

OGC's column for the February, 1998 issue of GIS World

## **Building Tomorrow's Invisible Infrastructure**

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In the December issue, GIS World's Advisory Board offered their visions of the future. We at OGC found it curiously both heartwarming and humbling -- heartwarming because every expert's vision reflects the unquestioned assumption that transparent network access to heterogeneous geodata and geoprocessing resources will become a reality before 2008, and humbling because only one of the 21 experts (almost half of whom are OGC stalwarts) mentioned the OpenGIS Specification that makes it all possible. (Thank you, Preetha Pulusani of Intergraph.)

While visiting colleges recently with my 17 year old daughter, we stopped at beautiful Hamilton College in upstate New York. I spoke with the college historian to see if there was any record of the fact that Harry Peters and his employees built many of the college buildings. Harry, my great grand uncle, raised my orphaned grandmother, his niece. The historian took the time to research it, and he sent me a letter saying he couldn't find any mention of Peters.

That's how it is when you build infrastructure. Not only does successful infrastructure often disappear into the background, used unconsciously by those whom the infrastructure has raised to a higher level of existence, but the builders are largely forgotten.

But the infrastructure of distributed geoprocessing is still under construction, and some of those who would be raised to a higher level by the OpenGIS Specification need to help build it. This is a community project, after all, and there is much work left to do.

The builders of microprocessors and computing platforms bless and curse us with their staccato generations of product. We must like this fast pace and rhythm or we wouldn't keep paying for it, right? But it is destabilizing, because there is no end to the obligatory making and buying of upgraded products that depend on the shifting platforms. In the GIS market, there is a large contingent of public sector government users who are particularly hard pressed to find resources to stay in the dance.

OGC was founded to help both users and producers of technology. The OpenGIS Specification establishes open, common interfaces that will have a long life span. Software that employs these interfaces will be able to exchange data and service requests with other software that employs the interfaces. The OGC Technical Committee arrived at a good way to maximize this interoperability even between the disturbingly dynamic and dissimilar distributed computing platforms.

The consensus process gives everyone a chance to advance and influence the specifications. The formal, open, well documented process yields predictable product life cycles and predictable procurement cycles. It works for vendors because the vendors benefit from sharing basic R&D costs, and standards expand markets. Invention doesn't stop -- the standards support those innovators who would chime in with Thomas Edison, "I don't want to invent anything I can't sell."

On the user side, the best modern procurement policies, as exemplified by the recent Clinger-Cohen Act, stress the importance of procuring modules that connect with other modules through standard interfaces. There is also the opportunity for users to “legislate” into existence the technology and the kinds of interoperability that they need. The scope of these efforts can be general, (OGC’s “core technologies” which are applicable across applications); or specific (OGC’s “domain technologies” which are applicable within a particular application area, such as telecommunications or transportation.)

The GIS World Advisory Board’s omission is not disheartening because the consortium is healthy and good work is getting done. New members and old members -- commercial, government, and university -- roll up their sleeves and do what needs to be done. Scores of work items are getting checked off. To list just a few examples from the December Technical Committee meeting: Mike Ruth of SPOT brought in information to align OGC’s spatial reference system with the European Petroleum Survey Group (EPSG) geodesy tables. Arliss Whiteside of GDE added to the growing and maturing Metadata portion of the Abstract Specification. Ed Runnion of Camber Corporation wrote a section on Well Known Binary Representation for Geometry.

OGC was conceived as an entrepreneurial approach to a very big problem. It has evolved, creating by consensus a future-oriented system that meets a connected set of technical, market, and institutional needs. There is recent new input and participation from federal public sector agencies, and growing interest among state and local public sector agencies. The Federal SIG, Public Sector SIG, Telecommunications SIG, WWW Mapping SIG, and other SIGs provide opportunities for these special interests to draft and review white papers and ultimately create new specifications and related business models. History may little note nor long remember what transpires here, but those involved know that this is real infrastructure building, less visible but perhaps even more durable than Harry Peters’ buildings.

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