they want recorded for future use. The way Bing Maps APIs are architected, any array of lat/lons can be passed in for graphically rendering pins, lines or polygons. If oceanographers are mapping out information with GPS they can export the GPX file from their device and import it natively into Bing Maps API. This makes for a simple way to render ocean information on Bing Maps. Additionally, oceanographers can import this data into a SQL Azure (for cloud-based architecture), and using tools such as the SQL Data Connector they can render GPS information on Bing Maps from SQL Azure (or SQL Server 2008), since it now supports spatial formats.

Are there plans already to include the bathymetry as well for the hydrographic community, such as the GEBCO dataset?
There are currently no plans to include bathymetric or hydrographic information as a native layer in Bing Maps. This doesn't mean we won't do it, but we haven't prioritised this type of data layer on Bing Maps. The trend I am seeing and where this type of information will likely make its way onto Bing Maps is via our Bing Map Apps SDK. We've published over 50 Bing Map Apps that allow developers outside of Microsoft to publish geo-data layers onto to the Bing canvas. We're seeing many GIS shops working on pushing their data to the cloud so it can be rendered onto web-based applications however, more importantly is that this data will become additional layers on Bing Maps.

Are there tools in Bing Maps for scientists or users to share marine information?
There are sharing features native to Bing Maps. Today, scientists can upload GPS information to Bing Maps by importing that information into a Collection (now called 'My Places'). These collections can be made private or public, but can be shared via URL with anyone. If the Collection is marked public, it will be indexed into Bing and made available for anyone searching for keywords similar to those associated with the GPS upload. Additionally, the Bing Maps Platform is an extremely flexible way to build applications feature marine information. Users can overlay tons and tons of hydro data and build custom interfaces which would allow users to do pretty much anything they want including, but not limited to, contributing to data sources, viewing multiple data layers and sharing data with the great scientific community via the web.

Could Bing Maps contribute to the safety of life at sea of mariners and marine life at this very moment?
Bing Maps is already contributing to saving human lives at sea. The Bing Map App 'Piracy Watch' has garnered the attention of governments around the world because of its usefulness in visualising, tracking and reporting pirate attacks on the high seas. This information has become invaluable for mariners and security forces to identify and track pirate attacks in an effort to steer clear of dangerous waters. Marine Life is something our Microsoft Environmental team is watching carefully. They're considering ways in which Bing Maps can be used to monitor global warming, migration patterns and undersea food production. I'd like to see this evolve into something that provides real time monitoring in order to ensure the continued growth and evolution of sea life.

Describe the work you are doing with Eye on Earth
Eye on Earth is a Bing Maps Platform customer. They're integrating the Bing Maps Platform into their Eye on Earth website to better visualise water and air quality around Europe. The water and air quality data is being stored in Windows Azure and overlain on top of Bing Maps.

What developments lie ahead for Bing Maps?
There are many things we have planned for Bing Maps. Specifically, mobile is a super exciting field for location, and the release of Windows Phone 7 Series with native support for Silverlight especially excites us, since Bing Maps gives an enhanced experience using Silverlight. Also, expect new ways to visualise information on the map. We have recently announced that Microsoft Research's Image Composite Editor (ICE) will natively publish to Photosynth. This means users can now create rich, high-resolution panoramas and publish them to Photosynth and since Photosynth feeds geo-located synths into Bing Maps natively, these ICE panoramas will appear on Bing Maps.

(This is an adjusted version of an interview that was [published in the August issue of GIM International](#), a sister publication of Hydro International.)