Repsol YPF - a complete implementation model of balanced scorecards in the oil and gas sector

SeUGI 19 – Florence, June 2001
Background: Weaknesses and Limitations of the Traditional Management Model

- Company cost structure has changed in recent years:
  - Indirect and overhead costs are increasingly higher
  - Processes are more automated (production, logistics, etc.) and tend to be outsourced

- There is greater emphasis on detailed analysis of the past rather than on anticipating the future

- It is hard to know if corporate decisions are really generating value for companies

- New management techniques are progressively being implemented (ABC, ABM, VBM, etc.) but without a perspective that will allow competitive advantages to be gained
Balanced Scorecard

- It is important for company heads to be able to provide an efficient response to questions such as:
  - Are we focused on the right market with the appropriate products/services?
  - Can the profitability of our products be improved?
  - Do we focus on improving the processes that represent the highest cost in our products?
  - And on those that add most value?
  - Are our clients loyal?
  - Are our employees motivated?
  - What is level of skills and innovation capability in the company?
  - Are we sure that our efforts are geared to the objectives we pursue?
  - Etc.
One of the basic needs of every business organization is performance management. This performance management has two fundamental objectives:

- To be aware at all times of the progress of the business in such a way as to facilitate decision-making for the heads: the results, identification of problems and opportunities for improvement, knowledge of the assets of top executives’ management, etc.

- To ensure that everybody in the organization is aligned with company strategy, thus increasing the effectiveness and efficiency of the organization.
One of the basic pillars of the current trends in performance management is the implementation of Balanced Scorecards due to the following characteristics:

- Fast (few indicators), sure picture of the company’s situation/evolution
- Focused on the external image (shareholders and clients) and internal improvement (processes and people)
- A balance is applied among the multiple dimensions of performance, which makes it possible to ensure that positive results in one area are not camouflaged by negative results in another
- Focused on the future and on establishing ongoing improvement systems, not only analyses of the past
- Possibility of extending towards the lower levels of the organization
The Balanced Scorecard evaluates, at top level, the company’s ability to direct its efforts towards creating value or achieving business objectives, thus making it possible to respond to four questions:

- How do our clients/consumers regard us?
- Are our employees motivated?
- Are we in a process of ongoing improvement?
- Are the shareholders satisfied?
Balanced Scorecard - Concept and Characteristics

The Balanced Scorecard is built on the basis of four fundamental components:

- Perspectives: four “top-down” perspectives of the company’s performance
- Business objectives: a limited number of feasible objectives aligned with the company’s strategy
- Indicators: performance management metrics that provide support for the objectives (KPI)
- Objectives by indicator: quantified expectations of the level of performance to be reached by each indicator
**Accenture’s Vision and Experience**

**Piloting the Value Chain**

**Financial Perspective**
- Can the profitability of our products be improved?
- How much does it cost us if a current client leaves us?

**Client Perspective**
- Are we tackling the right market with the appropriate products?
- Are our clients loyal?

**Internal Perspective**
- Do we focus on improving the processes that represent the highest cost in our products?
- And on those that add most value?

**People & Skills Perspective**
- Are our employees motivated?
- What is level of skills and innovation capability in the company?

**Create Value**
- F1
- F2
- F3
- F4
- F5

**Increase Sales**
- F3

**Optimize Operating Costs**
- F4

**Top Quality Products**
- C2

**Increase Sales**
- Client Satisfaction/Image

**Optimize Procurement**
- I1

**Optimize Operations (Ing./Log/Fab)**
- I2

**Develop Strategic Skills / Innovation**
- P1

**Information Systems**
- P2

**Optimize Procurement**
- I1

**Are we sure that our efforts are directed towards the objectives we pursue?**
Accenture’s Vision and Experience

Information Systems

- Vision of the Management Reporting Model

  - EIS Executive Information System
  - DSS Decision Support System
  - Balanced Scorecard
  - Exception Reporting, Budgeting
  - Standard Reporting
  - Operational planning: Promotions, HR Projects, etc.
  - Integrated Master Files/Common Functions
  - Basic Hardware and Software and Telecommunications Infrastructure

Strategic Management

Operating Management

Gathering Information

In-depth Navigation

Top Management Analysts

Operating Management Information
Implementing a Balanced Scorecard involves checking the information systems to ensure that they adapt to the new needs:

- Monitoring Action Plans by Business Unit and Person in Charge
- Developing utilities for:
  - Alarms
  - Drill-Down
  - Messages
  - Etc.
- Usability
- Flexibility for adding/modifying indicators
- Flexibility to adapt to organizational changes
- Extensive reporting possibilities
- Maximum advantage taken of the current systems
Information Systems – Example of Architecture

Balanced Scorecard Application

Profitability Analysis Application

Simulation (Planning and Forecasting) Application

Integrated Transactional Level (Relational Database)

Transactional Application Level

RDBMS

MULTI-DIMENSIONAL DB

Generic Information Retrieval Applications

Standard Information

Exception Information

Accenture’s Vision and Experience

Accenture’s Vision and Experience

Information Systems – Example of Architecture

Business Analysis Level

Balanced Scorecard Application

Profitability Analysis Application

Simulation (Planning and Forecasting) Application

Transaction Application Level

Commercial

Production

Purchases

Finance

©Accenture 2001
In order to prepare a Balanced Scorecard supported on an information system that fulfills the characteristics described, it is desirable to have a data management process that will allow on-line analysis of the information (OLAP).

Data Sources

Data Warehouse

Data Marts

Operation/Information

Extraction and Depuration

Refinery Transformation Summarizing

Data Distribution

Exploitation
References in Performance Measurement

Some important references are:

- ACB
- Ameren
- Antonio Puig
- CIBC (Canadian Imperial Bank of Commerce)
- Coors Brewing Co.
- DANONE
- DaimlerChrysler
- Delta Airlines
- Deutsche Telecom
- Dupont
- Ericsson
- FNMT
- Henkel Ibérica
- Niagara Mohawk
- Novartis
- Pepsico
- Repsol YPF Área Química
- Shell
- Sidenor
- Smithkline Beecham
- Sony
- Tenneco
Experience of Repsol YPF Chemical Area

Implementation of a Balanced Scorecard
An international petrochemical group, a leader in profitability in this sector.

11 plants located in Europe, Central America and South America.

Significant capacity for production and distribution of a wide range of petrochemical products: olefins, propylene oxide and derivatives, styrene, polyolefin, synthetic rubber and fertilizers as well as other groups of products.

Constant drive towards growth and leadership. Example of recent news in 2000:

- New plant for OP/SM and derivatives in Tarragona. Investment of over 90,000 million pesetas, which represents the largest investment in Spain with own technology.

- Urea plant in Bahía Blanca (Argentina), with the greatest production capacity in the world for this product in a single line. Alliance with the Canadian company Agrium, world leader in the fertilizer sector.
Drive Towards Technology-Supported Management

- Constant concern for the application of excellent management practices to support achievement of their strategic objectives
  - Optimum application of CRM (Client Relationship Management) capabilities.
  - Geared to the use of technological opportunities: internet/intranet, eEnterprise achievements, partner of ChemConnect (main portal for purchase and sale in the sector).
  - Organization and management by processes supported by integrated information systems.

- Recent initiative in the design and application of a Balanced Scorecard for the Management Committee
  - Based on the Norton and Kaplan Balanced Scorecard theory.
  - The model has been in use for about one year.
  - A support computing system utilizing SAS tools has recently been put into operation.
What is the Repsol YPF Chemical Area?

Experience of Repsol YPF Chemical Area

Executive Vice-presidency

General Managements / Business Units

Polyolefin

Petrochemical

Polyethylene Polypropylene Basic Intermediate Industrial Rubber

Technical Support Units

Support Units

Production and Logistics

Sales and TA&D

Planning and Control

Legal Consultancy

Human Resources
Experience of Repsol YPF Chemical Area

What it Represents

- 13 Lines of Business and 62 product groupings
- 13 companies worldwide
- 11 industrial complexes
- Different Information Systems
Results / Process

- Means to transmit the new organization of the Chemical Vice-presidency and its strategic approach
- Management tool for the Management Committee
- Allows the information that is distributed in different systems to be grouped in a single support.
  - The conceptual design of the Balanced Scorecard and the prototype completed in 2 months
  - When the design was completed and until a support tool was implemented, a Balanced Scorecard that had been prepared manually was edited and distributed monthly to the members of the Management Committee and their teams
  - The support tool that automates the data retrieval process and presentation was selected and implemented, in accordance with the characteristics established in the prototype.
The Balanced Scorecard was prepared by applying a methodology intended to structure valuation of the perspectives and objectives defined.

- The strategic objectives for each perspective are defined and assigned.
- The cause/effect relationships between the different objectives are established.
- The indicators or measures that indicate achievement of the objectives are defined.
- The goals for each indicator and its weighting relative to measurement of the objective and perspective are established.
The strategic objectives are found to be cause/effect related. The measures that indicate their evolution are related with each other. Analysis of the evolution of objectives and measures indicates alignment with the strategy. Analysis of correlation among them indicates the alignment of the balanced scorecard.
The model to evaluate perspectives and objectives is based on a set of main indicators assigned to them. Coverage of the actual value over its goal determines the objective/perspective value. This coverage is weighed when several indicators are assigned to an objective.

Additionally, other types of indicators have been defined:

- Explicative analyses: They allow the causes of the evolution of a main indicator to be analyzed and explained.
- Informative references: Additional indicators referenced at external variables.

All the indicators are analyzed multidimensionally by means of different hierarchies.
## Indicators - Example

<table>
<thead>
<tr>
<th>Nº</th>
<th>Strategic Objective</th>
<th>Value Generator</th>
<th>Medidas</th>
<th>Hierarchy</th>
</tr>
</thead>
</table>
| F3 | Increase profits    | • Maximize profitability by increasing the relative weight of added value products | • Operating cash-flow  
• Operating result  

References for information:  
• % contribution to the Group’s result  
• % Sale of specialties relative to total sales  

Explicative analysis:  
• Average margin of product specialties relative to average margin of total products  
• Margin over average product variables  
• Tons of specialties relative to total no. of tons. | • Product / Company  
• Product / Company  
• N/A  
• Product / Company  
• Product / Company |
Experience of Repsol YPF Chemical Area

Tools

The SAS tools have been selected to build the support information system for the Comprehensive Balanced Scorecard for Repsol YPF Chemical Area, as it provides the following features:

- Fast Analysis of Shared Multidimensional Information (FASMI) in a WEB environment.
- End-to-end solution in the information delivery process
- Flexibility for adding/modifying/deleting indicators.
- Flexibility to adapt to organizational changes.
- Usability.
- Options for reporting/graphical display/analysis by default (flags and alarms).