

DEVELOPMENT OF A MONITORING PROGRAM FOR ENTERPRISE PERFORMANCE AND GROWTH INDICATORS

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Abstract: The present project is aimed to develop a software that allows the monitoring of the most common and standardized indicators in growth and performance, in any kind of enterprise. To that end, the Board of Command, a management tool used to translate the strategy of growth to operative terms will be of enormous help. This tool represents the beginning of a wide and processable government theory and power practice. In this perspective, diverse vectors of organizational performance should be aligned with organizational strategy, so as to generate, a set of indicators beyond the traditional performance measuring forms that could only be applied to past events. The Command Board looks for indicators showing the tendencies of organizational development. In other words, a selection of indicators is to be developed, providing the planning and control systems with a retrospective as much as a prospective vision, thus transforming the Command Board into an action strategic structure or framework. It is designed as basic software to be set accordingly to the specific characteristics and necessities of any particular enterprise sector or corporation. For the Monitoring Program development a database will be set to support a series of growth and performance indicators capable of determining critical alert points so enabling the decision makers to determine the course of action and to apply the necessary correctives. The first part of the Project is designed to establish the most common growth and performance indicators for a standard company in Colombia. In the second part, the project provides the data base and the software with the necessary information to grant the execution of the established standards. The third part is aimed at developing the Software and the user's guide.

Keywords: Balanced scorecard, Program of Software, Monitoring, indicators of growth and acting, organizational development, database.

1. INTRODUCCION

The balance scorecard or command board is a system aimed at evaluating the human resources and use of the "brain capital" within the enterprise. The balanced scorecard considers the enterprise management from four different points of view: growth and development processes, inner processes, clients report and financial results. These four elements should give a balanced view

of the enterprise's present and future performance. This tool should help the enterprise to establish the necessary actions (including the potential investments in personal, systems and processes) in order to strengthen capability and improve performance.

Many shareholders and managers are unsatisfied with their companies' general performance, either because they have losses or because the benefits do

not correspond to what they expect. This situation has induced them to look for new innovating growth and development strategies aimed at creating added-value and improving the benefits by increasing their outlets' profitability rather than by closing them down or by reducing costs. The Command Board enables them to determine the critical elements within a growth strategy:

- Product services and processes innovation.
- Required sustained-growth generating investment in terms of human resources and systems.
- Better value product charts with higher benefit margins.
- Better identification of value-generating target clients.

As with any new strategy, the introduction of the command board requires the compromise of the top management levels and of every single member of the organization. In order to assure its success, it has to be understood and become part of everyone's daily activities. The enterprise will be thus in a better position to recognise its real situation and to develop new working methodologies .

The Balanced Scorecard articulates the use of two fundamental tools for the enterprise -Strategic Management and Performance Evaluation-, and usually takes into account four different aspects: Finance, clients, internal processes and finally innovation and training.

But rather than a tool, it is a way of looking at things and a methodology based on a strategic map configuration run by cause-effect relationships. What is important is the fact that, no perspective being independent, we can start to operate from any one of them. Generally speaking, the first step is to establish a series of precise FINANCIAL targets, necessary to achieve the set goals. These objectives will be the result of what is done with the CLIENTS and its achievement will depend on how the INTERNAL PROCESSES have been programmed and planned.

The BSC establishes how the final achievement of all these objectives depends on a continuous TRAINING-LEARNING and GROWING process, one of the basic pillars upon which this methodology is based.

That is to say, the Balance Scorecard is a Strategic Management System or, even more, a very useful

“Strategic Setting” System when it comes to running the company's own strategy. As Kaplan and Norton point out, the innovating enterprises are now employing the CMI measurement approach to develop new decisive managerial processes.

- Approach and strategy implementation and/or transformation
- Objectives and strategic indicators recognition and setting.
- Planning, establishing objectives and the alignment of strategic initiatives.
- Feed-back and increase in strategic training.

Being a current tool, it looks at today's problems from a new perspective of what the enterprise resources are, of how they are to be evaluated and of what is important and counts within it.

The financial perspective, corresponding to the point of view of the shareholders expectations, is particularly centered upon the idea of value increase with high profit indexes, a steady growth guarantee and the permanence of the business. All this requires the setting of clear objectives and indicators providing the right answers in terms of the different financial parameters: growth, benefits, capital return and capital use.

The client's perspective must secure the right answers to their expectations. Whether yes or no, the objectives corresponding to this perspective are attained, is definitive when it comes to knowing what the businesses final profits will be.

That is how recognizing and studying this important concept will help to see the real situation of the company from a new point of view; to establish a new value proposal for it that will make it possible to point out, beyond the present, what it potentially has in terms of quality, price, relationships and image; to show how this potentiality is being developed through the company-client value link; and to take decisions that reflect its reality and are in accordance with the factors that make of it a competitive enterprise at present.

2. USE AND APPLICATION OF THE BALANCED SCORECARD

The first step of the process is a situation analysis. The company is sub-divided in planning-relevant segments; an environment analysis as well as the evaluation of competitors and industry is

integrated; and finally, the critical aspects that the enterprise has to face are properly defined.

The second step is to define in which direction the company has to move. The advantageous points and the situations or elements with a higher performance potential are identified so as to develop an enterprise concept allowing the exploitation of its real and unique advantages.

The third step implies the development of optional perspectives to mobilize the company in the proposed direction. It has to provide the enterprise with a set of realistic possibilities to exploit its unique advantages.

The fourth step is to establish the operative plan that will determine than action programs and the agenda down to the accomplished goals.

The fifth step is given by measurement. It implies establishing criteria to measure the effectiveness of the actions and the development of a consistent supervision system to carry out timely evaluations. This is a critical step in order to assure that the entire strategic planning process becomes an active and useful managerial tool instead of a simple stack of paper.

This process perfectly integrates itself within the Balanced Scorecard method, so called because it intends to find a balance between financial and non-financial indicators, in the short as well as in the long term; between the result and process indicators; and, last but not least, as this is the key and the innovative idea at the origin of the name "Balanced Scorecard", a balance between the company's inner dynamics and its environment. What remains important here is the fact that a company's management indicators need to be balanced, that is to say, that financial as well as non financial indicators, results as well as process indicators, etc. are present.

This method is a strategic tool in itself, as the main problem consists in having a series of interlinked indicators able to point out the company's strategy through a cause-effect link map.

In this context, a company being able to apply these techniques successfully will find itself in a quite advantageous position to take profit of all the opportunities in front of it. It should be taken into account that any answers generated by the analytical processes will not be valid beyond the range of validity of the criterion itself, used for the

original assumption; this means that the strategies and the strategic planning from a rather simple and easy to understand concept, transform themselves into a measurable tool which can in no way be rejected as the "Balanced scorecard" is based on the enterprise's vision and strategies.

From this point on, the financial objectives necessary to achieve the goals are defined, and will be dictated by the mechanisms and strategies determining the results in terms of the clients. The internal processes are planed to satisfy both, the financial requirements and the clients. Finally, the methodology recognizes learning and growing as the platforms upon which the whole of the systems stands and in which the established objectives for this perspective are to be defined.

This methodology's fundamental advantage resides in the fact that instead of limiting itself to a single perspective, it considers all of them simultaneously, while identifying their mutual links. That is why it becomes possible to establish a cause-effect chain and take the necessary initiatives at each level. By knowing how the objectives of the different perspectives are linked together, the progressively attained results given by the indicators help to determine whether it is necessary or not to make any adjustments within the sequences, the initiatives or the value levers in order to secure the attainment of superior goals.

In this way, all the human, technological, cultural and information resources will be strengthened in the right direction, as required by a series of processes that will better recognize the clients' expectations, a real base to guarantee the financial results essential to the accomplishment of the final objectives.

3. SOFTWARE AND BALANCED SCORECARD

3.1 Models

The building process of the program as a practical tool is regulated by three basic models.

- Management Model. Strategic planning (M Porter) applied to the Library Management Model. Command Board as a Planning and Control Tool (ISO 9004 2000). Alert indicators systems. Invariant and multi-variant systems.
- Data Structure and the Information Functionality Model

- Information technology application Model (architecture client-service).

3.2 Statistical tools

The comparison of the statistical descriptive of the different groups, especially the sample mean or, in order to have a better perception of the whole set of observations, the typical deviation, the median and the maximum and minimum values. The discriminate analysis, also called discriminate factor analysis or canonical discriminate analysis, a statistical technique developed from the lineal regression calculus.

3.3 Information technology tools

Electronic Planning Board, Active X Controls and Visual Basic:

The program consists in promoting the informatics activity function of the library as an organizing unity and basically involves providing the processes with the fundamental rules, the data base fundamental structures, the interface elements and the system's general infrastructure upon which the working teams can develop their applications

Visual Basic:

Visual Basic is software developed by Alan COOPER for Microsoft. The programme language is a dialect of BASIC with some important additions. Its original version was presented in 1991 and intended to simplify programming by using a totally graphic environment that makes the creation of graphic interfaces easier and in a certain way programming itself.

It is an event-guided language, easy to learn and conceived for junior as well as for expert programmers, centred on a formulary engine which facilitates a quick development of graphic applications. Its syntax, derived from the former BASIC, was later expanded by adding the typical characteristics of the modern structured languages. A limited implementation of the programming has also been added (the very same formularies and the controls are objects); even if it takes the polymorphism through the use of interfaces, it does not admit the heritage. It does not require the use of pointers and its chain of characters is very easy to work with. It possesses several libraries to handle data bases and can be connected with any data base through ODBC (Informix, DBase, Access, MySQL, SQL Server, PostgreSQL, etc) and through ADO.

It is mainly used in the domain of company management applications, because of the speed at which a programme using a simple data base can be made and because of the amount of programming experts working with this language.

The Microsoft compiler generates executables which require a DLL to work, called sometimes MSVIMxy.DLL ("Micro Soft Visual Basic Virtual Machine x.y", x.y signifying the version) or some other times VERUNXXX.DLL (Visual Basic Runtime XXX), which provides all the functions implemented in the language. There is a great number of libraries (DLL) which facilitate the access to many functions of the operative system and the integration with other applications. In any case, this is a limitation in obsolete systems, as the libraries necessary to execute programmes in Visual Basic are to be found on a regular basis in all the versions of Windows since Windows 2000:

- Its successor VBScript is the predetermined language for Active Server Pages (ASP).
- On the other hand, a proper extension of this language called Visual Basic for Applications (VBA) allows the codification of modules (sometimes called macros) for the Microsoft Office applications
- The interaction and generation of remote objects brought from script pages (specifically the ASP, even though it is not impossible to establish a link by using JSP) is possible, especially from version 6 of the language onwards, with web servers as hosts.
- Visual Basic.NET a part of .NET is a basically equivalent language in terms of functionalities to C# (It does not admit any pseudo-pointers, for example) which adds the POO capacity that its former versions (such as Visual Basic 6) did not have: heritage, polymorphism, etc.

The Visual Basic versions for Windows are very well known; there is, though, a rather rare Microsoft Visual Basic 1.0 version for MS-DOS (Professional and standard editions) published since 1992. It was an environment which included, even if in text mode, a formulary designer within which diverse controls could be taken and placed.

The last version, only for 15 bits, the 3.0, already included a detailed component library designed for all kinds of jobs. During the transition from Windows 3.11 to Windows 95, the 4.0 version was produced; this version could generate 16 and 32 programmes from the same source-code even though the necessary runtime files became too big and heavy. The VEIX controls were substituted by

the new OCX. The 5.0 version brought for the first time, the possibility of native code compilation, which meant much higher performances. This version and its successor, the 6.0, supported characteristics proper to the object orientated languages, even though they lacked some important items such as heritage, polymorphism and overcharge. The 6.0 version is still currently used.

Today's Visual Basic versions are based on the .NET platform. Even if they retain many of the characteristics of the original language, they still have many differences and are, thus, incompatible. Very often, in order to bring a code, having been written in Visual Basic 6, into Visual Basic .Net an important part of it has to be rewritten. The language's new version is basically equivalent to C# even if there are still a few differences; that is why there is a discussion on how useful it is and which its advantages and disadvantages are if compared with C#. In any case, it is still developed in the same environment as all the other versions: Visual Studio.

3.4 Advantages

- It permits the programming of a BASIC microcontroller.
- Thousand of forums throughout the web make it the language with the most important support/coverage if compared with others.
- The language's simplicity makes it possible to create new applications for Windows very quickly; that is to say an effective development in a shorter period of time than in any other language.
- The IDE of almost every single version of Visual Basic includes a very high number of assistants and planning boards. All the versions include optional graphic material directories (icons, cursors, images) ready to be added to the project.
- The syntax is flexible so that the compiler can be set to ignore errors or to write several instructions in the same line. The IDE detects the existent variables and changes them throughout the whole of the code when written in a different way, in capitals, for example.
- From the .NET 2003 version onwards, the creation of programmes for mobile devices (such as PDAs, mobile phones, etc.) became possible
- Native form ActiveX and Win32 (no ActiveX, without COM interface) dynamic libraries can be generated by re-configuration its linker in the compilation process.
- The implementation of POO

- Retro-compatibility. With the superior versions IDE it becomes possible to import projects from other language versions while keeping the same appearance and functionality they had previously. Even if this is only possible with the COM versions (not the .NET ones), that means, at least, a decade compatibility between the different versions. That is to say, a programme which was written in 1990 in Visual Basic 1.0, could be compiled and used without any problems in Windows Vista.
- The 6.0 version IDE already permitted the use of Adding having been programmed, even in the same language, which allows an important interface customizing.
- The use of forms taken directly from resources (as with other languages) as well as by using the IDE to design them is possible. This allows the use of existing programme interfaces just by importing the resources file.
- The latest versions include a technology called parallel version control which permits several versions of the very same components to be safely installed in the same equipment so that the applications can use any given version of such a programme. Visual Basic eliminates in this way, theoretically at least, the possibility of version conflict.

4. CONCLUSIONS

In sectors characterized by enormous investments in capital, with very long recuperation terms or exposed to a rather aggressive competition with new services by competitors used to increasingly dynamic and global environments, new factors appear that can seriously threaten any organization and create the need for it to carry out substantial changes to develop new abilities and ensure success.

That is why it is so important that enterprises develop planning processes allowing them to anticipate new environment factors, market evolution, and to successfully face their effects and align themselves strategically to survive and grow within the business.

Designing programmes that help making operative the strategy fixed by the organization, through a series of action planning at all levels of the enterprise, will permit such a strategy, to be adequately implemented.

It is mainly in these sectors that information technology and the Balanced Scorecard integrate with each other to generate a Strategic Planning Integrated Model specifically in those aspects related to:

- The diagnosis and prognostics of the environment and the enterprise state of the art to date.
- The technological environment within the enterprise to date.
- Service offer/demand analysis.
- Determining the enterprise's business orientation.
- The technological and organizational structures required to develop the enterprise's businesses
- Determining the measurement indicators and application of the plan

With the software application, the BSC becomes a very powerful and useful tool which establishes a permanent link between the formulated and implemented strategy and the actual management control. It relates the traditional control indicators with financial and non financial indicators to measure the level of attainment of the strategic goals as a whole from the point of view of clients, shareholders, internal processes, innovation and training.

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