

BIOGRAPHICAL INFORMATION

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Specific Responsibilities

Joined Analytical Surveys Inc in 2000.

Responsible for development of the company's web strategy.

Participation in multiple internal software developments.

Database design and optimization of processes.

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Past Experience

Community Software & Data: Director of Software Development. 1997 to 2000.

Escuela de Ingenieria de Antioquia: Teacher of Computer Science at the Biomedical department. 1999 to 2000.

Hidramsa Ltda.: Hydraulic design engineer. Software developer. January of 1993 to June of 1997.

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B.S. - Civil Engineering, National University of Colombia

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CRM IN THE GIS PROJECT LIFE CYCLE

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Abstract

Customer Relationship Management has existed forever and CRM systems effectiveness may have been questionable; however, a system to interact with customers has always been available. In this document, we will review the main aspects of CRM and how CRM fits in the life cycle of a GIS project.

CRM is not only a system with software and hardware; CRM is a culture, a philosophy of process normalization, a way to interact with customers, employees, subcontractors, etc. It is a way to resolve issues and a way to promote and improve services or products. CRM is the answer to strengthening your business image.

The development and implementation stages of a GIS project require much interaction between different parties. We will learn what is important to consider so a CRM strategy could assist in making that interaction smooth and productive. We will also determine how CRM benefits project execution and how the GIS system, once completed, serves as a stronger foundation for CRM.

DATA-GIS-CRM: people communicating - sharing and exchanging data in a search for accurate and current information. The open availability of data, processing tools to transform that data into accurate information, and presenting that information to customers in a geo-located environment is the ultimate challenge. Some key tips will be provided in this document on surpassing this challenge.

Introduction

GIS (Geographic Information System) has been available for many years and its use has been extended to many different business markets. The execution of a GIS project is a complex, and in many cases, long process that requires a lot interaction of different technologies.

The detailed description of such a complex process could take many hours and maybe days. Since we don't need to go very deeply into the process description, a group of stages or steps will be briefly mentioned to give the reader a general

vision of how a GIS process is accomplished and what are the different actors that will make possible its completion.

At the same time, concepts about CRM, data exchange, and process automation will be included in those stages of the GIS project life cycle, highlighting the importance and benefits that the incorporation of these tools could bring to the project execution.

There is no magic formula and there is not a 100% standard way to accomplish any project, but what is totally true is that a very high percentage of tasks are similar and many processes are common, not only through the specific project, but also through the specific company and even more, through the industry or industries.

At the end, a GIS project is just a big process, composed of little processes that are accomplished by humans or machines, leading to a final result according with the requirements, hopefully between the estimated time frames and calculated costs. How can CRM help us to stay inside those limits, and what should we consider to make a good use of these concepts, are the main goals of this article.

CRM – Customer Relationship Management

Before going too far it is important to understand very well these three words and define each of them before assigning them a role in the GIS project life.

Customer: *“A person or group of persons, company, or other entity which buys or consumes goods and/or services produced by another person or group of persons, company, or other entity.”* This definition sounds like a good approach, but is important to note that the role of “customer” and “provider” is very relative and especially in a GIS project, this role is changing constantly and not only during the main stages of the projects but in the multiple processes accomplished day by day.

To clarify this, let's define a common GIS project schema: a Utility Company (customer) and a GIS Data Consulting firm (vendor or provider). Looking at a macro level, it looks like we have a simple case where our customer definition works perfectly well. Now if we consider that the Provider could probably hire a Data conversion firm, and that data conversion firm, could subcontract part of the job with other company. Who is the provider now? One can say, “no matter what! The provider is the GIS consulting firm” which technically is true.

So here is the first rule to keep in mind *“There is not a unique customer and there is not a unique provider... there are simply two roles that anyone in the project can take depending of the situation and assignation during a process execution”*. In that way the data conversion provider can be the customer for the

subcontractor, but can be the provider for the Consulting firm. At the same time, it could be the customer for its own technical department if they need software development, for example.

Relationship: *“The state of being related by kindred, affinity, or other alliance.”* This is a dictionary definition but is probably not what you want from a CRM system. The impersonation generated by technology, computers, Internet, etc., is leading society to have just that: “cold relations,” and the word “relationship” has been generalized in that direction, when it should be going in the opposite direction - which is the word “friendship”.

It could probably sound very transcendental but if we think in business terms it is true. In this global economy where competition is more and more aggressive, consumers are exposed to better and more attractive offers several times during short periods. With all these options available how do you decide what to do? Here is the second rule: *“customers will stay if they can trust the provider, and trust is not something that you can request... trust is something that you deserve.”*

So how can we deserve that trust? We need to establish **relationships** with our customers, not just cold relations. We have to implement processes during the execution of the projects to strengthen those relationships and hopefully turn them into long-term **friendships** that will end up in new business opportunities for both sides.

Management: *“The individual or group of individuals who make decisions about how a business is run.”* This dictionary definition of management obviously is not what we are looking for, and is not even directly related with the other two terms (customer, relationship) of our equation. However there are two key sentences in here that could help to complete the equation: “make decisions” and “run business” these four words are the essence of the third rule *“know your **business** in detail, implement processes that could support your **decisions**, and replicate those processes everywhere within your organization”*.

If you can create the environment to support the decisions that you as a customer or provider need to make during the life of a project, if you can manage those decisions in a structured and standard way so they can be validated against the standard processes implemented in your company; there is a good chance that your customers will get their responses in a timely manner, there is a good chance that they will be satisfied and interested in establishing a long term relationship (friendship) with your company and there is a very good chance that these satisfied customers will open new business opportunities for you.

Three words and three simple rules, but this is just the tip of the iceberg. As you can see, CRM is not about call centers, is not about software or hardware, or marketing and promotion. CRM is a culture of data exchange between individuals

that interact together around a business case to acquire mutual benefit, and that via processes automation and normalization will establish a strong relationship for improvement and new business developments.

Now that we have defined some concepts on our CRM approach, lets start looking at how this approach can be incorporated to the GIS projects and what tools are available to help us to do it.

Processes Automation

Process automation is the final goal. But before getting there it is required to define each process and make sure they are well documented and validated for the members of the project.

TIP: Identify people in your company or project with good capacity to describe and analyze different alternatives for processes, they are very valuable during the processes definition. These people are not easy to find, but they are valuable assets to implement a strong *CRM strategy*.

Processes definition and normalization are the foundation for your *CRM strategy*, but the way to automate those processes is going to depend on how sophisticated you want to get, and how much are you willing to pay for that sophistication.

The GIS system is going to have a lot of people working on the conception and planning, and the CRM group needs to start working to normalize any process generated during that planning. Although the *CRM strategy* is not probably even considered in the project budget, if you start normalizing processes, the cost of its implementation could be distributed among the different projects and the benefit obtained from those little efforts will motivate investment in improving and supporting the general *CRM strategy*.

Every defined process has a life cycle itself and here are some suggested stages to consider:

- Definition
- **Validation**
- Implementation
- **Monitoring (Revision)**
- Improvement

There are many aspects to consider here like: Requirements definition, Quality control and Quality assurance; but although all of these are important, they are not part of the scope of this document. These steps are sequential and recurrent, which means that we have to follow that sequence, but at any time we could go back to make adjustments. Validation and Monitoring are especially

important and as you can see are the connectors between Definition, Implementation and Improvement of the process.

TIP: Talk to your customers when you are a provider, produce feedback for your provider when you are a customer. If both sides have a way to generate this type of interaction and it works! your CRM strategy is based on a solid foundation.

Once the processes are defined and now that we have established how the data is going to flow between customers and providers, let's define some important aspects that any system that will assist us in the automation of these tasks should have.

Generally speaking, a GIS project should have the following stages: Consulting, Data Capture, Conversion/Acquisition/Translation, Deployment and Operation. Once the project is in operation, other stages are considered: Monitor, Enhance, Maintain, Distribute and Manage. Our Interest is not to talk about these stages individually, but present aspects common to all of them, that a well-oriented CRM strategy could facilitate and improve.

Our automation plan should consider tools that can **generate Issues**, and **track the actions** required to resolve a particular Issue. The system should control the access to the sets of **data related** to each Issue but handle them as a **unique entity**. The users should have a different view depending on their **privileges** and their particular **role** (customer or provider).

Depending on the level of importance of certain issues you should be able to identify **who did what and when?** And if it is required, **notify** supervisors and managers or simply other members of the team that could potentially provide some help in resolving an Issue.

TIP: You have to guarantee the Information distribution, accurately and on time. The essence of your CRM strategy in a GIS project is all about knowing your customers, knowing your business and having the information available to be able to sort any request in a prompt manner and have the flexibility to act as a customer or provider through the same interface.

Document Management

In the life of a GIS project, the generation, flow and control of documents, is critical to succeed in your CRM strategy. Documents can have different formats but the way they are handled and stored should be a standard process executed for all the members of your organization in a religious way. Access control and versioning are a plus, but if at least you have them all in a central place where users can search quickly or reference them, you are in a good position to start developing and growing around that repository.

TIP: As mentioned before, this is not about how much money you can pay for a complex system, it is about how you can standardize your processes with the available tools. You have to direct your people to work in the same page, once you can do that the evolution of the CRM strategy will be something natural. Monitoring and Improvement will get you there.

What technology is the best to apply in my GIS project?

This is probably the one million dollar question, but even if you pay a million you will not get the answer. Talking about CRM, technology is an aid – it is not a solution. Sometimes the best aid is what you have available but you are not using to its maximum potential, the budget is frequently limited, but there is no limit for creativity. In crisis times are when we have to be more creative, and the improvement is not going to come from buying new tools, it is going to come from redefining processes and making a better use of what is available to support that redefinition.

TIP: The first option to improve, is not buying. It is reviewing the existent and optimizing what ever you find possible to optimize. Customers and Providers are key elements in this task. *There is always something that can be improved without very high costs.*

Things to consider in the technical area of your CRM strategy:

Centralize your data, and normalize formats as much as you can. Centralization does not mean that you can't distribute your data and there are many tools like replication, synchronization, etc. to facilitate this task.

Web enabled. Web access is a mandatory requirement in any good system to support a CRM strategy, and is a key feature to help you execute your data centralization plan. The Internet is so powerful... *"If you have connection."* So if you are thinking in an ASP (Application Service Provider) model, consider investing some additional money in **connection contingency** or **offline** process definitions and execution.

Data exchange and portability. This relates more on how to take data in or out of your system. XML is becoming more and more, a standard way to exchange data between systems and a good technological platform should include tools to export and import data via this format. Other formats are valid too but the flexibility offered by XML nowadays is proving to be an accepted standard across the industry.

Control access to the record level. To keep your data centralized and handle all the elements related to an issue as a single entity, you should be able to control and be able to authorize or restrict the access to specific elements.

In a medical record system for example, you would like to control access to the field level. Since the patient data is so confidential you have to be very cautious on who is viewing what, and when. In a good system you need something more than a *form level access control* and in a CRM aid system it is very critical to avoid misunderstandings between providers and customers.

Issues Classification: The system should allow the classification of issues in different groups or categories, to facilitate the analysis and evaluation of the data generated during the monitoring activities. It will also help to identify critical areas along the processes. The way to classify the Issues is a common task agreed between customers and providers.

Alerts/Notifications: Although every user should have permanent access to the system, it is important to implement a mechanism for alerting or notifying the users of activity in the system, critical events or changes that could affect decisions or tasks in the execution plan of the project.

Escalation Levels: Any activity without supervision and control tends to lose direction, and sometimes the monitoring could fail. For that reason, it is important to have a way to escalate issues to higher management levels on the organization. It will guarantee that the customer is receiving the deserved attention and that the provider is playing the role that it is supposed to play.

Reporting Capabilities: Good reporting capabilities are important and one will assume that any good system should include them. However, the most important is the customization of the reports and the capability to add new ones. The main value of a report is to be the support for monitoring processes and control indicators. The creation of control indicators is the key to monitor your processes. *“If you can’t measure it, you can’t improve it”.*

There are many aspects involved in the CRM strategy that we don’t have time to mention now but if you follow these tips, and try to get a system that is compliant with most of the characteristics stated in this article, you have a good chance that with an adequate process definition, your GIS project from the point of view of CRM is going to work smoothly and will give you more time and versatility to solve all the other technical aspects involved in these types of projects.

“CRM is not a system, it is a strategy based on process definition and automation, that requires all the interested parties to work together in a synchronic way to achieve a final result. A well implemented CRM strategy is the answer to strengthening your business image”.