A Case Presentation: Petrobrás G&G Projects Organization

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Abstract

This paper aims to present the case study in the organization of G&G projects in the Exploration area, upon after the decision of centralizing the study and evaluation of Brazilian basins research activities in the head office of the company.

Introduction

I – The existing scenario

The exploration interpretation project

The exploration interpretation project is formed by a group of geological and geophysical data which constitutes the basis of the interpretation activity. These G&G data can be 2D or 3D processed seismic volumes, 2D coordinate seismic lines, well logs and well information, horizons, faults, time-depth table, etc. Fig.1 shows a seismic section with these elements.

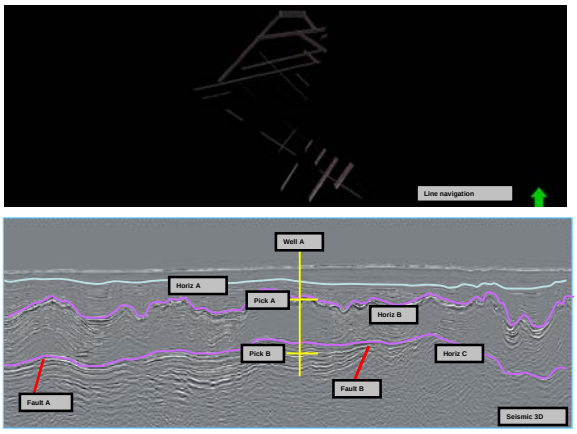

Fig 1 – Elements of 2D and 3D interpretation projects

In the process known as *data loading*, the seismic volumes to be interpreted in the commercial applications need, beforehand, to be converted from SEGY format into the interpretation platform property format, for instance, *3dv* or *cmp* for *Halliburton* 3D seismic volume and *vvol* for *Schlumberger* 3D seismic volume.

Seismic volumes can cause new seismic volumes, for instance, the seismic attributes. They will make the interpretation project even heavier in terms of disk space used. The size of an interpretation project is straightly related to the quantity of seismic volumes loaded in.

The storage data of interpretation project

The implantation of data storage technology was quite strategic. It was important to replace the usage of local disks in the interpreter's workstations. That resulted into a data management practice in the area; a better data protection and storage efficiency.

The challenge was to migrate all data from the interpretation projects of local disks towards pre-established disks in the centralized storage server.

After the centralization of the studies and researches of exploration group in the head office of the company, the interpretation projects sent in joined the already existing storage data.

In other words, the interpretation projects centralization into the storage data center happened in two ways: one inside the exploration group in the head office, and the other one from the external offices (UO) into the head office. Fig. 2 shows this scenario.

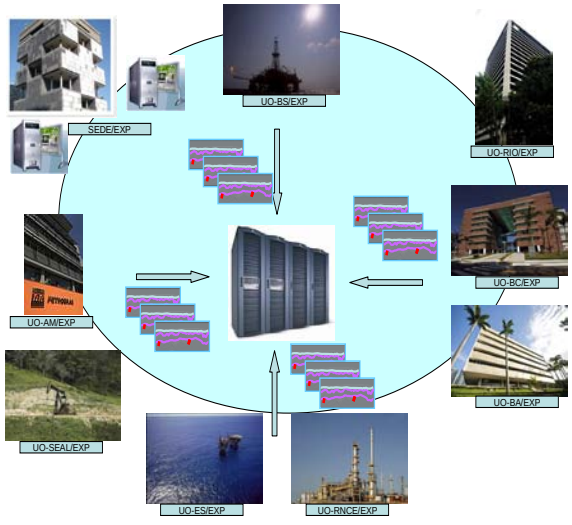

Fig 2 – The centralization of interpretation projects

During the migration, after some analyses, it was found a great quantity of duplicated interpretation projects and duplicated seismic volumes. They were inside the same interpretation projects and some of them were even corrupted. Moreover, there was also an enormous quantity of spurious data.

Thereupon, after the full migration to the servers, the next challenge was to organize them into a new data structure. That had to be done safely, without any data loss, with no impact to the interpreter's activities so that they could easily find the project.

II – Organization applied

Grouping by basins

The general organization started by grouping the interpretation projects in pools that corresponded to Brazilian geographical regions. There was one set aside dedicated to study projects, partnerships and other things.

A directory tree was created to each one of those pools. They were accessed by a *UNIX* environment command towards the projects. This distribution of the interpretation projects in pools made it easier for the interpreters to choose a project in a list of their group.

When the interpreter needed to work in a pool of projects related to other basins, it had only to type a UNIX command to change into the new environment. That was done under proper authorization.

The security in the interpretation projects was developed using the specificities of the UNIX system, like keys and groups of data access authorized users.

Consolidating projects

In order to consolidate interpretation projects, it was necessary to separate them in 3D and 2D dimensions. In the case of the 3D projects, the consolidation was based in the similarity of the seismic grid which, being the same, would gather seismic volumes in the same project. In the case of 2D projects, the consolidation was based in the line navigation, making the *master* 2D project unique.

That was one of the most important steps, because it reduced the quantity of seismic volumes in the disks and, consequently, made more room for new data.

Cleaning and renaming data

Cleaning data concerned to remove all old, null, corrupted and duplicated data. This work included the help of the interpreters who were supposed to analyze the lists of projects and the objects. They had to tell which of them were needed to the project, which were not anymore and which ones should be backed up.

Besides the data that should be preserved in the projects, the interpreters also had to inform how this data should be renamed. They had to follow a standard nomenclature, which was an important part of the data organizing process.

III – Conclusion

This new kind of data organization structure - taking into consideration the grouping by areas of interpretation project - has become a practice in many places. That was due to the facility brought up to the interpreter's daily activities, as well as better data quality and security.

The consolidation of the interpretation projects and the elimination of spurious data, made it possible to recover 1TB of free disk space, which represented at that moment half of all the space used by the interpretation projects in the storage disk. Fig. 3 shows this particular case.

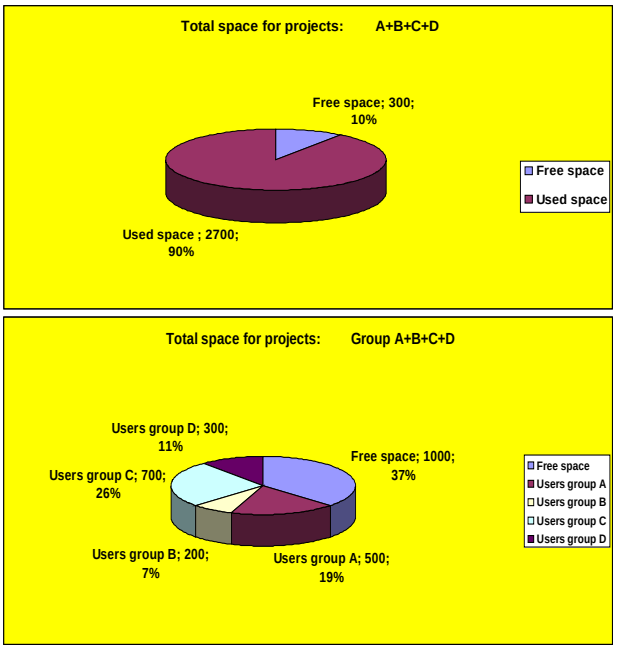

Fig. 3 – The distribution of space after and before the organization process

This new organizing procedure was significant for other projects to come, like the one about geo-referential consistency and verification, and the one about the implementation of a *unique Brazilian datum SIRGAS2000*.

Moreover, by creating data storage, this organization helped the company make more money and assure the integrity and unicity of data.

To end up, it is important to say that this organization, despite all the advantages brought up and listed above, it is in constant process to be perfect.

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