Title: Delivering Prompt and Reliable Information to the Brazilian Federal Government : A Data Warehousing Solution

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Abstract

In August 1996, SERPRO, a Federal Agency attached to the Ministry of Finance, decided to search for the best data integration solution to enhance the strategic planning process of the Brazilian Federal Government. SERPRO searched the market for a solution which would process the large amounts of historical data available within the Government in such way that would provide prompt, innovative, reliable and good quality information.

Data Warehousing arouse as the solution which would shorten the gap between client needs and SERPRO's capability to make information available. With this in mind, SERPRO contacted some of its business partners, three of which agreed to share experiences and risks involved in the implementation of an architecture to support a solution within a typical mainframe environment.

As a result, 120 days later, SERPRO has created a stable Data Warehouse environment which has proved to be a very important government tool. The Data Warehouse has increased the amount and the quality of information delivered to government decision makers enabling them to produce accurate decisions and maximize the use of governmental resources.

This paper presents SERPRO's experiences in building a Data Warehouse, describes the implementation environment, and highlights the benefits of an integrated solution. It also analyses the current environment in terms of identifying key business players (our customers) and describes their roles and explains why they were critical for a successful implementation. In the body of the paper the implementation planning is clarified and at the end presents the benefits that our client had and the effect in the data organization.

Analysis of Current Environment

Finding the best issue to talk about is not always an easy task. It often requires a close look to the most significant works done in the near past in order to choose the one which will show positive and valuable results.

Thus, before writing this paper, I asked myself whether I really had something unique and valuable to present. I talked to experts, analysed our last work and read related articles and came to the conclusion that it would be useful to talk about a solution that is already in the “production line”.
It is very common to read about data warehouse being used in sales, fraud detection and in the finance business but very rarely we see it in the Government sector. This paper shows a change in this reality.

Brazilian Federal Government is changing the way of doing things. The State is being rebuilt and “old fashioned” laws, which ties down the hands of Federal Institutions, are being altered to allow faster and smarter management.

The public opinion, the international pressure and the globalization of the economy, together with the information technology, created the links and the opportunity to the aimed revitalization.

As a government systems integrator, we - Serpro’s team - understand that technology infrastructure is a highly strategic tool for the Government in the process of modernization which involves many options and tradeoffs. With this in mind, we developed a process of data integration which will be presented in this paper. For this particular case, we chose a one of a kind process, an adecuated environment and a few partners which could keep up the pace as we moved forward in our project.

**Identify Candidate Process for Improvement**

Phase one of this work involved the identification of a process which would have a significant impact once implemented. A set of high-level guidelines was defined in order to link the project with the clients, suppliers, other members of the supply chain and the political net.

The business world of the private sector has shown many different examples of the use of information technology in achieving localized efficiency improvements. Identifying a process that would have a great impact (or “financial benefits” as the private sector call it) was one of the most difficult task.

The process had to have, at the same time, political appeal - since it had to be approved by the sponsors and the public - and, once implemented, had to be self sustainable - what a dilemma!

We got, then, to a moment when the “revolutions” started and the new ideas took root. Theories were abandoned; methodologies “in a box” and old sistematics had to be discarded. We knew that from that point on we would be dealing with something really unpredictable, and reconized that we were facing the boundary of a big change.

The chosen process had many gaps and problems, many of which were used as excuse for not implementing any process in the past. A government related issue which met the requirements and satisfied all premises was finally selected.
The selected process referred to the issue of federal employees (civil servants) – the highest expense item in the Government budget. There are actually, 1.2 million federal servants in the country. Not only were the numbers of employee worring but also, to make things worse, the payroll amount was growing every month what made the efforts to increase federal incomes without rising taxes meaningless. The expenses concerning employees payroll represented approximately 25% of the resources.

The administration of such situation was one of the biggest concerns of the country authorities. The lack of reliable information and the incapacity to prompt consolidate valuable data spread over different areas of the government led the decision makers to rely in the old fashioned and slow mechanism of providing information. That means more spending. Analyze the situation and solve the excessive expenditure problem was one big challenge for the government. It just could not foresee the right tool to achieve its objective.

Serpro, thus, offered a Data Warehousing solution which arouse as a great aid instrument in the decision making process as a whole.

Identifying Key Business Players and the Architecture

As said before, data warehousing arouse as the solution which would shorten the gap between our client needs and Serpro’s capability to make information available.

We contacted some of our business partners and draw the big picture of the information needs of some government areas and of the process we had choosen to be the pioneer in using the data warehousing solution in the country.

Three of these partners agreed to share the risks involved in the implementation of an architecture to support a solution within a typical mainframe environment where the members of the team had background basically in on-line transaction processing (OLTP) and non-relational database.

One of the partners, The SAS Institute, provided the means for the extraction of the needed data, stored in the mainframe, and also, together with its distributor SOFT, gave the necessary technical support on-site. Important to mention that many other alternative softwares were proposed by different suppliers but were ineffective.

The data, extracted from Adabas files resident in a MVS mainframe, were cleaned before loading an Oracle database (UNIX 64 bits server). The analysis of the context was made by means of relation on-line analitical processing (ROLAP) tools, which reflected a multidimentional model. The structured information (non ad-hoc) was built using different executive information systems (EIS) provided by the SAS Institute.
A general view of the architecture may be summarized as follows:

**Data Warehouse for the Brazilian Federal Government**

Implementation Plan

The implementation plan led our team to keep in mind that the arrival of a new and powerful solution would cause changes in the existing process whose cost and applicability had never been questioned. We would be dealing basically with persons used to the same old processes.

As a information technology team, we would have to deal with people who felt threatened in their position and often imagined losing their importance in the institution.

A team of psychologists was hired to help the group to deal with this situation. The next step was to plan the other phases of the process and chose the clients to work together as a real and complete team.

To face, and understand, the undefined request of executives a specific solution was also defined. The main focus was to build a system which would provide strategic information to users who had no background in analytical processing. We “gathered requirements” from the users and this came to be the basic reason for the success of the task.

**The Benefits of an Integrated Solution**

This may seem just another case of efficiency acquired through electronic wizardry ... but it is not! It is a matter of changing the way authorities make their decisions.
It is a shift in the way of making decision. There is no more reason for "wrong decision" based in the excuse of lack or delay of information. Information on this subject is, nowadays, available at any time, in the format and pattern the user requires.

The described process was a great professional satisfaction for the team as it resulted in both economical and social benefit for the population and also because it brought strategic alliances which may continue after the job is done.

Despite the fact that the process showed great applicability, we can still find resistance in many sectors of government. It is an enormous change that has been taking place and it certainly will require some time before it becomes a part of the decision process as a whole. We have faced situations in what decision makers insist in asking advisors for a simple information that could be recovered, in a friendly way, by just turning their computer on.

We are keeping up the work and are presently trying to connect pieces of knowledge which may bring us all the answers and lead us to a way of helping decision makers realize the great benefit that can be generated with this solution.

To summarize, the process of government decision has achieved a stage in which information comes faster and updated, reducing the time cycle between the request for information and its delivery, resulting in a more rapid processing and analysis of data. Certainly, the greatest side effect of the above mentioned process proved to be the birth of a new consciousness, within government sectors, of the importance of structuring data in a more organized way.

Reference


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