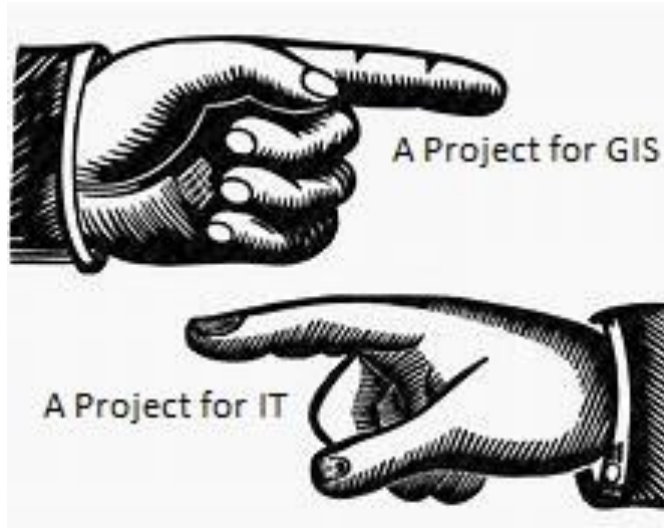




## **Making Money by Filling in the Data Gaps with Geospatial, Document Archive & Business Data Integration.**

About 20 years ago the Master Data Management and Geospatial Data Integration Layer have completely disappeared under the list couple generations of IT and GIS management. When interviewing GIS management about their enterprise data integration layer (*32 interviews over 2 years*) 26 of the managers would point to their ESRI platforms that were integrated with other business applications like SAP and Maximo, or they would point to specialty applications that added spatial data to an asset management, document management or business suite like Cityworks, MGMS or Accela Civic Platform management. Only 6 GIS managers I had interviewed understood the difference between Enterprise Application Integration (EAI) and Enterprise Data Integration (EDI). Most GIS managers at the time thought they were the same thing. I posed a different set questions to IT managers at those same municipal agencies about GIS

regarding relative accuracy vs positional accuracy, topology, etc. and the maintenance of such standards. Most of the IT managers plainly said they did not know because that was the domain of the GIS department. So, my question to both was, "[Whose responsibility is it to integrate the geospatial, line-of business and document archive data and distribute to all their management and staff?](#)" The answer I got was the old tier point exercise.

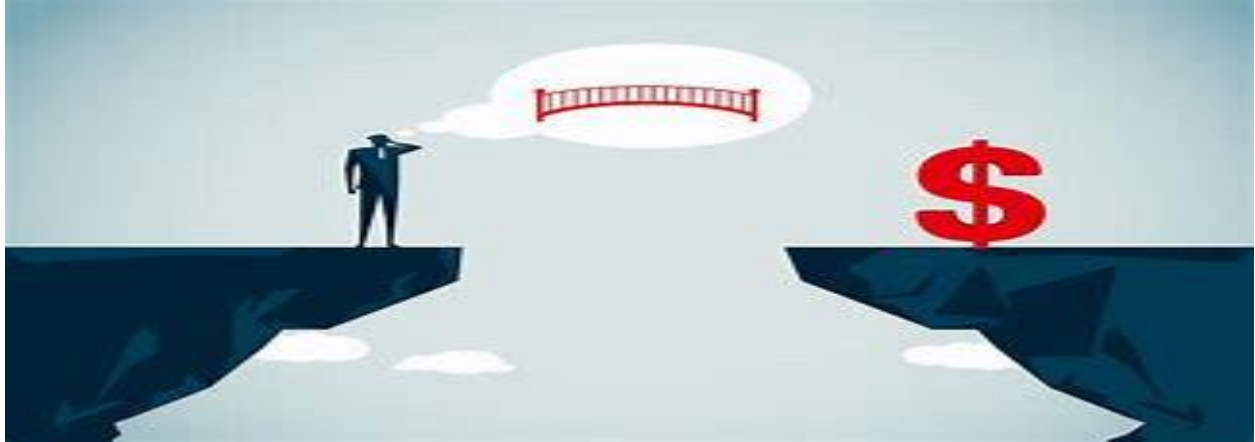


This is to be expected today. Most IT departments over the years have lost the people with the skills to develop large enterprise database applications (C++, Java, C#, Delphi). As for GIS, building enterprise database applications is generally not in their purview. Today Municipal GIS is almost exclusively ESRI platform driven. The large GIS platform

technologies are not meant to provide enterprise data integration across departments and functional groups. It does not mean it can't, it means they are top heavy, expensive to scale, and would require multi-vendors, ActiveX controls or vendor runtimes to integrate document archive management, geospatial and line-of business data. Keep in mind you want this to be as ubiquitous as Microsoft Office. [For the context of this discussion let's assume a user base no greater than 500 personnel and a "Development Team of One"](#).

**If you are a "Development Team of One", How do you bridge this gap and not lose your ass in maintenance costs, bug fixes, and deployment issues?**

**How do you know if the "geospatial, document archive, and line-of business integration" are worth the effort?**



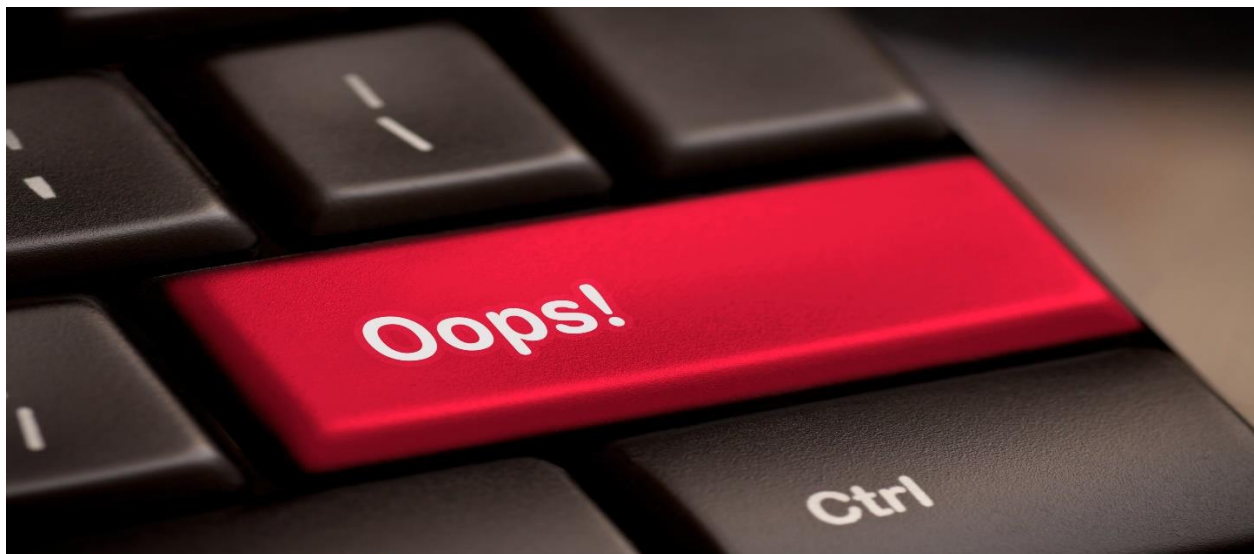
**One must build it to find out, and to answer the question of worth or "ROI" it needed to be built from the inside of municipal & local government.**



<https://www.youtube.com/watch?v=THDz4HXunw4&feature=youtu.be>

**To the Consultant :** I would strongly suggest that one does not build this on the clients' time as a consultant. I personally had to research this in 2 steps at two different agencies as a municipal employee. Failure was almost guaranteed with my first effort as GIS manager at a municipal water district in San Diego. The technical implementation went great, but I did not anticipate the political fallout from making data across departments available to everyone. In a nutshell, the data culture was one of ownership. Department heads and managers did not appreciate the daily work of their departments being exposed to other managers and department heads. (Personally, I think that is ridiculous, IT IS THE AGENCY'S DATA NOT YOURS!!!, you can see where I had the trouble) But if the culture was set and I did not take that culture into account. I naively thought, once they see how this works, they will get it. But they did get it, I didn't. By breaking down the "data silos" I was eliminating domains of control. A few managers refused to let the software be installed on "their computers".

This particular project had a \$3.5 million budget over 5 years. The project finished ahead of schedule and under budget by \$236,000. The successful 1.6 million data creation effort was a booming success thanks to our consultants. But politically it was a complete failure, and it was no one's fault but mine. Just focusing on technical success led me to failure. So, I pressed the button below:





The engineering department head was my boss, GIS at this organization was under Engineering (*an organizational mistake*). The other department heads and managers did not want engineering to run this show at all. (*Engineering Dept. Head was not well liked.*) So, when the software was to be deployed. No other departments wanted to use it at all. It was about data exposure and the relationship people had with the Engineering Department Head.

**No one wanted these “data silos” torn down but I did it anyway.**



I paid the price for ignoring the political and cultural environment of an organization. (*Although this was at the Boss direction*) I was under the erroneous, naive assumption that a solid technical solution would change their hearts and minds.





The 2nd water district I tried this at I had a successful full deployment after 8 years of development and testing in 4 different environments, banking, manufacturing, city government and a municipal water district. (*thought it would only take 5 years*)



1. Support from the Governing Board. These are not departmental projects but agency wide projects. Once the Board says go the political issues were muted significantly. Complaints are not Actions.
2. Build to Scale. If spatial data is available County wide build the application as a multi-jurisdictional application not just for a particular jurisdiction within the County.
3. Use as few moving parts as possible in development. (One Language, One Database)
4. Concentrate on fast installation, deployment, and hands-free updates.
5. Automated the Cleanse, Validation, Standardization & Integration processes
6. The software developed should be Vendor Independent, Spatially Enabled, and Data Centric VISEDC
7. Self-Containment: Database Access, Document Management & GIS functionality are contained with the Executable. No Runtimes,

ActiveX Controls, No dependencies on .NET, Java Virtual Machines or System DDLs.

## **Now with All that Front-Loaded Work. What does the Money Look Like?**



This is quick. I was able secure 14 projects as a consultant in 5 years.

Each project requires 2 – 3 days to install and deploy to 300-500 users. A user base of 300 or less 1-2 days.

As a “Consultant Team of One” 2 things were crucial.

The contract is to turn the source code over to the agency. The application is theirs to develop further. The turnover time is negotiated along with my consultant services for that period. This can include helping the agency find a consultant to replace me for further development if in-house skill sets are not available.

Because I was dealing directly with the Board, I priced the cost of the project same as their highest payed employee. Information I always had

prior to the demos and proposals. After the demo this seemed to always work.

I was at the point where I either build the company out or retire. My personal goal was one of stability not constant growth, so I retired.

The average highest paid employee in municipal was always the General Manager and the salaries are public information in California.



Each project brought in between \$120,000 to \$221,000.

Required 1-3 days to deploy.

Required 3 months to a 1 Year of light support and turnover.

Turns out this was a formula the was simple, repeatable, low profile, low risk and relatively **low cost** with demonstrable results.

The reason this was considered **low cost** was because I would leave the specifications of the deployment and suggest they find other GIS consultants to compare the price. Most where 2 to 3 times my cost with a development time of 6 months to a year.

## **KISS** Keep It **S**imple and **S**ustainable

[Manage Enterprise Data As If You Were Managing Money](#)

Cheers