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**The balanced scorecard as a knowledge management tool: a
French experience in a semi-public insurance company**

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ABSTRACT

In this paper we present the Balanced Scorecard, a Strategic Control tool, which is quite famous all around the world and in the European countries. Its principle objective is to articulate planning decisions with control ones thanks to non-financial indicators. The Strategic Control and the Agency Theories constitute the foundation of this tool. But in Northern Europe, some specific Balanced Scorecard have been designed in the framework of the Knowledge Management Theory. To work, the Balanced Scorecard needs a sophisticated information system support.

Using two theoretical backgrounds, the Strategic Control approach and the Knowledge Management Theory, we analyse the relevance of the Balanced Scorecard. More particularly, we present the French situation. First, we show that the French managers believe that the Balanced Scorecard is a relevant management instrument to drive the firm's objectives. Second, we describe the Balanced Scorecard of a semi-public French insurance company.

Keywords: Balanced Scorecard; Strategic Control; Non-financial Indicators; Knowledge Management; French Experience

1. INTRODUCTION

The influence of the Anglo-Saxon scholars on management in Europe is great. Anglo-Saxon instruments like the Balanced Scorecard (now BSC) are quite famous in the European countries. In the United-States, the Strategic Control and the Agency Theories are frequently put forward to describe the BSC.

But in several firms of countries situated in the North of Europe, we observe some very specific BSC sometimes called “Intellectual Capital Scorecards”. These tools are designed in the framework of the Knowledge Management Theory.

In this paper, after a theoretical analyse, we describe the results of an inquiry conducted in France in 2005-2006. Its principal objective is to test the usefulness of the non-financial indicators in driving the firm’s objectives. Then, we analyse the development of a BSC in a French semi-public insurance company. We show that this tool has partly been built with a Knowledge Management perspective.

Our research question is: does the BSC represents a relevant tool to manage knowledge? The research methodology is first to explore the BSC and Knowledge Management literature. Second we present a longitudinal case study notably to examine the relevance of the Knowledge Management metrics.

In a first part, we analyse the BSC using the Strategic Control and the Knowledge Management Theories. In a second part, we present the results of our inquiry.

2. BALANCED SCORECARDS, STRATEGIC CONTROL AND KNOWLEDGE MANAGEMENT

2.1 Theoretical background

The BSC emerged in the USA at the end of the 80’s within the scope of the Strategic Control and the Agency Theories. First, we describe this theoretical background.

Since the historical work of Johnson and Kaplan (1987), the vast majority of the new management control tools have gained strategic and marketing dimensions. The most famous nowadays is the BSC (Kaplan and Norton, 1996, 2004).

The Strategic Control theory (Bromwich, 1990) implies to study the interactions between the strategic and the operational processes. A Strategic Control tool necessitates an overwhelming volume of data and informations from outside and inside the firm. It is a reason why there has been a crisis in the management control profession until the design and the development of integrated performance information systems tools (ERP, BPM, ...) More precisely, the Strategic Control approach emerged during the 1970s and has been developed since (Schendel & Hofer, 1979; Horovitz, 1979). There has been growing researches on this subject since the mid-1980s (Simmonds, 1981; Shank and Govindarajan, 1989; Bromwich, 1990).

So, according to the Strategic Control Theory, the first purpose of the BSC is to reconcile the control process with the strategic one. Moreover, Kaplan and Norton's version of the BSC is based on a disciplinary approach (Agency Theory, Jensen and Meckling, 1992). Kaplan and Norton use a competitive approach to formulate the strategy (SWOT and Porter's models, Porter, 1985). The strategy formulation and implementation are two separate steps. And the value creation is fundamentally based on the shareholders satisfaction.

More precisely, to analyse the organizational architecture (Jensen and Meckling, 1992) underlying a BSC, we can distinguish between the Contractual and the Knowledge Management Theories. Contractual ones (the Agency and Transaction Costs Theories for instance) suggest a disciplinary approach to manage a firm. In this context, the knowledge creation process is neglected because it is assumed to have no impact on the firms performances.

But significant researches using heterodox approaches called Knowledge Management Theories have been developed. The most famous ones are the Organizational Learning Theory (Argyris and Schön, 1978), the Resource-based View (Penrose, 1959) and the Core-competencies Approach (Hamel and Prahalad, 1990).

These theories have influenced deeply all the management areas. For instance, in the field of the Management Control, Simons (1995) has built the Interactive Control concept and Scandinavian scholars (Mouritsen and Larsen, 2005) have developed the Intellectual Capital notion, referring to the use of knowledge resources from a management control point of view.

Knowledge Management Theories postulate that knowledge is the main determinant of the value creation. The Resource-based View approach lies more precisely within the scope of the evolutionist theories, which postulate that managing the evolution of technical and organizational processes builds the firm's competitiveness.

Now, we examine more deeply the BSC using these two theoretical backgrounds, that is to say the Strategic Control and the Knowledge Management theories.

2.2 The Balanced Scorecard, a tool to align the organization on the strategy

According to Kaplan and Norton (1996, 2004), the BSC is a Strategic Control tool intended to articulate a company's mid-term strategy (from three to five years) with its operational control (see figure 1 & 2). It groups together several financial and non-financial indicators that describe the company's strategy (leading indicators) and its performances (lagging indicators) (see figure 3 & 4). Now, about one American company out of two uses the BSC. An European inquiry (Jouenne et al., 2005) shows that 41% of the European companies questioned use a BSC (35% in France).

According to Kaplan and Norton (see figure 1), the BSC is composed of :

- Four strategic perspectives: financial, customer, internal business process and learning and growth ones;
- Ten to fifteen strategic objectives distributed among the four perspectives;
- At least two indicators to measure each strategic objective;
- Targets;

- And initiatives to reach the targets.

Figure 1. The Balanced Scorecard (Kaplan and Norton, p. 76, 1996 b)

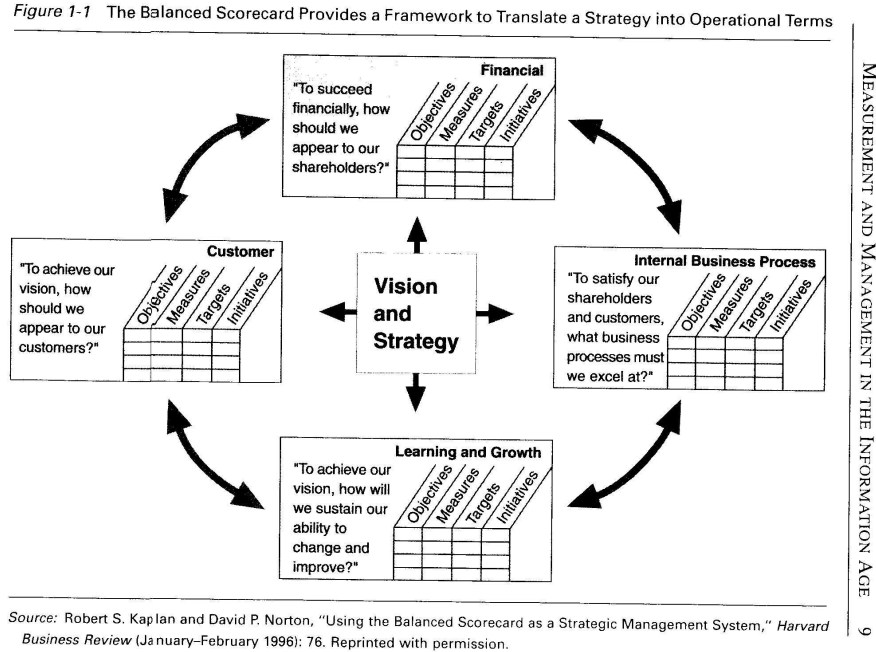
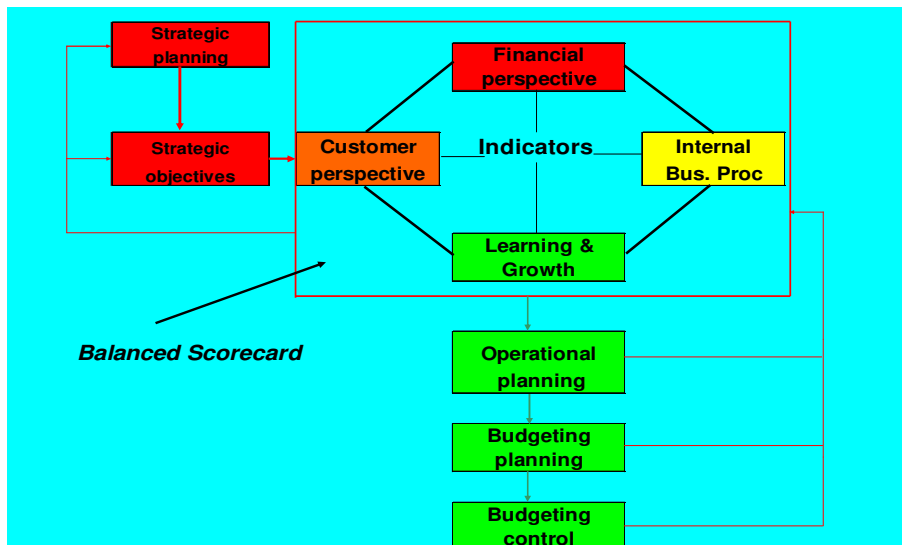


Figure 2. The BSC: A Strategic Control instrument



The figure 2 has three parts. On the left side, we represent the strategic process ("strategic planning" and "strategic objectives"). At the bottom, we can distinguish the control process ("operational planning", "budgeting planning" and "budgeting control"). And at the centre, we have the BSC.

According to Kaplan and Norton (1996), the BSC helps to correlate lagging and leading metrics so that a link could be established between the strategic management and the management control (figure 3 & 4). So, the purpose of the BSC is to establish a causal chain between indicators and strategic objectives. Kaplan and Norton (2004)

call it the “Strategy Map”. The Strategy Map is an hypothesis about a four stages chain of cause and effect.

We can distinguish two types of indicators. The lagging indicators are historical and express passed results. The leading indicators express the objectives of the firm and are prospective. Thanks to the BSC, we can see if improvements in the leading indicators lead to improvements in the lagging ones.

Figure 3. Leading indicators versus lagging indicators

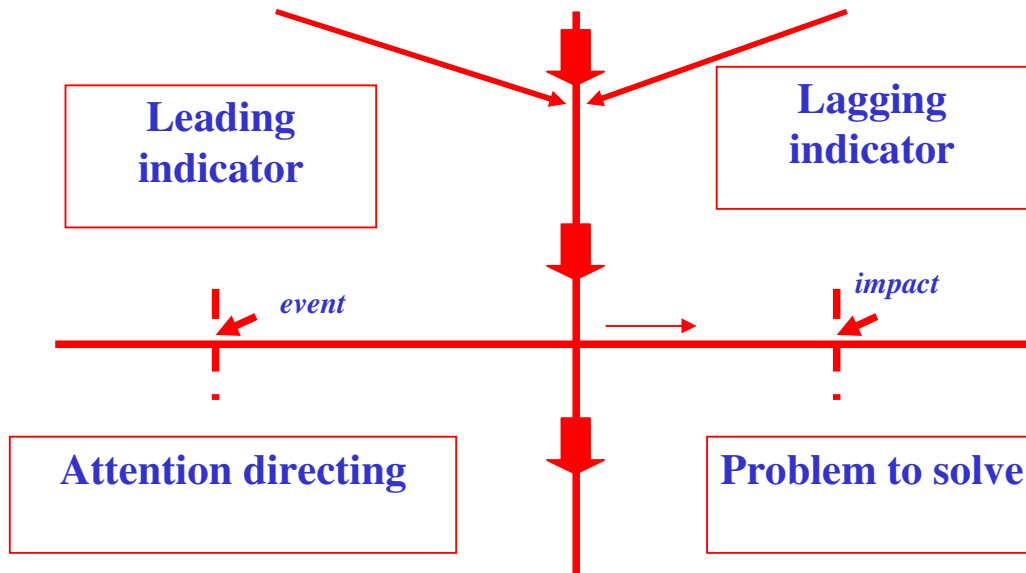
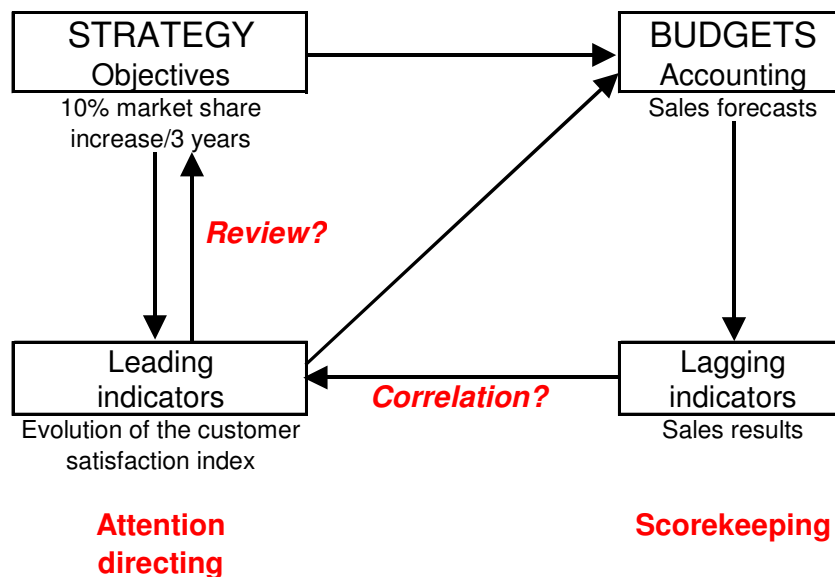


Figure 4. The main objective of the BSC: To link a company’s strategy to its budgets thanks to several indicators



Concerning the measures, several requirements can be made (Hoffecker and Goldenberg, 1994) :

- The measures have to be controlled.
- They should be easy to quantify.
- The project members involved have to understand the measures.
- And the measures must be relevant, reliable and as precise as possible.

However, a close review of Kaplan & Norton's model leads to the conclusion that the BSC fulfills the features of a disciplinary tool:

- To implement the BSC, we have to use of traditional strategic management approach (SWOT model), that is to say a competitive one.
- The strategy formulation and implementation are two separate steps which means a classical management process. The managers "think" and the agents produce.
- The value creation is fundamentally based on the shareholders and customers satisfactions. It means that the knowledge creation process is ignored.
- Finally, the principal objective of the BSC is to decline the strategy conceived by the team management. It is a "Goal Congruence" objective.

So, according to Kaplan and Norton, the BSC is a Strategic Control tool, but not a Knowledge Management one.

2.3 The Balanced Scorecard in a Knowledge Management context

In this part, we focus on the relationships between the BSC and the knowledge management. We notice that several BSC models try to integrate the knowledge management process within the organizational architecture of the firm.

In Northern European countries (Sweden, Finland, ...) we observe some specific BSC that we can call the "Intellectual Capital Scorecards" (Roos et al., 1997). They represent another type of BSC. They have been conceived in the frame of the Knowledge Management Theory. The Navigator, deployed by the Swedish insurance company Skandia, is the most widely known Intellectual Capital Scorecard (Edvinsson & Malone, 1997).

There are several ways to define the Knowledge Management. We choose a strategic definition. According to Sveiby (1997), Knowledge Management is "leveraging the intellectual assets of the company to meet defined business objectives".

The Resource-based View (RBV, Laroche & Nioche, p. 135-165, 1998) is a relevant Knowledge Management Theory for our developments because it concentrates on the strategic aspects of knowledge. The RBV lies within the scope of the evolutionist theories. The evolutionist theory postulates that managing the technical and organizational processes evolution builds the competitive position. The RBV is based on five main hypotheses. First, the organizational processes generate a set of routines. Second, research and development play a major role according to their capacity to modify the routines. Third, actors are subjects to bounded and procedural rationality, hence the interest of the advocates for the RBV for the processes of organizational

learning. Fourth, every organization has an idiosyncratic character. Fifth, the company is supposed to evolve in an uncertain environment within which the markets of production factors are incomplete and imperfect.

Several scholars distinguish between resources and competencies. Resources are defined as discrete strategic assets (individual know-how, production capacities) and competencies as strategic assets allowing the implementation of other production factors (collective know-how and capacity to coordinate several production processes). Instead of distinguishing the resources from the competencies, some typologies allocate them between tangible & intangible assets. However, few of them mention the existing interrelations between the resources and the competitive advantage. Hall (1993) suggests a different classification. He separates the resources which depend on individuals (for example reputation) from those which do not (for example databases). He makes the distinction between the capacities (or abilities) of the company based on assets, from those based on competencies. Finally, he associates a capacity (weighting) to every intangible resource. This allows to characterize more precisely the strategic resources.

Within the framework of the RBV, the classic strategic process is reversed (Grant, p. 116, 1991). It consists at first to proceed to an internal analysis that allows to identify the strategic assets, then, to measure and characterize the resources and competencies. In the end, the method suggests to operate an external analysis in including the identified resources and competencies.

The major critic addressed to the RBV (Shay & Rothaermel, 1999) relates to the weakness of the dynamic of the RBV frame because of a lack of analysis of the competitive system. The models issued from the RBV do not analyse the competitive system and therefore render difficult to separate the most important resources at a specific time. In our opinion, the argument stating the weakness of the dynamic is due to the dissociation of the two sequences of the strategy analysis: first the process of strategy formulation and second the competitive positioning. Yet, such approach becomes less relevant as the environment gets more turbulent and complex where any projected analysis and any planning can be made. But the RBV remains an appropriate theory to analyze the BSC.

Sveiby (p. 3, 1997) distinguishes between four different types of knowledge management:

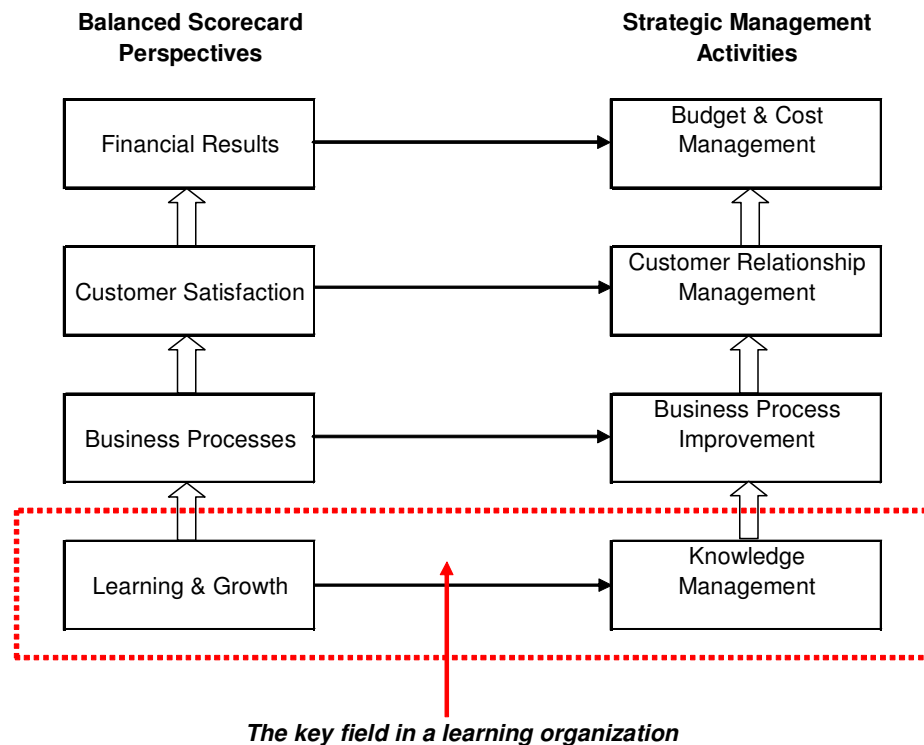
- Valuing knowledge that is to say quantifying the value of the organization's knowledge-base. We call it the Intellectual Capital approach.
- Exploiting intellectual property,
- Capturing project-based learning,
- And managing knowledge workers.

In this paper, we concentrate on the first type of knowledge management. We emphasize the importance of quantify knowledge. In this context, the main objective of a BSC centred on knowledge management is to convert human capital to structural capital (Roos et al., 1997).

But we have to keep in mind that two types of knowledge coexist (Nonaka and Takeuchi, 1995): the explicit (formal codified knowledge) knowledge, and the implicit (informal uncoded) knowledge, difficult to quantify.

In a learning organization, the “learning and growth” perspective has to be central. Indicators about competencies are the key success drivers. The figure 5 presents the linkages between the BSC perspectives and the strategic management activities, according to Kaplan and Norton.

Figure 5. Linkages between Balanced Scorecard perspectives and strategic management activities (adapted from Balanced Scorecard Institute¹)



With the traditional version of the BSC, only one perspective is linked to the knowledge management of a firm. And Kaplan and Norton explain that we have to develop employee surveys and analyses of training data to measure the degree of learning and growth of the firm. But many American experiences show that frequently, the learning and growth perspective is neglected. And according to different studies (Fairchild, 2002; the American Productivity and Quality Center project, APQC, 2001), it is important to be able to measure the value of knowledge as knowledge management becomes more structured and widespread in a firm.

It is why we observe different forms of BSC centred on this perspective. We develop this point in the paragraph 3.1.

2.4 The electronic supports of the Balanced Scorecard

To work, the BSC needs a sophisticated electronic support to test correlations between indicators. Moreover, to determine the correlated measures across multiple domains,

¹ <http://www.balancedscorecard.org>

we need a data centric technology vision enabling production of reporting and decision analytics on a dynamic and efficient basis. Thanks to an ERP software, we can determine relationships and correlations across seemingly unrelated data elements, using pattern recognition technologies and advanced statistical methods.

Frolick and Ariyachandra (p. 42, 2006) describe the historic evolution in decision support. The authors explain that the more recent solutions (called BPM solutions) fit well with the BSC approach. These solutions are composed, as the BSC, of four core processes: to strategize, plan, monitor and analyze and to take corrective action.

Table 1 . The historic evolution in decision support
(From Frolick and Ariyachandra, p. 42, 2006)

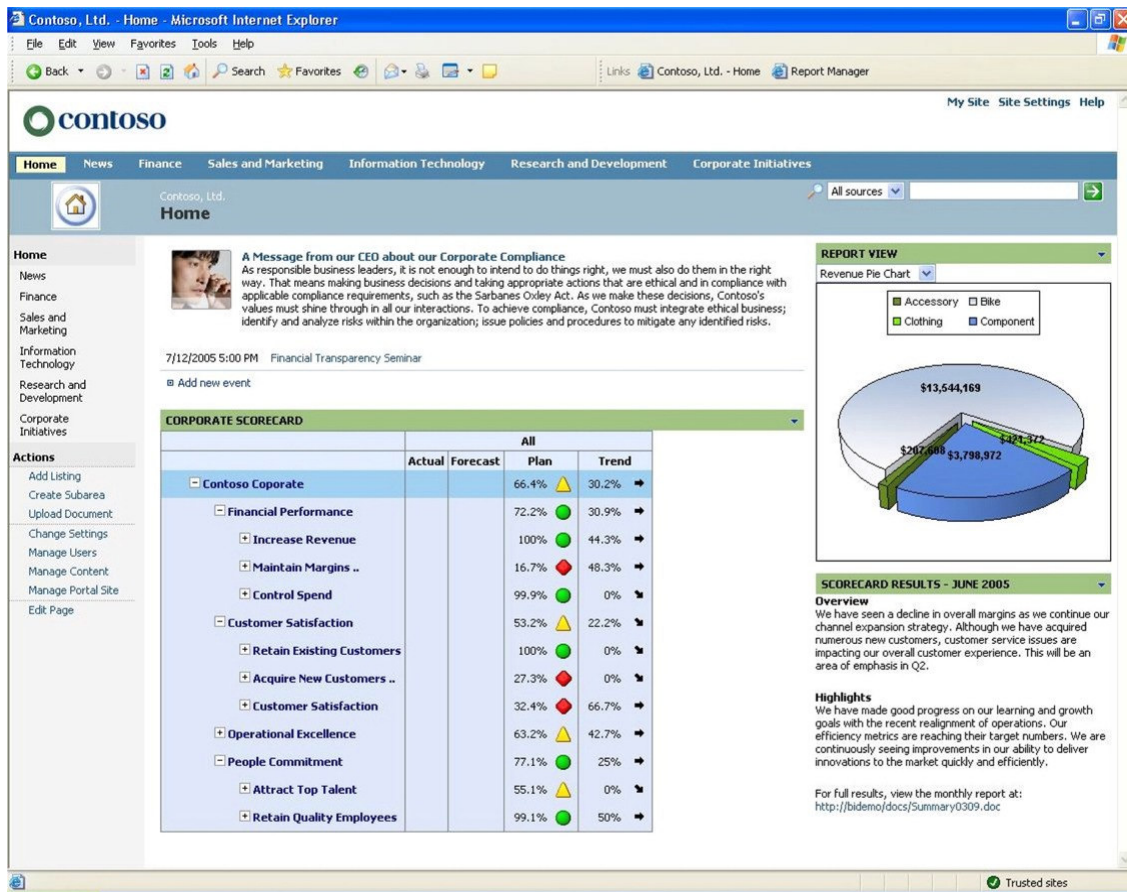
Decision support system (DSS)	A computer-based support for management decision makers who are dealing with semistructured problems
Executive information system (EIS)	A computer-based system that serves the information needs of top executives
Data warehouse (DW)	A subject-oriented, integrated, time-variant, and non-volatile collection of data in support of decision making
Business intelligence (BI)	A broad category of applications and technologies for gathering, storing, analysing, and providing access to data to help enterprise users make better business decisions
Business Performance Management (BPM)	A series of business processes and applications designed to optimize both the development and the execution of business strategy

Within the BPM tools, we have the Enterprise Resource Planning (ERP) softwares that can be defined as customizable, standard application softwares which include integrated business solutions for the core processes and the main administrative functions of an enterprise. An ERP can be a decision support tool for a BSC. We have other key technologies to support a knowledge BSC: intranets, groupware and online databases.

Several integrated information solutions have been developed to support the BSC. For instance, Microsoft has designed the “Microsoft Office Business Scorecard Manager 2005”². The figure 6 presents this product.

² See: <http://www.microsoft.com/office/solutions/scorecards>

Figure 6. Microsoft Office Business Scorecard Manager 2005



3. THE FRENCHINSUR BALANCED SCORECARD: A FRENCH EXPERIENCE ANALYSIS

3.1 The Intellectual Capital Scorecards

The concept of Intellectual Capital belongs to the Knowledge Management stream. But the former gives the emphasis to measuring knowledge assets, whereas the latest gives the emphasis to managing knowledge assets. It is the reason why we favour the concept of Intellectual Capital in this paper.

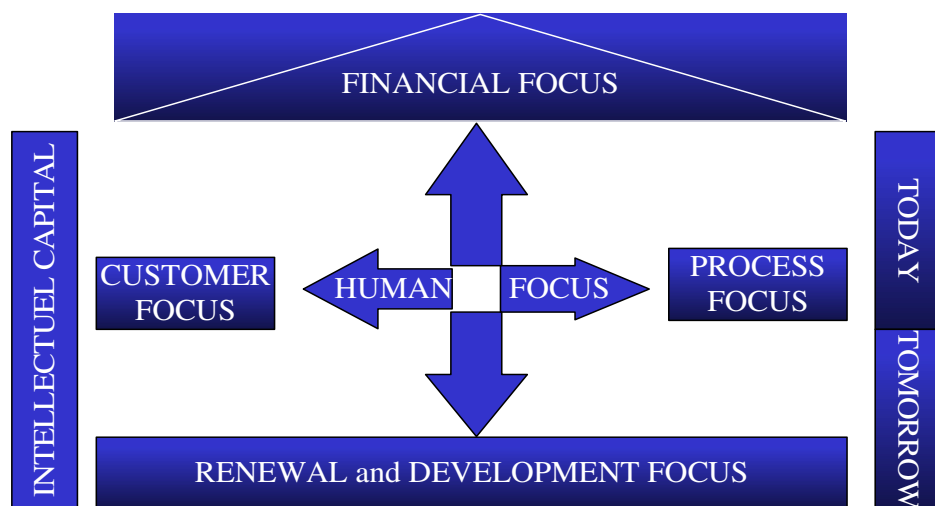
The Intellectual Capital Scorecards models (Roos et al., 1997) represent another type of BSC. The Navigator, conceived by the Swedish insurance company Skandia, (see figure 7), is the most widely known and complete Intellectual Capital Scorecard (Edvinsson & Malone, 1997). Still, these instruments remain derived from the BSC. With an Intellectual Capital Scorecard the classical strategic process is reversed (Grant, p. 116, 1991). It consists at first to proceed to an internal analysis that permits to detect the strategic assets, then, to measure and characterize the firms resources and competencies. At the end, the method suggests to operate an external analysis in including the identified resources and competencies. Mintzberg & Waters (1985) name this trend "the process strategy". They explain (p. 270, 1985) how the

formulation originates within the processes. They are at the same time deliberate and emergent.

According to their designers (Sveiby, 1997; Edvinsson & Malone, 1997) the major specificity of the Intellectual Capital Scorecards is to allow an analysis of the intangible resources. They are designed according to the RBV (Roos and Roos, 1997). The Skandia value scheme (the Navigator, see figure 7) for instance divides intellectual capital into “human capital” (knowledge, know-how, attitude, behavior and intellectual agility) and “structural capital” (organization, relations with partners, renewal and development). It seems possible to draw a parallel between this typology of the Intellectual Capital and the typology presented by Hall (1993). Hall separates the organization capacities based on employees competencies (human capital) from other assets non-based on employees (structural capital). Edvinsson and Malone (1997) define intellectual capital as “the possession of knowledge, applied experience, organizational technology, customer relationships, and professional skills that provides Skandia AFS with a competitive edge in the market”.

Despite little differences, the Navigator and the Intellectual Capital Scorecards have both been conceived in the frame of the RBV. Moreover, Grant (1991), a RBV specialist, specifies that the company's capacity to manage individual competencies and transform them into collective competencies is an important element of a RBV strategy. Edvinsson and Malone (1997) share this conception. They consider the Navigator able to measure the transformation of human capital into structural capital and the management quality concerning the flows between human and structural capital.

Figure 7. The Navigator of Skandia



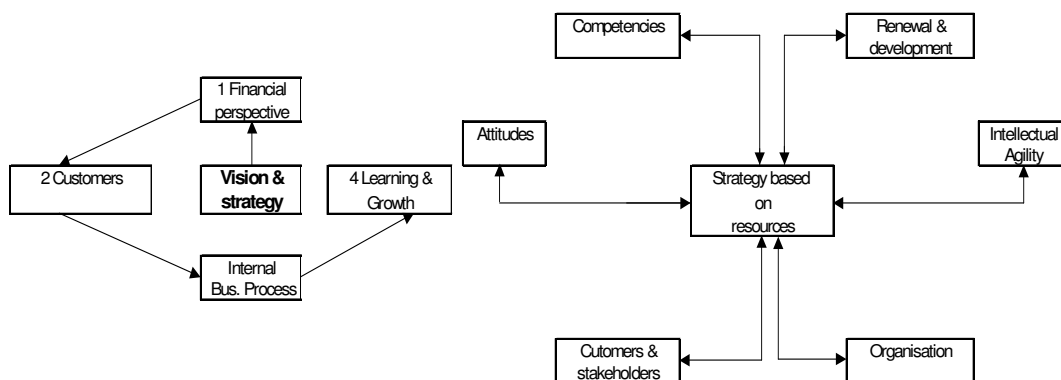
The models of Intellectual Capital Scorecards focus mostly on the internal dimensions of the organization (see Danish Trade Industry and Development Council, 1997). A first group of scorecards gives more importance to the human resources (this is the case of the Navigator or of Telia's Intellectual Capital Scorecard). A second group favours technological and informational resources (for example Carl Bro, Systemic) and a third group adopts a mixed perspective (for example the EVITA model of ABB, Celemi).

With the table 2, we present a complete typology of the BSC models and with the figure 8, we compare the Anglo-Saxon version of the BSC with a model of Intellectual Capital Scorecard.

Table 2. A typology of the Balanced Scorecards models

		Examples from litteratures	Examples from our inquiry	Examples of indicators
Anglo-Saxon BSC	external dimensions privileged	Bank of Montreal		service rate (%), public image (enquiry)
	Well-balanced approach	Mobil, NRO, Pioneer Petroleum	NCR Europe and France, Axa, Schindler	market share/leaders, EVA, revenues/employee
	Internal dimensions privileged	Total Quality models	Valéo, Afpa (continuing education)	customers' level of satisfaction
Scandinavian BSC: Intellectual Capital Scorecards	human capital privileged	Skandia, Telia, Ramboll	GrandVision, French insurance company, the French Post	enquiry/strategic awareness, evolution of the competencies
	structural capital privileged	Consultus, Carl Bro, Systematic		

Figure 8. Comparison between the Anglo-Saxon BSC and the Intellectual Capital Scorecards



Last important point concerning the deployment process. Kaplan and Norton suggest a top-down process to implement a BSC, which fits with a disciplinary approach. But to set up an Intellectual Capital Scorecard as a knowledge management tool, we need a bottom-up process. Roy for example (1999), describes the bottom-up approach to build the Skandia's Navigator through the use of an intranet network called the Dolphin system. This shows that the strategy is developed interactively.

3.2 The Frenchinsur Balanced Scorecard

In a first time, we investigate the interest for the BSC expressed by French managers through an empirical research based on a questionnaire. Then, we describe the main elements of a longitudinal case study.

In 2005-2006, we sent 1 000 questionnaires to executives of manufacturing firms. We analyse data from 96 survey responses. The survey instrument was evaluated in a limited pre-test by several business professors and managers from different firms. The sample is homogeneous. We have questioned managers with comparable responsibilities: chief executive officers for the smallest firms, responsibility center managers for bigger ones and quality and supply chain managers and plant managers for the biggest.

Do French managers see the BSC as a new trend or a truly useful managerial integrated information system? We conduct an inquiry:

- First, to test the usefulness of the BSC in driving the firm's objectives. More precisely, we want to know if the reasons why using non-financial indicators differ from a disciplinary to a knowledge viewpoint and if the indicators chosen by a firm are coherent with the objectives defined.
- Second, to test the link between the use of the BSC and performance.
- And third, to test the link between the use of non-financial indicators and the features of the firms.

The results are globally positive for the first group of hypotheses. As such, we demonstrate that the managers associate the BSC with strategic objectives, which is the theoretical basis of the BSC.

Then, we conduct a case study in a French semi-public insurance company that we call Frenchinsur³. The figure 9 presents the BSC model of Frenchinsur and the table 3 its strategic objectives. This model is close to the Intellectual Capital Scorecard model.

³ To keep the confidentiality of the firm.

Figure 9. The Frenchinsur Balanced Scorecard

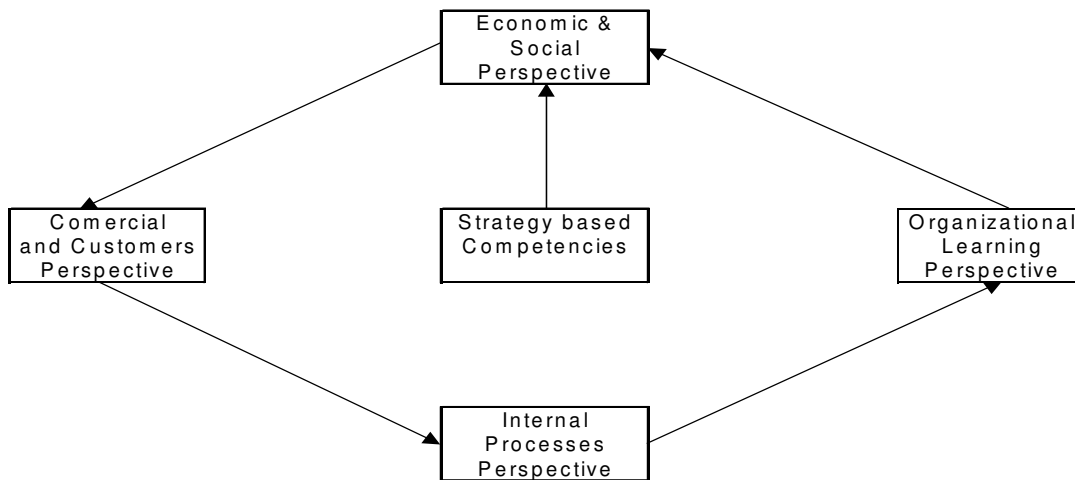


Table 3. The Frenchinsur strategic objectives

Economic & Social Perspective: 1-To reach objectives of profitability 2-To be creative (to develop new solutions) 3-To develop subsidiaries	Internal Processes Perspective: 7-To be an innovative & learning organization 8- To adapt the processes 9-To develop performant management instruments
Commercial & Customers Perspective: 4-To increase market shares 5-To develop new partnerships 6-To develop relevant new services	Organizational Learning Perspective: 10- To develop employees' motivation 11- To increase in-service training 12- To develop employees' competencies

Each perspective deals with knowledge management. The “economic and social” perspective synthesizes the others expressing the wish to be profitable (first objective), innovating (second one) and conquering (third one). The “commercial & customers” perspective insist on the development of new partnerships and services, the “internal processes” one on structural capital and the “organizational learning” one on human capital.

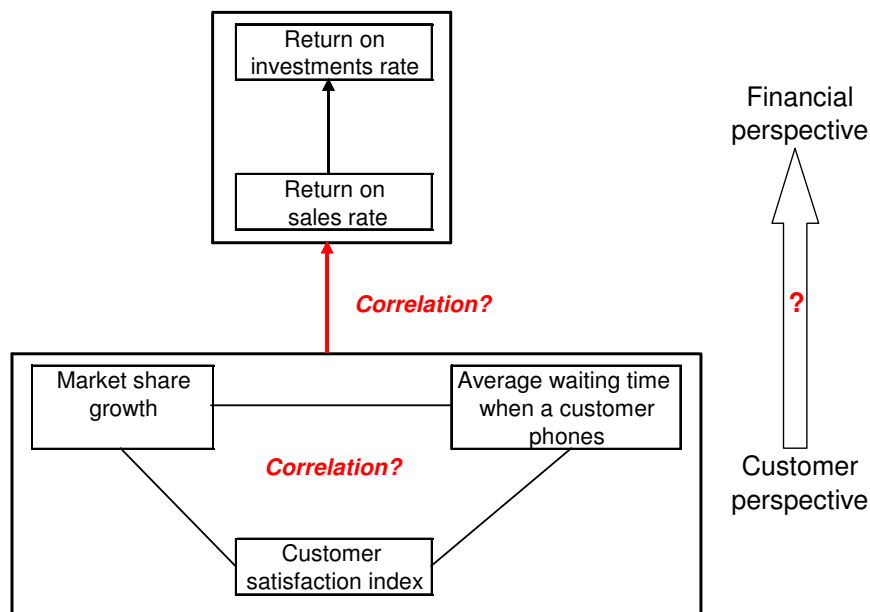
The table 4 presents several indicators of the Frenchinsur BSC centred on knowledge aspects.

Table 4. A list of a few indicators centred on knowledge management

Indicators
Information management systems efficiency
% administrative tasks/creative tasks
Training program efficiency
Speed of the information flow
Degree of technological evolution
Cycle time from order to delivery
Number of new partnerships contracted since 3 years
Marketing positioning-level of success
Number of new commercial proposal launch per year
Percentage of defective commercial solutions shipped
Degree of cohesion of the working teams
Employee commitment level

Figure 10 presents an extract of the Strategy Map of Frenchinsur which uses an ERP system. The arrows show possible correlations between several indicators: two leading indicators, the “customer satisfaction index” and the “average waiting time when a customer phones” and three lagging ones, the “market share growth”, the “return on sales rate” and the “return on investment rate”. We can assume that when the “average phoning waiting time” decreases, the “customer satisfaction index” will increase and then the “market share”. If the correlations are validated, then the Strategy Map demonstrates a link between operational and strategic and marketing management objectives.

Fig. 10. Extract of the strategy map of a Frenchinsur



Like the Skandia Navigator, the process observed at the beginning (2005) for Frenchinsur was bottom-up, thanks to a dynamic ERP, an intranet and other collaborative communication systems. For instance, small groups projects were composed to design relevant indicators. These groups were transverse: employees from different fields and at different level of responsibilities. Brainstorming processes were used.

But one year later, we observe some changes about the Frenchinsur BSC development process. Knowledge management indicators were quite difficult to measure so that some “expert” managers decided to abandon some of them (and more particularly indicators needing inquiries to be measure: “degree of cohesion of the working teams”, “employee commitment level”, ...) In this way, the BSC became an expert tool more than a knowledge management one.

4. CONCLUSION

This research was an opportunity to review the concepts of Strategic Control and Knowledge Management, and to examine one of the most popular management tool, the BSC. We show that this instrument is compatible with a knowledge management program in a firm and we present some experiences in Northern European countries. Our inquiry confirm the interest in France for the BSC which is appreciated as a relevant tool, able to articulate the strategic and the operational management. We present an experience showing that a BSC can be centred on knowledge aspects. But we also show that the design of knowledge management measures is quite difficult. So an “Intellectual capital Scorecard” process seems very fragile. It needs a care attention and a strong support from the CEO and the other principal managers.

In our quantitative inquiry, we also conclude that the French managers believe that there is no direct link between the non-financial indicators and the performance of their firms. Besides, it seems that a break exists between instruments used to manage (like the BSC) and to monitor the knowledge creation and the financial performance measures. In our opinion, this partly shows that for most managers, the main determinants of performance are strategic choices, competitive advantages and marketing positioning and not directly knowledge management. But this point needs in-depth researches.

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