Implementing Strategy Management Systems

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Abstract. While Strategic Information Systems (SIS) are devoted to support the process of planning and controlling the business strategy, Strategy Management Systems (SMS) should manage the on-going execution and assessment of the business strategy itself. SMS should therefore not only measure performances, just like a Corporate Performance Management System, but also provide a clear look at what is actually happening in the business. In this sense, SMS supply a better way to manage processes to get the desired results. SMS are the more recent evolution of Business Intelligence Systems (BIS). They unify key financial processes and applications to provide executives with a single, accurate picture of strategy execution and performance.

Introduction.

Management Systems (MS) are defined as a system of people, data records and activities that process the data and information in an organization, and it includes the organization's manual and automated processes aimed to support managers, or, in other words, MS should support the development and execution of strategies at various management level [1].

A long evolution path involved Information Systems (IS) which are the broader category that includes MS: more than thirty years ago emerged the so called Decision Support Systems (DSS) [2]. DSS were based on models and data: by means of models, DSS were able to transform data in useful information and knowledge, and were supposed to support decision-making processes.

After DSS came Expert Systems (ES), which were based on Artificial Intelligence paradigms. ES were supposed to perform like human experts and to help managers in their tasks. ES lasted few years, then slowly faded away. For a short

while seemed that top managers should adopt Executive Information Systems (EIS), but those systems were too simplistic and never had a broad diffusion.

The experience gathered from DSS and ES melted in a brand new class of applications: Business Intelligence Systems (BIS). In fact, BIS are systems able to transform data in useful information and knowledge to support decision-making processes, in view of the objectives that enterprises must pursue in order for them to sustain their competitive advantage [3], like DSS did. Moreover, some modules of BIS, Data Mining Module in particular, rely for some aspects on Artificial Intelligence paradigms.

Another aspect in which DSS and BIS are similar is the adoption of models. In the DSS paradigm there was a set of models that the manager could utilize to carry on the decision-making process. Those models were relatively simple and strictly formalized through the use of particular high-level languages. At first sight BIS do not seem to adopt models, but it's simply because they use models at an higher level of abstraction. In fact, managers that adopt BIS analyze data referring to models based on such theories as Balanced Scorecard (BSC) [4] or Corporate Performance Management (CPM), that define which variables or aspects must be evaluated.

Some authors propose the term "Strategic Information Systems" (SIS) for higher-level systems. A SIS is a system to manage information and assist in strategic decision making. A Strategic Information System has been in fact defined as "*The information system to support or change enterprise's strategy*." [5, 6].

The role of models should be considered extremely relevant: some analysts such as Gartner differentiate between BIS and CPM and consider the last as the ultimate Strategic Information Systems (SIS). Each industry analyst and software vendor has a different interpretation of the core processes that influence CPM. These generally include but are not limited to:

- Budgeting, planning and forecasting
- Profitability modeling & optimization
- Scorecard & dashboard applications
- Financial consolidation
- Statutory and management reporting

Managing the Strategy.

Summarizing the work of many authors [7, 8, 9, 10], we may define strategy as "*a plan of action designed to achieve a particular goal*" and, in particular, business strategy as "*a long-term approach to implementing a firm's business plans to achieve its business objectives*".

A sound business strategy is necessary for the sustenance of an organization in the long run. Strategic analysis is about how changes in the wider environment affect the business proposition. SWOT analysis, PEST analysis and Porter's Five

Forces Model are some of the tools that may be used in assessing the internal and external environment of the organization and, thereby, devise an effective business strategy.

While it is not our aim to deepen the study of business strategy, we want to focus our research on Information Systems which are capable to support at best all the processes related to definition, implementation and execution of business strategy itself.

Business strategy may emerge either from a top-down or from a bottom-up approach. In our opinion it's not relevant which method is adopted, but it's important that the business strategy emerges from a broad process that involves all the management of the firm. Also this process should be completely supported from Strategic Information Systems.

Usually organizations implement a structured process to define the corporate strategy, adopting a schema similar to the one depicted in Figure 1 [11].

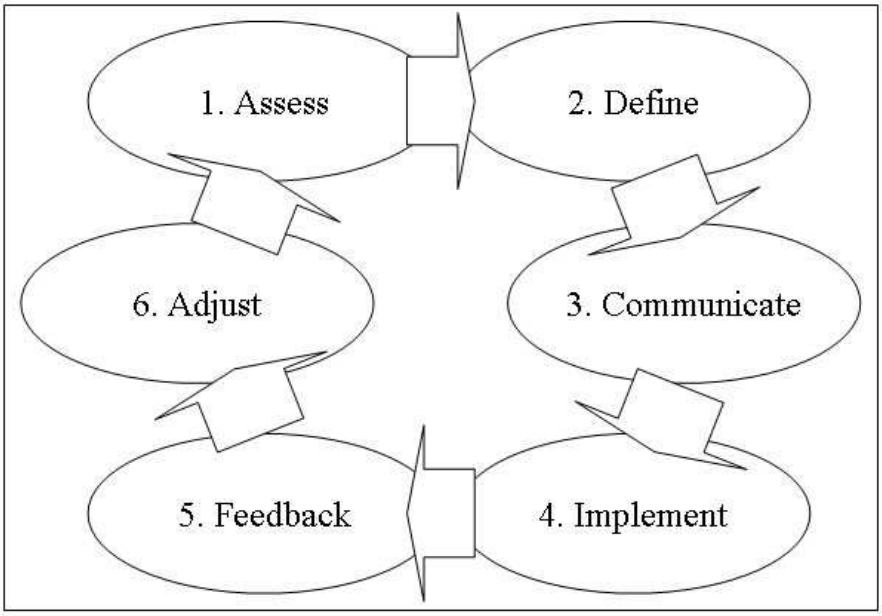

Figure 1 – The Strategy Management Process.

Following this schema, managers should:

1. Assess the actual situation gathering all data and information needed to support the decision-making process; this includes collecting data from internal systems such as ERP, gathering data from external sources, etc.;
2. Perform an appropriate process of decision-making to define an opportune strategy applying the desired reference model like BSC or CPM; SIS should provide appropriate tools (such as Excel spreadsheets) to calculate and evaluate alternative hypotheses;
3. Define a business strategy communicating their thoughts to other managers and reaching a common decision through group decision means (meetings, electronic messages, etc.) involving the whole firm management;
4. Implement the stated strategy;
5. Receive and evaluate feedbacks from organization and environment;
6. Eventually adjust the strategy to meet the desired goals.

The role of SIS should be supporting each and every step of the mentioned process, in order to empower the job of managers. Moreover, SIS can support managers in two ways: a *structured* way and a *non-structured* way. Although we may agree on the fact that many of everyday decision making processes are not structured and one may fail dramatically to get the "behavioural" meaning of what happens in a company if one focus only on what can be written down, the structured approach can be easily tracked and documented. In this way the process can be repeated (eventually from other people) and can be certified. The last issue is extremely relevant in some procedures that produce particular reports such as mandatory reports for external entities.

Some considerations about current Strategic Information Systems.

Some critical issues about current SIS implementation are:

1. **Incomplete support.** We may notice that SIS do not support all the phases of the strategy-definition process (see Picture 1). In fact SIS are usually adopted in Phase 1 (Assessment) and Phase 2 (Definition); they may eventually support also Phase 5 (Feedback) and Phase 6 (Adjustment), but these last phases are rarely performed in a structured way. Other phases may not be supported at all.
2. **Separate environments.** Only few SIS environments provide fully integrated means to collect and to elaborate data, thus providing a real support for the decision-making process. The user should switch from separate environments to perform all the desired tasks. The focus of DSS, SIS and BIS is on supporting managers' activities related to the decision-making process: gather and

evaluate data, propose tactics and strategies, receive and transmit prospects, etc. In other words, those systems are mainly aimed to support managers as individuals and to help them in their singular needs. In fact, besides the basic data, usually produced by the IS Department from ERP systems or other legacy systems, the decision-making process rely on managers' experience and is usually supported by a plethora of instruments, like Excel spreadsheets, etc. If this is somehow acceptable, perhaps it may cause severe inconsistencies between spreadsheets provided by different users.

3. **Communication.** Although BSC and CPM theories point out the need to involve all the organization to reach the desired goals, and for this reason it is essential that the strategy is communicated to everybody within the firm, it is very rare that SIS were adopted for this use, at least in a structured way. The communication is usually left to other environments (mail, web, etc.). Some years ago were proposed the so-called "*Group Decision Support Systems*" (GDSS) [12], but they never had a relevant role in the market. Today too little attention is devoted to support managers as a group, thus providing procedures to reach the definition of a business strategy adopting common tools, supplying robust and formalized channels of communication to exchange information, means to keep track of all the steps followed to reach a decision or, even, of how the data on which the decision relies has been acquired, cleaned or processed.
4. **Tracking.** Not only it is important the decision, i.e. the business strategy, that emerges from the process, but the process itself. Speaking about governance, many studies pointed out that it is very relevant the compliance and the assurance of those processes which are closely related to the governance of an organization [13, 14]. If everyone chooses his way to gather, analyze and report, it is impossible to document all the steps that lead to some relevant prospects on which is based the definition of the business strategy. This is particularly mandatory for some documents such as Annual Reports, where concepts as compliance and assurance should be granted.
5. **Execution and Real Time**. SIS usually lack in reporting to management if the adopted business strategy has been correctly executed or, even, if it has been executed at all. Some authors stress the fact that even the best business strategy is ineffective if poorly executed [15]. Current SIS are not set to evaluate the execution of business strategy. Finally, some other authors suggest that a relevant issue in SIS could be Real Time processes [16]. Data gathering and strategic analyses are usually performed quarterly; studies seem to point out that a more frequent analysis (every month, or even every day) could greatly improve the effectiveness of strategy related processes.

Towards Strategy Management Systems.

To achieve a greater functionality within the decision-making process, we must upgrade from a Strategic Information System, capable of a mere support of the decision-making process, to a Strategy Management System (SMS) [17].

A SMS is an integrated system which:

- Supports all the six showed phases of the strategy management process in an integrated manner;
- Is capable to document properly all the processes, thus providing compliance to desired quality standards and assurance of correct flowing of data and information through all the organization;
- Supports the "Good Governance" of an organization, where Good Governance means: 1) protect the rights of all stakeholders; 2) have clear, well defined and objective decision-making processes; 3) continuously improve operational processes; 4) provide real transparency about finances and operations; 5) allow the Board, executives and managers to properly and effectively carry out their tasks [9].
- Is capable to identify the strengths and weaknesses in the execution of strategy, thus allowing managers to properly adjust strategy itself.

We may divide the operations of a firm in two broad categories: *Strategy Processes*, in which managers develop and define the strategy, assess and revise the strategy and manage the business; and *Execution Processes*, that regards all the actions taken to implement the assessed strategy to reach the expected results.

While the emphasis of SIS is on Strategy Processes, the SMS focuses on both, and the first processes are seen as a part of an ensemble which is not complete unless you perform also the other processes.

Execution processes at least should include:

- Managing financial assets, such as cash, accounts payable, accounts receivable, etc.;
- Managing customers; this includes measuring customer satisfaction and profitability, providing post-sales support, searching new customers, etc.;
- Managing products: create, produce, store and distribute products, R&D;
- Managing people: not only providing compensation and benefits, but also recruiting, hiring, handling careers, creating teams, etc;

A well implemented SMS gather and evaluate the relevant variables and focus on the definition of the strategy, properly documenting all the steps of the process, so it can be revised and repeated. Besides the development of the strategy, SMS is

used also to document and communicate the strategy itself to all the people involved, internal or external.

Moreover, a well implemented SMS performs continuously the gathering of relevant data, eventually in a Real Time manner, to be as much sensible as possible. Applying the stored processes, it is possible to check if the strategy is well executed and, more relevant, if the organization is reaching its goals, generating some warnings if the effective situation differs from the planned one.

Many tools in BIS or CPM arena could be easily converted from Strategic Information Systems to real Strategy Management Systems, especially because SIS can be considered the basis and the beginning of a SMS. But besides this fact, you have to keep in mind that SMS is a substantially new approach to strategy management, which is seen not only as the final result of a process involving all top managers, but also as a complete framework on which the organization has to reshape itself.

Conclusions

A well implemented Strategy Management System offers a greater functionality and utility than a mere Strategic Information System, even if the last includes modules dedicated to Business Intelligence and/or Corporate Performance Management.

This happens because:

1) SMS has a broader focus that keeps tracks of all elements of business performance;
2) SMS has a more structured way to think about and evaluate the entire business;
3) SMS is characterized by a consistent and repeatable framework for managing strategy execution, judgments, decisions, and goal setting;
4) SMS directly connects goals, strategy, and implementation.

The adoption of the SMS paradigm leads to an improved management and governance of the organization, by means of a transparent look at financial and operational data; the ability to measure performance against benchmarks and goals; and the ability to see exactly where tactics must be adjusted to meet strategic goals.

Finally, Strategic Management Systems help organizations to implement their strategies, as well as develop them, and generate the information needed to assess the effectiveness of the implementation of the strategy itself. SMS make a direct connection between financial, operational, and human resources data to provide a more complete view of overall activities; allow a direct comparison of goals and results; and provide full, accurate pictures of business performance and the operating environment to the Board of Directors, stockholders, and other external entities.

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