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Real Estate Deals in the GIS and Data Universe

By Jim Klein, SIOR

Good technology improves real estate deal making—this is no secret. In this article I will go into my experience with Geographical Information Systems (GIS) and how it has become a fundamental tool for my business. At its simplest, GIS programs are a visual adjunct to database and contact management programs. However, if used to its fullest, GIS can crystalize multiple property relationships to monetize real estate information by traditional forms of deal making, solve complicated problems, and create new business models.

Today, in the traditional real estate industry, retailers have taken the most advantage of GIS programs by making strategic location decisions. On the other end of the spectrum, and outside of the commercial real estate business, new location-based tech companies, such as Yelp and FourSquare use this geolocation data to build profitable, mobile enterprises.

To put mapping in its proper technological perspective, consider the furor when the iPhone tried to replace Google Maps with its own inferior Apple Maps. Mapping has not only become ubiquitous in everyday life, it should be an essential part of every real estate business.

Contrary to what many may think, creating robust GIS applications has never been easier. There are inexpensive open source programs, numerous sources of excellent data, and many ways to host and share applications. It's easy to connect to other good mapping programs through Application Programming Interfaces (API) and Web Map Services (WMS). When used together they create powerful mapping programs.

Is this perhaps a little too technical? I'll take a step back. There are now graduate level GIS programs being offered in 160 universities teaching great consultants to adopt mapping technology to your everyday business life. GIS is used in all sorts of industry and government departments to make critical business and marketing decisions. Hedge funds and financial institutions are using GIS and data warehouses as a backbone to trade mortgage backed securities and real property assets, hopefully more prudently than they did in the past.

GIS combines spatial data or geographical information with non-spatial data, such as market information (comps, tenants, owners, etc.). Many of us simply keep market data in our heads or in very basic databases. Few of us use complex algorithms to tackle complicated market problems as programming languages are not usually part of our vocabulary. Yet there are computer scientists that are using the entire universe of property and geographical data to crunch the numbers and create very lucrative real estate businesses.

The most obvious examples of companies using universal property data are information providers that many of us rely on for our daily work. For instance, CoStar, NAR, Niteowl, and Xceligent all have products that combine data servers and mapping capability. There are other firms like REIS or Real Capital Analytics that collect property data for extensive statistical, reporting and analysis purposes. The question is how can we better use data analysis and mapping tools in our daily business?

My endeavors into the GIS foray involve an application called MAPP, designed for the way I work. Because my biggest deals have been finding "off-market" development sites, I've created a very simple GIS program that is able to identify infill land and older teardown buildings. In other words, I have designed a program to meet a set of customer objectives by identifying and segmenting various property data from the entire universe of possibilities. It's one area where GIS is uniquely capable.

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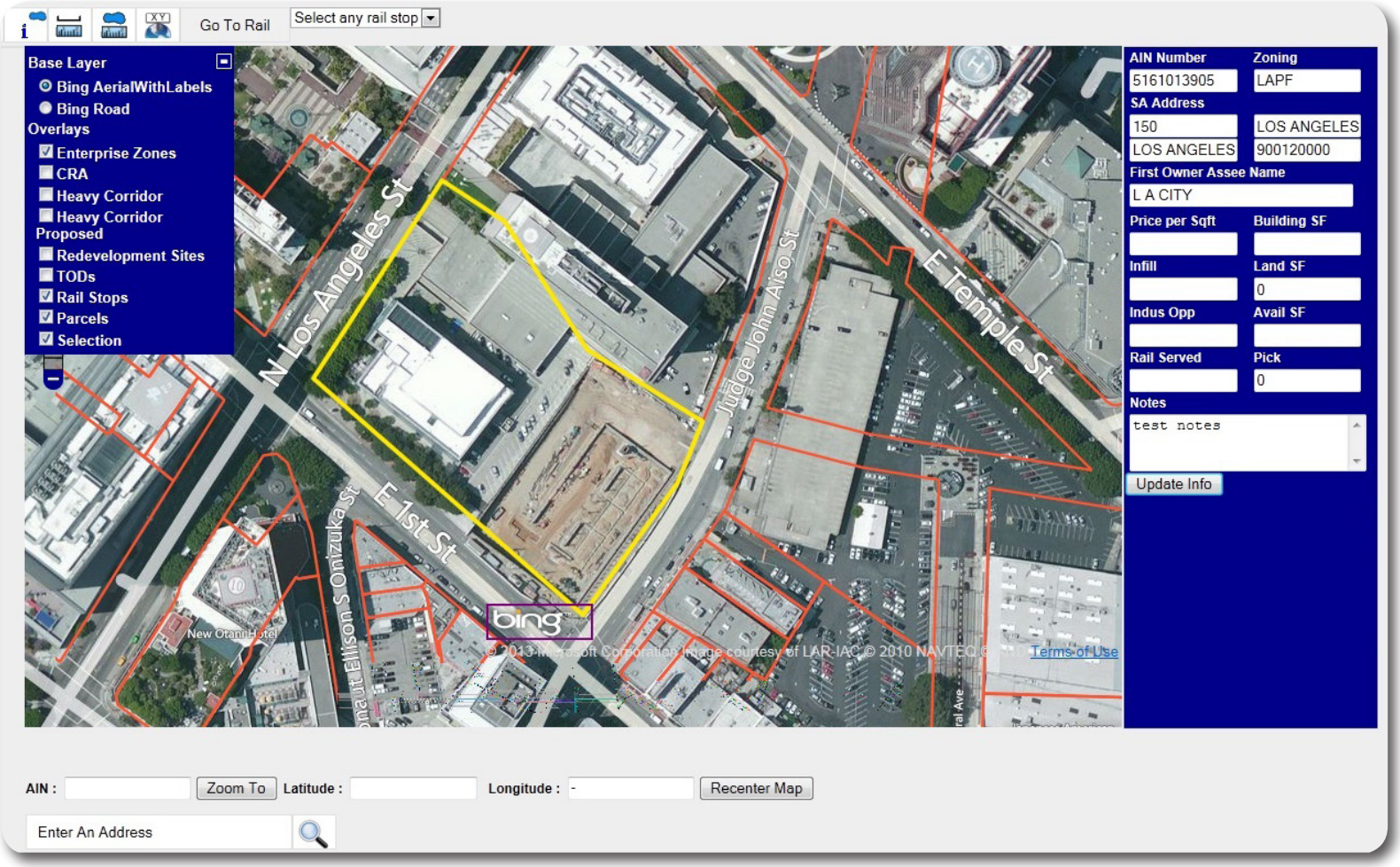

One concrete example of this is a case where I sold multiple properties for self- storage development over a several-year period. The majority of sites were "off-market." My MAPP program allowed me to match all other existing self-storage properties owned by competitors on the same map so we could immediately create a trade area of the entire universe of self-storage buildings and instantly see "off-market" locations that had ideal spacing. By querying the owner database I created a target list of likely properties that resulted in deals.

A more recent example involves a customer who purchases underdeveloped land near light rail stations. By writing a basic radius query that identifies all property within 500' of a rail stop, I have identified and sold several sites. My next goal, in keeping with economic recovery, is to put the application to use by identifying large buildings in and outside of my traditional market to see if MAPP can locate ideal purchase opportunities.

GIS has its own intrinsic logic that answers questions about location and property data. If you have the right data sets, you can write a query much like an algebraic equation. Here are a few queries I have used:

- Compare warehouse locations based on how much fuel will be used for customer deliveries.
- Return a list of every large warehouse on a BNSF line that is within five miles of the Port of Los Angeles.
- Search for corporate owned Brownfields in the final stage of a work plan.
- Name every non-institutional landlord who owns buildings larger than 200,000 with extra land.

All these queries can be answered manually, but by writing a little code for GIS logic, the answer is fast and thorough.

So now let's get into the "how?" I started my odyssey with an open source program called Map Window. The program originally resided on my local computer. I hired a GIS expert I found on Craigslist and an offshore database programmer. Parcel and ownership data is available for purchase from most counties. Municipalities offer shape files that depict all forms of urban infrastructure including rail, utilities, zoning, and geographical features. I have since migrated the system onto a web server so the application is cloud based. The data I collect runs on a MYSQL server that runs independently from the map program. Because I use open source software and hire programmers located mostly in southern Asia, costs to build and maintain the program are modest.

While the technology part is important, the ability to create a specific environment around map information and to provide a solution for the customer has been the greatest benefit. Problem solving and collaboration create strong relationships. Perhaps it's no surprise that most clients are not very interested in using or understanding the MAPP application, they just want to see the selected reports and deals that can be generated. And that's fine by me.

Even though I've been developing my MAPP program for several years, I'm only just starting to learn. GIS programs can be used to collect, analyze, and deal with the world's property data in sophisticated ways. As more people begin to realize how relatively easy it is to build, I expect GIS will also start playing an important role in your business. Because GIS is part of a large user community, I look forward to helping others as they have done the same for me.