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Catching the Boat on the Second Pass Through

When geographic information systems first started being known by that name, shortened to “GIS” to eliminate seven syllables and twenty-five characters, surveyors mostly considered them very little, if at all. Back then, many equated the concept of data layers to using a light table to see if things “kind of fit together,” with the same kind of slop one would expect from overlays slipping and different survey accuracies misaligning. As The Keepers and Protectors of Accuracy and Precision, we surveyors thought of GIS as a bunch of quick flashy mapping techniques with little substance or reliability. A few surveyors found niches working with GIS designers to build quality into the base mapping over which other GIS data layers would be draped, but mostly GIS was ignored as nothing that surveyors would be interested in. We barely waved at the GIS ship from the comfortable shallows of our familiar practices as it passed by us.

After a few years, it became obvious that this technical phenomenon was not a passing fad. But instead of trying to swim out to catch the boat that was rapidly leaving the dock, the reactionary backlash was to try to rein in the practice of GIS. Some states passed legislation specifying that only surveyors could perform the base mapping for a GIS. People who were only peripherally aware of GIS operations and capability thought that this boiled down to a turf war, and that surveyors were trying to legislate who could push the buttons on



the computer to find the best route for pizza delivery. We did very little to win them over, missing a chance for public relations and business expansion.

When finally a number of government agencies and organizations learned that “quick and cheap” did not equate to “useful and reliable” in the design and data population of their geographic information systems, surveyors gained another chance to be part of the GIS world. But many still do not want to do anything other than the kind of work they have always done – yet they still complain when their traditional markets slow down or stop. Meanwhile, GIS is here to stay. And its infiltration into more sectors of society translates into a rapidly growing demand for greater spatial accuracy and more spatial

information. Why are we not hailing down the ship as it rounds the bend in our direction once again?

Our various clients have long asked us for digital data, and we have been providing it to them. GIS folks may refer to our work as “spatial information,” but it is the same data we have provided since the first surveyor reported a measurement to the first client back in the rope stretcher days. Drawings and plats are forms of imagery; geospatial reference and control identify where in space a site is located; data attributes are the names identifying what it is we report (iron pin, 36-inch diameter oak, water valve, intersection of Main and East Avenues); metadata is the record of how, when, and under what conditions the information (digital or otherwise)

was collected. There is nothing dramatically different between surveying for our traditional clients and surveying for GIS data requesters. So why are we not doing it?

Perhaps it is fear: fear of looking “dumb” for not knowing how GIS software works, fear of possible failure, fear of turf loss (“All that property information out there for free? I don’t think I want to do that!”) But as older or more fearful surveyors retire and leave the profession, younger and differently educated surveyors are diving right into the GIS market. Those of us somewhere in the middle between “older” and “younger” can also seize the opportunity to service the demand for GIS-compatible data.


We should consider every measurement as an entity in a relational database, rather than part of a single drawing. As positional accuracy of a point improves, the location of all associated features must remain coincident with that point, allowing us to update specific measurements and accuracy levels while not discarding valuable

information already collected. (Currently this is possible in CAD but not necessarily in GIS.) Such an approach improves the cost efficiency of managing a GIS while opening up markets for surveyors as “updaters” of the controlled, highly accurate GIS data that is the framework and backbone of a strong geospatial system.

Surveyors should remember that GIS is not just about making maps and pretty images. The attributes and metadata may, in fact, be of greater use to some GIS practitioners than the system’s querying capabilities. Attributes and metadata are definitely useful to surveyors: providing tax parcel identification, linking to deeds, or identifying objects on a map. We need not be data manipulators to be part of the geospatial workforce. But we should be familiar with the uses GIS can fulfill – for ourselves as well as for our clients.

Let’s remember that we can also use GIS in our own businesses. At a minimum, we can use it to ensure that the digital files from our CAD systems will translate properly into GIS software.

But we can also use GIS in project management to track the various phases of a job, as a decision making tool in allocating and managing resources (both human and financial), and as an organizational tool to integrate the information from multiple projects into a single system from which we can extract digitally connected images, field observations, and research records.

We have always been part of the geospatial workforce, whether we have identified ourselves that way or not. URISA’s recent Geospatial Workforce Report identified workforce characteristics as flexibility, spatial problem identification and solving abilities, knowledge of computers and information science, and a willingness to spend one’s career in a nearly continuous learning mode as technology advances. That sounds like the description of a good surveyor! So when we overcome our fear and/or mistrust, a mutual respect for the other parties’ expertise and attitude can make the working relationship remarkably satisfying. We just have to make sure we don’t miss the boat again. 

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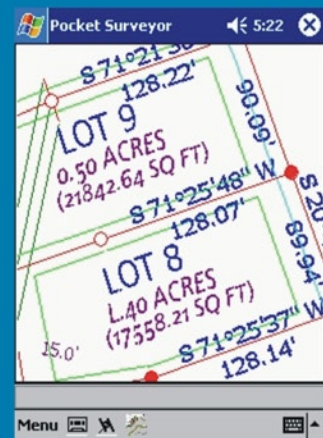
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