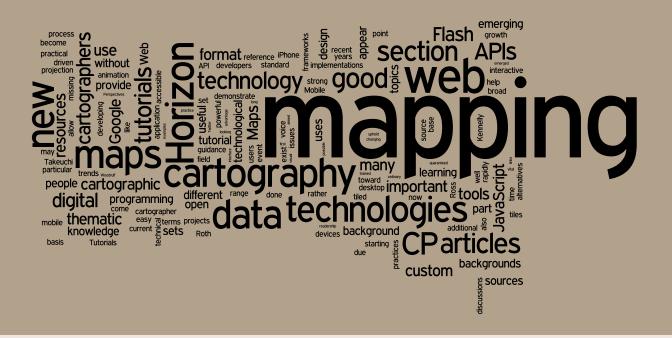# Introducing "On the Horizon"

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As *Cartographic Perspectives* enters the era of digital distribution, the journal stands in a unique and favorable position to promote valuable guidance in good cartographic practices with the mapping technologies that are now flourishing. Building upon the knowledge of the history, theory, and practice of cartography that *CP* has so well represented over the years, "On the Horizon" will appear as a regular section featuring articles and tutorials on current and emerging technological trends. Combined with that strong background in cartography, step-by-step tutorials and examples are powerful learning resources, whether they simply demonstrate how to use some particular technology or propose innovative uses of new ideas and developments.

The first two digital issues of *CP* (Numbers 64 and 66) included articles with tutorials setting the precedent for this section: Roth and Ross (2009) on event animation with the Google Maps API, Woodruff (2010) on panning and zooming with Flash, and Takeuchi and Kennelly (2010) on mapping applications for the iPhone. These articles are representative of the type of material this section will present. We are looking for complete, self-contained tutorials rather than sets of tips and tricks, and we plan to take advantage of the digital format to include source files and links to web resources. The new digital format will allow additional embedding of resources and media.

With open access to this section, *CP* has an excellent opportunity to play an important role in emerging, highly technical mapping, especially on the web. In one capacity, it can be an interface between sometimes disparate groups: people from programming backgrounds developing and implementing new mapping technologies, and people from cartography backgrounds incorporating new technologies in their work. The recent explosive growth in mapping technology not only has been driven by developers, but also tends to result in products aimed at developers, not cartographers or end users. "On the Horizon" can help lower barriers to entering emerging technologies by explaining these to cartographers in useful, practical terms. With explanations and tutorials accessible to anyone, it can become a reliable resource for mapmakers beyond the core *CP* readership. The quick path to publication permitted by the new format assures that articles and tutorials will appear with the timeliness required in a rapidly changing technological field, without a lag during which an article's relevance might decrease or specific steps in a tutorial become obsolete.

Equally important is the background and credibility *CP* can give to implementations of technology presented in this section. *CP* has a strong tradition of blending scholarship with practical mapping, something that "On the Horizon" aims to uphold. The cartographer's voice is missing from a lot of web mapping, and a potential risk is that more and more mapping will be driven by technology rather than good cartographic practices. "On the Horizon" can help *CP* raise its voice in this important conversation. Not every tutorial needs to come from a traditionally educated and trained cartographer, but its appearance in these pages comes with the understanding that it has some basis in the accumulated knowledge and wisdom of the field of cartography and that it was written with thoughtful purpose. Between *CP* authors and readers, it is guaranteed that articles and discussions here will be geared toward demonstrating the use of new technologies for sound cartography.

"On the Horizon" can cover a broad range of technological topics, from brand new tools to more efficient uses of existing technologies. There is no predefined set of topics, but a few avenues come to mind as being important current trends in digital cartography that will be worth addressing in this section:

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JAVASCRIPT MAPPING

The Flash platform, with its vector graphics capabilities and powerful scripting language, has long been a good choice for interactive maps. In recent years, viable open source JavaScript alternatives have emerged, in part due to missing Flash support on some mobile devices. Frameworks such as OpenLayers (http://openlayers.org/) and Polymaps (http://polymaps.org/) have simplified custom JavaScript mapping; however, the process remains inherently less visual than many Flash projects and carries a steeper learning curve for people without programming backgrounds. Tutorials in "On the Horizon" will reach cartographers of all stripes and provide starting points for JavaScript mapping and some particular frameworks.

TILED BASEMAPS

Many web mapping frameworks appear to be moving toward a standardized format that uses tiled raster base maps. The maps consist of a tessellation of 256-pixel square tiles at different scales in the Mercator projection, such as exist in Google Maps, and increasingly form the basis of interactive thematic maps on the web. Several tools such as TileMill (http://tilemill.com/) and scripts and plug-ins for familiar mapping and design software have made designing custom tile sets relatively easy, but there is certainly room for more guidance on how to create and implement these tiles. Importantly, "On the Horizon" can provide a venue for the effective use of tiled base maps, or even alternatives, for thematic web mapping. This is a standard that grew out of reference mapping and carried less-than-ideal characteristics, such as its projection to thematic maps. Demonstrating the application of good thematic mapping principles is vital to the continued growth of web mapping.

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MOBILE MAPPING

Mapping and location-based services for mobile devices are a distinctive subset of cutting-edge cartography, as they can involve different technologies from those used in ordinary desktop web mapping. Takeuchi and Kennelly (2011) have provided a tutorial on making an iPhone mapping application that serves as a beginning point for users without a programming background. Mobile mapping also provides new opportunities and constraints for design and interaction that do not apply to desktop and web mapping, such as touch interfaces that allow a different set of interactions from what is possible in, say, Flash.

WEB MAPPING APIS

Web mapping APIs like Google Maps perhaps have entered maturity now, permitting standard map displays and interactivity as well as customization, and they are an easy starting point for developing many web maps. Web resources such as the Google Maps API documentation itself provide good introductions to basic mapping. Where "On the Horizon" can contribute is in showing how to use web mapping APIs and build additional custom functionality for more advanced cartography, as Roth and Ross (2009) have done with event animation and Peterson (2008) has done with choropleth maps. Meanwhile, articles of this nature are mindful of the cartographic limitations of some mapping APIs, wherein basemap design is constrained or fixed, data are privately owned, and the maps themselves are subject to certain terms of service—issues that may restrict the most useful implementations.

BIG DATA

A large part of any cartographic workflow is acquiring data, and there exist some massive, freely available data sets on the web that may be useful

in a broad range of mapping projects. For example, reference data from OpenStreetMap, demographic data from the U.S. Census, and social data from sources like Twitter and Flickr are the subjects of many and varied maps. Some data are accessible through APIs, and some tools simplify the process of retrieving and sorting through data from huge sources. Tutorials on such tools and APIs and on custom solutions will further open these data sources to cartographers.

As section editor for "On the Horizon," I look forward to receiving articles on, and learning from resulting discussions of, the above topics and many more. It is an exciting time to be a cartographer. This is in no small part due to rapidly advancing technology, but at the same time the complexity and vastness of said technology can be overwhelming. It is my hope that "On the Horizon" will facilitate the exchange of technical knowledge within the cartography community; demonstrate how new technologies can assist good cartography; and show how new cartographers can utilize good technologies.

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