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The Strategic Scorecards - An instrumentation of the strategic management accounting

Exploration of a concept, instrumentation and results from a french empirical study

I describe in this study a generic model of strategic management accounting instrumentation: the strategic scorecards. In order to build this generic model, I review in the existing literature the concepts of Strategic Control and Strategic Management Accounting (SMA). I present the characteristics of these concepts and analyse the reasons why they emerged. I show how the strategic scorecards are an instrumentation of the SMA in studying the most widely known and esteemed scorecards: the Balanced Scorecards (Kaplan & Norton, 1996) and Skandia's Navigator (Edvinsson & Malone, 1997). I then clarify the outlines for a generic model of strategic scorecard and disclose an "a priori" typology of this instrument.

I investigate the interest for Scorecards from french managers through an empirical research based on a questionnaire. Using a typological analysis, I present five categories of strategic scorecards and the characteristics of the companies associated with the different types of scorecards. Finally, I present results of fifteen interviews confirming the previous classification. French managers underlined some problems in integrating the operational and strategic dimensions of management accounting. In conclusion, french management accounting evolves to a more strategic and external conception.

CONCEPT OF STRATEGIC MANAGEMENT ACCOUNTING AND UNDERLYING INSTRUMENTS

Although sharing most of the same fundamental assumptions, the two concepts of Strategic Control and Strategic Management Accounting have developed two separate fields of management tools. Both underline the strong interrelations existing between Strategic Management and Management Control. In order to be an efficient decision tool, a strategic control system must closely follow each step of the implementation of the strategy and the achievement of pre-defined objectives.

FROM MANAGEMENT CONTROL TO STRATEGIC CONTROL AND STRATEGIC MANAGEMENT ACCOUNTING

The conventional developments in the field of management control (Johnson & Kaplan 1987) disclose an opposition among the process of strategic management, the process of management control and the process of operational control. Moreover strategic control and strategic management accounting are focused on the existing relations between strategic management and management control. For Anthony (1965:17), management control is "the overall of the financial and accounting tools of check on the basis of predetermined objects", in other words, a process of planning verification.

The concept of strategic control emerged during the 1970's and has been developed since (Sarrazin, 1978; Schendel & Hofer, 1979; Horovitz, 1979). Some authors described the relations between strategic planning and budget making (Vancil, 1973; Lorange & Scott Morton, 1974; Lorange & Vancil, 1976). Newman (1975) presented a more constructive and future or "forward" oriented model. The concept of strategic management accounting was

formulated in the beginning of the 1980's (Simmonds, 1981). Researches on this subject have kept increasing since then (Shank & Govindarajan, 1990; Bromwich, 1990).

The most significant differences between the two concepts are the applied and operational purposes. This may be explained by the difference of scientific culture of the authors from both fields. Academics in strategic control are all strategic management professors and academics in strategic management accounting are mainly management control researchers. I believe that this divergence is a useful source for management tools critical thinking.

After reviewing the different definition of strategic control and strategic management accounting, I propose a typology of the different versions of strategic management accounting (terminology now used for both works in the field of strategic control and works in the field of strategic management accounting). Three versions are distinguished.

- a simple or minimalist version of strategic management accounting: management control is a tool to strategy formulation (Camillus & Grant, 1980; Simmonds, 1981; Lorange et al., 1986; Bromwich, 1990). Management control proceeds, in this case, of an external vision of the company (Teller, 1999:91).
- A median version : management control helps to build the corporate strategy (Shank & Govindarajan, 1989 & 1990; Wilson 1995; Band & Scanlan, 1995; Oldman & Tomkins, 1999). This version captures the management control based on the competitive advantage theory.
- A large version. Management accounting is itself a component in the formulation of the strategy (Simons 1990; Band & Scanlan, 1995; Teller, 1999). This version is, so far, the most innovative approach in strategic management accounting.

The principal reasons to implement a strategic management accounting process given in the literature lie in the evolution of the environment. This evolution is described in successive stages: stable & predictable to, unstable & difficult to anticipate, to turbulent & unpredictable. As a consequence, control tools must include external and leading indicators (strategic, prospective) and integrate them into the navigation of the company. Those indicators have to be articulated with the traditional internal financial indicators. Some other considerations are presented in the literature but are not developed here. In my opinion, strategic management control receives much attention due to human resources management and to the increasing complexity of organizations decisional processes.

THEORETIC EXPLORATION OF THE STRATEGIC DIMENSION OF STRATEGIC MANAGEMENT ACCOUNTING PROCESSES

Types of management control associated to adaptive strategies

Nature of the relation between strategic management and management accounting.

Two trends characterize the literature in Strategy (Lauriol 1999). The first one focuses on the company in its environment. The second one focuses on the study of the processes of strategy formulation. In the first trend, I distinguish the adaptative strategies to the proactive strategies. The adaptative strategies belong to the competitive advantage approach (Porter, 1985) which has its origins in the industrial economic theory. In contrast, the proactive strategies break with the standard industrial economic theories (Boissin et al, 1999).

As Teller (1999) explains, the adaptative strategies (SWOT model: strengths-weaknesses, opportunities-threats) are designed to a type of management control focused on the financial and shareholder value or on the competitive advantage. Standard management control is

based on an "heteronomous" or deliberated approach to the corporate strategy (adaptative strategy) in the trend that studies the company in its environment. In this classical approach management control stays dependent on the strategy in a one-way relation.

Most of the authors in strategic management accounting rely on this approach of the strategy (Teller 1999:59) as well as all the works classified in the first and second version of the strategic management accounting (see Table 1). In these models, the relation between the strategy and the control is thought excluding operationalization (action). Nowadays, it becomes more difficult to decline the strategy at an action level (see the developments about complexity) although, this was exactly the first role assigned to management control (Johnson & Kaplan, 1987).

Strategic management models which make possible an interactive relation between Strategy and Control.

The Resource Based View (Laroche & Nioche, 1998: 135-65) 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 Resources Based View approach is based on 5 main hypotheses. First, the organizational processes generate a set of routines. Second R&D 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 theory 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.

The different evolutionist authors distinguish the notion of resources from the one of 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 don't (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, 1991: 116). 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 renders difficult to separate the most important resources at a specific time. In my 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.

A third trend exists between the "heteronomous" strategies (deliberated strategies) and the voluntarist strategies (emergent strategies): it consists in adapting the strategy as soon as it is implemented. Mintzberg & Waters (1985) name this trend "the process strategy". They explain (1985:270) how the formulation originates within the processes. They are at the same time deliberate and emergent.

In France, Avenier (1997) calls this approach "the strategy along the way" and Koenig (1996) "the interactive strategy". It seems to me relevant to apply the models stemming from the RBV with the framework of an interactive strategy conception. This conception consists in defining a "mission" clarified with objectives. These objectives would appear gradually from the confrontation of the vision of managers to the real events.

The large version of the strategic management accounting requires an interactive strategic process. Teller (1999:55) explains that an innovative version of strategic management accounting needs an interrelation between the formulation and the implementation of the strategy. Therefore, the interactive strategy process is inspired, in different levels, from heteronomous and voluntarist strategies, according to the characteristics of the company and its environment.

SMA developments likely to be associated with the heterodox approaches in strategic management.

Only a few authors have proposed significant strategic management accounting developments using heterodox approaches to Strategy. Newman (1975) suggested the adoption of a control process, called "the steering control". He explained how managers must define goals accepted by workers. He emphasizes on the participation of employees to secure understanding and acceptance to this management control process. Lorange (1984 and Lorange *et al.* (1986) proposed the notion of "strategic leap control" designed to turbulent environments. Using the strategic leap control, the objectives are modified along with the strategy. More explicitly, Simons (1990, 1992) developed the concept of "interactive control systems" which collects data on strategic uncertainties. This type of control needs "not to focus on the implementation of intended strategies, but rather on the formation of tomorrow's strategy" (1992:48).

THREE VIEWS ON THE STRATEGIC MANAGEMENT ACCOUNTING

Strategic management accounting is based on a process approach of management accounting. The company is a network of horizontal, flat and transverse structures where the activities are organized according to market imperatives. The development at the bottom of the process constitutes a fundamental driver to integration. In particular the ABC method (Activity Based Costing), ABM (Activity based Management) and ABB (Activity Based Budgeting) represent competencies-based tools. I conclude on the existence of a significant relation between the processes and the competencies of a company, therefore, that a widened approach of strategic management accounting needs a RBV approach of the strategy.

The third version of SMA is based on a "core competencies" approach (Hamel & Prahalad, 1994). It supposes both strategic and financial analysis, a strategic process extended to stakeholders (customers, suppliers, employees, community, etc...). To sum up, four types of management control can be distinguished:

- the management control with the financial focus. The principal tools are the conventional budgets and reporting sheets. These tools use exclusively financial data and are limited to a one year period. If the period exceeds one year, the tools of strategic management are more adapted.

- Two versions of the strategic management accounting: a minimalist version and a median version. Researchers in the field of strategic control have designed new tools including the strategic budgets and operational budgets dimensions (Camillus and Grant, 1980; Lorange, 1984; Lorange and al., 1986). But the restrictive nature of these instruments remains. They belong the minimalist version. For the median version, researchers in strategic management accounting consider that budgets have to be completed with other approaches. Simmonds (1981) & Bromwich (1990) suggest to use qualitative and external measures with three dimensions of analysis: the products & customers dimension, the competitive dimension and the environmental dimension. Shank & Govindarajan (1989) have developed an operational model with the definition of Key Success Factors, determined in using a competitive analysis of the environment and an analysis of the internal processes of the company, with the help of the ABC method.
- The large version called the Integrated SMA. Strategic control and strategic management accounting specialists have proposed no significant developments.

The table 1 describes the typology of the SMA.

THE BALANCED SCORECARD, INSTRUMENTATION OF THE MEDIAN VERSION OF THE SMA

The BSC (Kaplan & Norton, 1996) is an example of strategic scorecard. Figure 1 summarizes the main characteristics of this tool. On many aspects, the BSC responds to the characteristics of a strategic management accounting tool. Teller (1999: 220) believes that the BSC is an instrumentation of SMA for the following reasons:

- the BSC is a process approach to the organization,
- the strategic and financial analyses are equally considered,
- and the BSC aims to be a global corporate performance analysis (financial analysis, customer analysis, processes & innovation analysis, organizational learning analysis).

However, a close review of Kaplan & Norton (1992, 1993, 1996a, 1996b) leads to the conclusion that the BSC does not fulfill all the principles of the large version of SMA:

- use of traditional approach to strategy (SWOT model, 1998: 62-7),
- the formulation and implementation of the strategy are separate steps,
- the strategic value is fundamentally based on customer satisfaction and depends on the financial value.

Table 1. Synthesis about the interrelations of the strategic processes and the management control processes.

The three versions of the SMA	Types of research	Characteristics	Some authors
Minimalist version	strategic control	articulation budgets/ strategic plans	Schendel et Hofer (1979)
	strategic management accounting	measures about competitive environment, customers & products	Simmonds (1981), Bromwich (1990)
median version	strategic control	checking the validity of the strategic plan hypotheses	Schreyogg et Steinmann (1987), Preble (1992)
	strategic management accounting	external & internal indicators combined	Ward (1993), Clarke (1995)
	strategic cost accounting	articulation competitive analyses / value chains analyses and key succes factors analyses	Shank et Govindarajan (1989), Wilson (1995)
widened version	strategic control	interactive strategies, formulation of premises, control by employees	Hrebiniak et Joyce (1986)
	strategic management accounting	Mintzberg's strategic approaches	Carr et Tomkins (1996)
	interactive strategic control	management control in the heart of the process of the strategic forming	Simons (1990, 1992, 1995)

The minimalist version of the SMA is embodied in the Competitive Scorecards (PIMS program: Anderson & Paine, 1978; Noon & Bates, 1993) and in the stakeholders Scorecards (Atkinson, 1997).

The BSC is more comprehensive than those 2 models because it insists on a balanced perspective of external and internal analysis. The BSC has also been conceived on the basis of the following 3 principles of SMA (Skank & Govindarajan, 1989):

- a strategic approach based on the principles of competitive advantage (Porter, 1985),
- a processes approach to the organization, implying the use of ABC and ABM methods by management control,
- and Key Success Factors establishment, very close to Kaplan & Norton's leading indicators.

I conclude that the BSC fulfills the principles of the median version of the SMA.

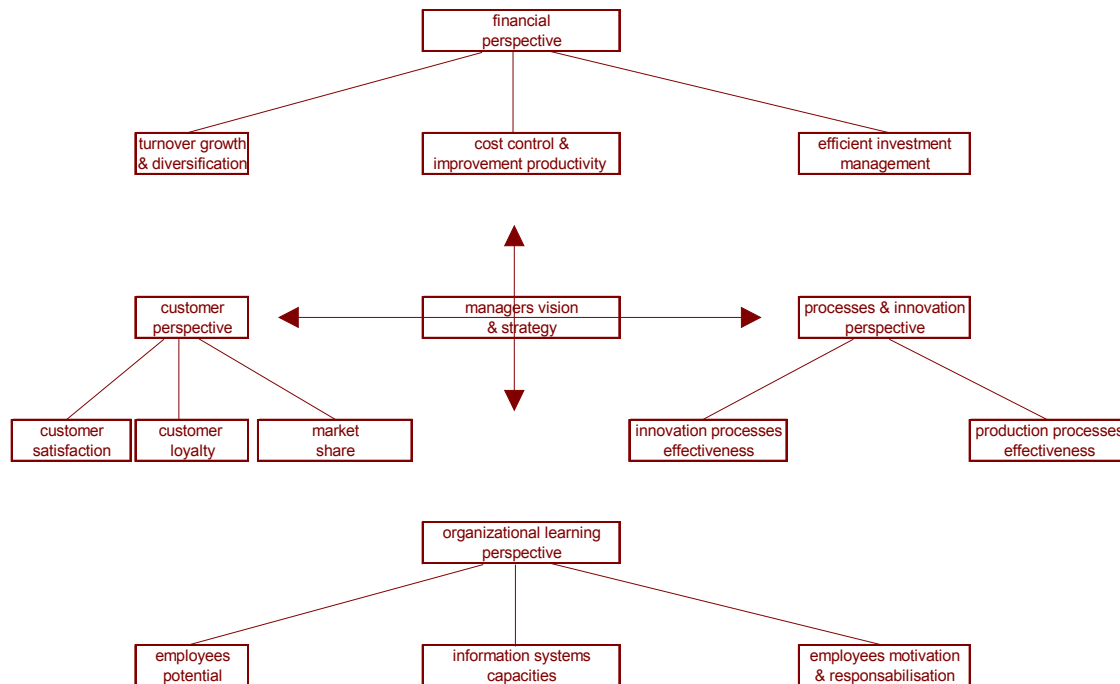


Figure 1. The Balanced Scorecard (adapted from Kaplan and Norton, 1996).

THE INTELLECTUAL CAPITAL SCORECARD: AN INSTRUMENTATION OF THE LARGE VERSION OF THE SMA ?

The models of intellectual capital scorecards (Roos et al., 1997) propose another type of Strategic Scorecards. The Navigator, conceived by the swedish insurance company Skandia, (see figure 2), is the most widely known and complete intellectual capital scorecard (Edvinsson & Malone, 1997). Still, these instruments remain derived from the BSC.

Their specificity, according to their designers (Sveiby, 1997; Edvinsson & Malone, 1997) is to allow an analysis of the intangible resources. They are designed according to the RBV theory (Roos and Roos, 1997). The Navigator separates the Human Capital (Knowledge, know-how, attitude, behavior and intellectual agility) to the Structural capital (organization, relations with partners, renewal and development). It seems to me possible to draw a parallel between this typology of the intellectual capital and the one presented by Hall (1993). Hall separates the organization capacities based on employees competencies (human capital) to other assets non-based on employees (structural capital).

Despite several 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 *et al* (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.

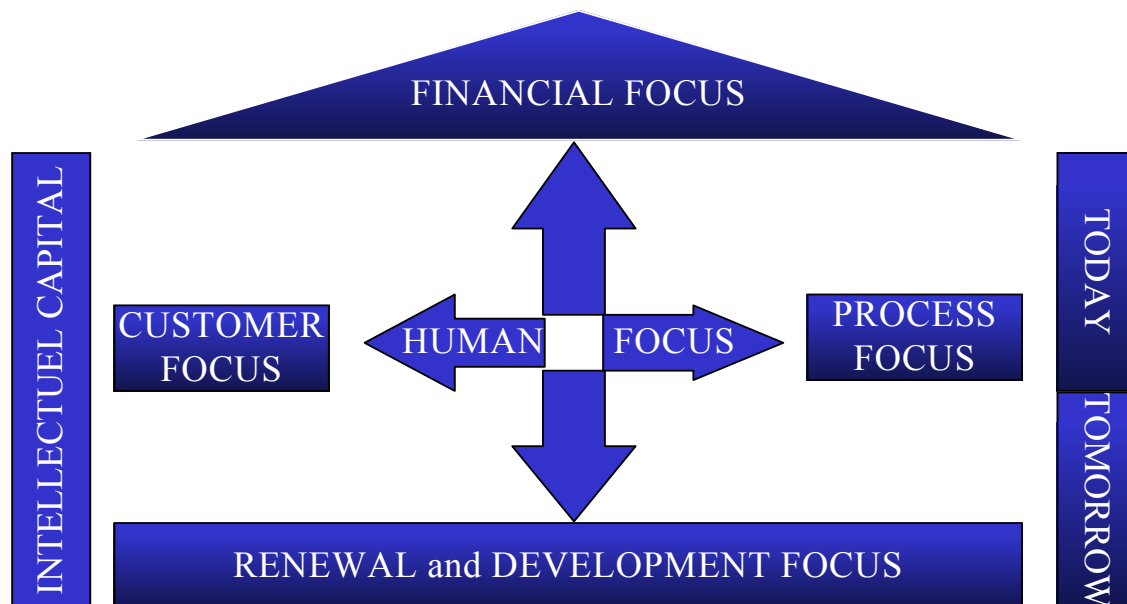


Figure 2. The Navigator of Skandia.

The intellectual scorecards, through Skandia's Navigator, fulfill some of the principles of the large version of the SMA. However, the models of intellectual 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 strategic 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).

These models lack the balanced design of the BSC. Also, the RBV approach has to be related to an interactive conception of the strategy. The designers of Intellectual capital Scorecards did not develop this dimension. Roy (1999) described the bottom-up approach of the Navigator through the use of an intranet network called the Dolphin system. This element is a significant evidence -but it's not enough- that the strategy is developed interactively.

In conclusion, the intellectual Scorecards are uncompleted tools of the large version of the SMA. In combining some principles of the BSC and some of the intellectual capital scorecards, it is possible to design an integrated strategic Scorecard that would fulfill the principles of the large version of SMA (see figure 3). Figure 4 shows a comparison between the Anglo-Saxon and Scandinavian strategic Scorecards.

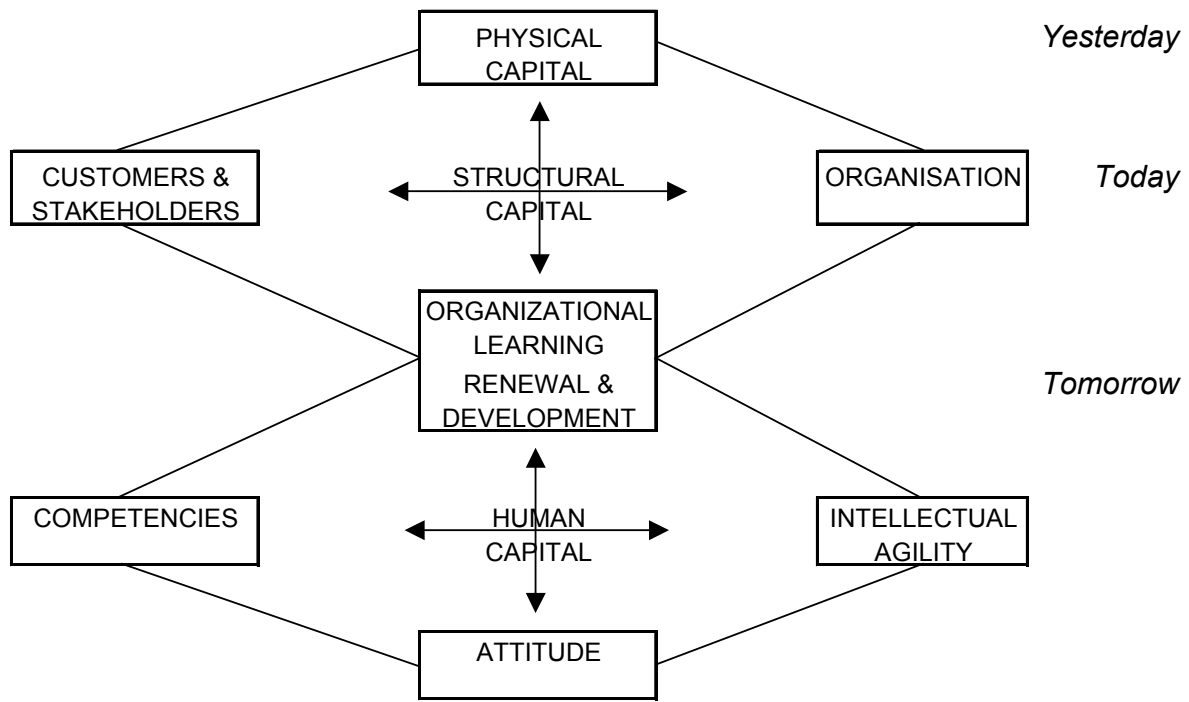


Figure 3. The Integrated Strategic Scorecard.

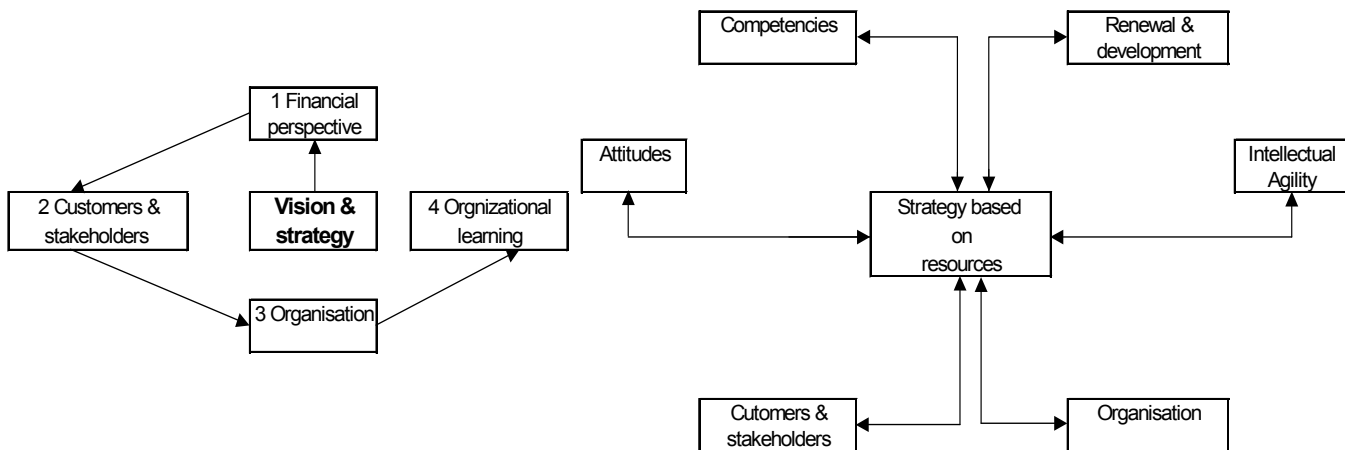


Figure 4. Comparison between anglo-saxon & scandinavian strategic scorecards.

TPOLOGY OF THE STRATEGIC SCORECARDS AND RESULTS OF AN EMPIRICAL RESEARCH IN FRANCE

THEORETICAL MODEL – CLASSIFYING STRATEGIC SCORECARDS

The typology in Figure 5 is the result of an analysis of the literature that leads to the design of Strategic Scorecards. In studying the differences of the instruments and the context within which they were elaborated, I present 6 types of strategic scorecards according to 6 variables (Table 7). These variables are based on empirical researches in management control associated to the contingency theories (Hartmann, 2000).

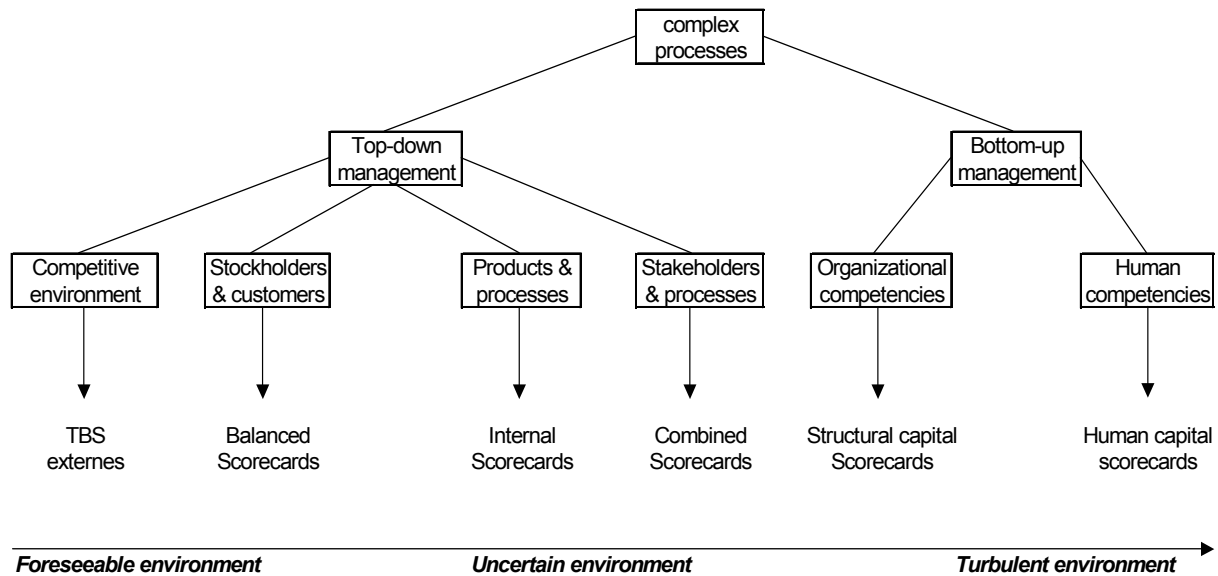


Figure 5. The determining factors of the strategic scorecards.

THE FRENCH SITUATION – RESULTS

The strategic scorecards: a useful tool for managers ? - Method

1000 questionnaires were sent to companies located in France in 2001. The companies were selected using a ranking published by a major economic magazine in France (L'Expansion). Managers have first been asked on the relative importance they give to 24 generic criteria (table 2). They were also questioned on the level and accuracy of the measures by the management control tools they use (through a likert scale). The generic criteria were chosen so that the Balanced Scorecard and the Navigator would be equally represented. 112 firms have replied, 109 questionnaires were used. The variables kept are the most used generic criteria of the strategic scorecards.

Table 2. Retained variables.

Balanced Scorecard	Navigator
Customers and competitive environment dimensions (SMA version 1): 1- customers' satisfaction (la ¹) 2- market share (la) 3- new customers (la) 4- products and services quality (le)	Customers and competitive environment dimensions (SMA 1): 13- public image (le ²) 14- commercial investments (le) 15- future stakeholders' value (le)
Financial dimension (conventional management control): 5- turnover (la) 6- costs control (la) 7- shareholders' value (la)	Financial dimension (SMA version 3): 16- past stakeholders' value (la)
Human dimension :	Human dimension (SMA version 3):

¹ Lagging indicators.

² Leading indicators.

8- individual productivity (la) 9- employees' satisfaction (SMA version 3) (la)	17- competencies value(le) 18- knowledges and know how (le) 19- strategic training (le) 20- behaviour (le) 21- innovative capacities (le)
Internal dimension (SMA version 2): 10- processes effectiveness (production, innovation...) (la) 11- infrastructures effectiveness (la) 12- research and development investments (le)	Internal dimension (SMA version 2): 22- processes adaptability (le) 23- infrastructures adaptability (le) 24- informative flows control (le)

Table 3. Companies distribution.

Bank and insurance companies	Trade, distribution, services, ordinary consumption goods	Traditional industries	New economy (high technology, computing, media)
23	24	37	28

Table 4. Managers offices.

Control managers	Financial managers	General managers	strategy managers	Human resources managers	other managers
37	35	23	3	5	9

Table 5 gives the first answers on the relevance of the strategic scorecards. The results show the importance of the financial dimension in control management tools (turnover, costs control, shareholder value). The managers do not seem satisfied with the measure of the other dimensions. In fact, they consider important to appreciate the other dimensions within the management control tools. The average result is 4 (important); the financial and competitive dimensions are privileged (customers' satisfaction, market share, new customers, products quality and new product investments). Then, the internal dimensions (flows of informations, processes) and the human dimensions (competencies, behaviour, knowledges and know how) are mentioned. A "Societal" dimension appears to be less important (stakeholders' value, public image). Besides, some differences confirm the unsatisfaction of the managers for their management control instruments.

This first analysis shows how the strategic scorecards could fulfill a gap.

Table 5. Measure and importance of the generic criteria.

Generic criterions	average measure	average interest	differences
1- products quality (le)	2,7	4,4	1,7
2- employees' innovation capacities (le)	2,4	3,9	1,5
3- customers' satisfaction (la)	3	4,4	1,4
4- part of competencies in global performances (la)	2,6	4	1,4
5- public image of the company (le)	2,6	3,9	1,3
6- employees' attitudes (le)	2,8	4,1	1,3
7- adaptability of the processes (le)	2,9	4,1	1,2
8- employees' knowledge & know-how (le)	2,8	4	1,2
9- effectiveness of the processes (la)	2,9	4	1,1
10- control of the information flows (le)	3,2	4,2	1
11- effectiveness of the infrastructures (la)	2,9	3,8	0,9
12- commercial investments (le)	3,3	4,1	0,8
13- adaptability of the infrastructures (le)	2,9	3,7	0,8
14- employees' productivity (la)	3,2	3,8	0,6
15- employees' satisfaction (la)	3,1	3,7	0,6
16- market shares (la)	3,5	4	0,5
17- acquisition of new customers (la)	3,6	4,1	0,5
18- investments in research & development (le)	3,2	3,7	0,5
19- past stakeholders' value (le)	2,8	3,3	0,5
20- future stakeholders' value (le)	2,8	3,1	0,3
21- training investments (le)	3,5	3,8	0,3
22- costs management (la)	4	4,1	0,1
23- shareholders' value (la)	4	4	0
24- turnover (la)	4,8	4	0,8 (-)

Factorial analysis of the dependent variables

We have operate a transformation to the data following Hair *et al* (1998), the distribution does not disturb the interpretations. The tests of asymmetry and Kurtosis are satisfactory ($-2,58 < z < 2,58$). I proceed to a factorial analysis with principal components (PCA), confirmed by an ascending hierarchical classification on the variables (Ward's Method). The results show the significant specificity of all dependent variables and their irreducibility (using, for instance the four generic dimensions in table 2).

The PCA statistics validates the distinction between the historic criteria and the forward-oriented criteria. Both types are weakly correlated. The criteria of the human dimension are the most correlated (except for individual productivity, which is quantitative). This suggest the difficulty for the managers to conceive measures for intangibles. The results indicate a relation between the human dimension, customers and the competitive environment.

Typological analysis

In order to choose between all the typological analyses methods offered by the SPSS software, I conducted a Chi-square test between the types and the dependent variables. In fact,

Ward's method appears to be the most relevant. The tests were significant for all the variables except the criterium "customers satisfaction". In a second step, this criterium was excluded of the typological analysis. (Hair *et al*, 1998).

Besides, the small number of iterations suggests the relevance of the method. Looking at the dendrogram, I observed no isolated data. I split the sample in two groups but no significant differences were found. The cluster solution is statistically representative of the general population. Table 6 characterizes each of the 6 groups.

I observed 5 types of strategic scorecards and one class for companies uninterested by strategic scorecards. The first group represents the "Mixed strategic Scorecards" where the customers dimension and the internal dimension are privileged. It confirms the previous results of the factorial analysis. This type of Scorecard has been adopted, for example, by ABB, Sparbanken (Swedish Bank) and WM Data (a Swedish Consulting company) (see Mouritsen *et al.*, 2000a, 2000b, 2000c). The second group captures the characteristics of the BSC and the Navigator. This group is called " the Integrated Strategic Scorecard". In this group, all criteria are important. The third group defines the BSC. The fourth group concerns the companies uninterested by strategic scorecards. The fifth group is called "Structural capital Strategic Scorecard". In this group, the structural capital is dominant. This type of strategic Scorecard has been used by the Swedish Consultus company and the Danish Companies Systematic and Carl Bro. In the sixth group, the criteria of Human Capital are privileged. This group is called " the Human Capital Strategic Scorecard". The Danish PLS Consult, Ramboll corp., Telia and the Civil Aviation companies have adopted this Strategic Scorecard (Danish Trade and Industry Development Council, 1997).

Table 6. Characteristics of the six categories discriminated.

Variables retained	group 1	group 2	group 3	group 4	group 5	group 6
2- market share	4,6	4,3	3,6	3,5	4,4	3,2
3- new customers	4,6	4,5	4,1	3,5	3,6	4,5
4- products quality	4,4	4,8	4,7	4,0	3,9	4,7
5- turnover	4,3	4,4	4,0	3,7	4,2	4,2
6- costs management	3,9	4,4	4,5	3,6	4,9	3,3
7- shareholders' value	3,3	4,5	4,8	3,9	3,8	3,9
8- individual productivity	3,7	4,0	4,5	3,0	3,5	3,7
9- employees' satisfaction	3,5	4,5	3,7	3,0	3,2	3,7
10- processes effectiveness	4,1	4,6	4,4	3,3	4,0	3,5
11- infrastructures effectiveness	4,0	4,1	3,9	2,9	4,3	3,8
12- research & development	3,5	4,6	3,3	2,9	4,5	4,3
13- public image	3,8	4,4	3,7	3,6	3,7	4,5
14- comercial investments	4,1	4,7	4,1	3,5	4,2	3,9
15- future stakeheholders' value	3,1	3,9	3,0	2,4	3,2	3,6
16- past stakeholder's value	3,2	4,2	3,8	2,4	3,1	2,9
17- competencies value	4,4	4,5	4,0	3,1	3,2	4,5
18- knowledge and know-how	3,9	4,4	4,0	3,3	3,0	5,0
19- strategic training	3,9	4,4	3,9	3,0	3,2	4,7
20- behaviour	4,1	4,7	4,2	3,2	3,6	4,8
21- innovative capacities	3,9	4,6	3,6	2,9	3,9	4,7
22- processes adaptation	3,3	4,0	3,9	3,0	4,5	4,7
23- infrastructures adaptation	3,7	4,6	4,4	3,0	4,7	4,7
24- information flows	4,3	4,6	4,5	3,1	4,4	4,8

Description of the companies' classes

I have tried to verify, using a discriminant analysis, if some contingency variables (independent variables) differ significantly from one class to another. The Pearson Chi-square tests proposed in table 7 show that:

- the complexity of the process and the shareholder value strategy are the most significant contingency variables.
- The field of activities, the instruments designers, the human competencies strategy valuation and the technological competencies strategy valuation are significant contingency variables.

Table 7. Contingency Variables.

Independant variables	Chi-square	Signification
Activity fields	2,724	0,024
Complexity of the processes	3,456	0,007
Nature of the structure of the firms	1,864	0,110
Tools devisers	3,068	0,013
Environment uncertainty	0,690	0,632
Strategy of human ressources' valuation	2,455	0,039
Strategy of adaptation to environmental evolutions	1,090	0,371
Strategy of satisfaction of the stakeholders	1,885	0,105
Strategy of valuation of the technological competencies	2,740	0,024
Strategy of optimization of the processes	0,059	0,448
Strategy of max. of the shareholders' value	4,273	0,002

Table 8 below describes the characteristics of the 6 classes.

- 1st class: companies interested in the "mixed strategic scorecards". The financial department and the head office conceive the management control tools. The technological and informative processes of those companies are complex. They belong to four industries. (table 4). The "mixed strategic scorecards" group was not present in the "*a priori*" typology. It mixes aspects of the BSC (customers and competitive dimension) and some aspects of the intellectual capital strategic scorecards (through the importance of the structural capital and less importance given to shareholder value). This model doesn't seem to be associated with a specific strategic process (neither reactive nor proactive).
- 2nd class: companies interested in the "integrated strategic scorecards". They are structured with very complex technological and informative processes. They belong to traditional industries (12 companies) and to the new economy (7 companies)
- 3rd class: companies interested in the "BSC". They favour the shareholder value maximization and a reactive strategy (adaptation to the environment).
- 4th class: companies uninterested in the strategic scorecards, mainly characterized by simple technological and informative processes. Those companies belong to the financial services industries and basic consumption goods.
- 5th class: 14 companies are interested in the "structural capital strategic scorecards". They focus on project teams to conceive the management tools and a technological competencies valuation strategy.

- 6th class: 7 companies care about the "Human capital strategic scorecards". Mainly new economy companies, they favour team-projects and human competencies strategy valuation.

The statistical tests (confirmed by a Pearson correlation analysis) show that the other contingency variables do not discriminate significantly the 6 types. The type of manager (general manager, financial director, management control director, etc...) has no influence.

Table 8 gives a synthesis of the typological analysis.

Types	size	favoured criterions	Companies characteristics
Combined Strategic Scorecards	24 companies	qualitative criteria concerning first customers & organization	complex processes, general & financial management for the conception
Integrated Strategic Scorecards	17 companies	the 24 criteria are considered as important	technological & informative processes are very complex, traditional & new economy favoured
Balanced Scorecard	34 companies	first, financial dimension, then customer dimension	strategy of shareholder value growth, new economy & traditional industry both
Strategic Scorecards rejected	13 companies	financial criteria only	simple processes, banks, assurance, ordinary consumption goods
Structural Capital Strategic Scorecards	14 companies	first, qualitative criteria concerning organization (processes, technology..)	project teams for the conception, technological competencies valuation
Human Capital Strategic Scorecards	7 companies	first, qualitative criteria concerning human capital	new-economy, project teams, human competencies valuation

COMPLEMENTARY RESULTS

The material collected during the interviews I conducted confirm a significant evolution in french management accounting. Here are the four major characteristics of the evolution:

- french management accounting systems are more strategically and externally oriented (especially on competitive environment analysis),
- more non financial indicators are included,
- the articulation between the strategic process and the management control process remains difficult,
- and the strategic scorecards and especially the BSC don't have the same success in France than in Anglo-saxon countries.

When French firms use strategic scorecards, the human resources play a significant role. The chart 9 below makes a description of the firms, using a strategic scorecard, from the empirical research.

Table 9. Synthesis of interviews.

		Examples from literatures	Examples from our french enquiry	Examples of indicators
anglo-saxon strategic scorecards	external strategic scorecards	Bank of Montreal		service rate (%) public image (enquiry)
	Balanced scorecards	Mobil, NRO, Pioneer Petroleum	NCR Europ and France, Axa Schindler	market share/leaders, EVA, revenues/employee
	Internal strategic scorecards	Total Quality models	Valéo Afpa (permanent education)	customers' level of satisfaction
scandinavian strategic scorecards	human capital strategic scorecards	Skandia, Telia, Ramboll	GrandVision French Post	enquiry/strategic awareness, evolution of the conflictuality rate
	structural capital strategic scorecards	Consultus, Carl Bro, Systematic		
combined strategic scorecards		Celemi, ABB, Xerox	Maif: french insurance company	promotion of the mutualist spirit

Figure 6 presents the Strategic Scorecard of Maif, a french mutual insurance company and table 10 its strategic objectives. We can see that its strategic Scorecard combines the anglo-saxon and the scandinavian approaches.

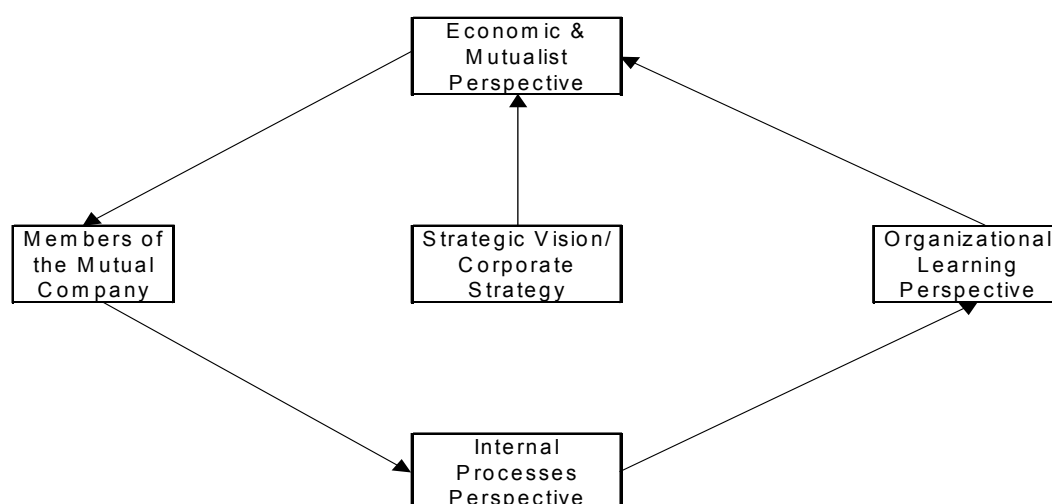


Figure 6. Maif Strategic Scorecard.

Table 10. Maif strategic objectives.

Economic & Mutualist Perspective: 1-To promote the mutual insurance system, 2-To reach objectives of profitability, 3-To develop activities of prevention, & sponsoring,.. 4-To increase commercial margins, 5- To develop subsidiaries	Internal Processes Perspective: 11-Effective organizational processes, 12-Innovative & learning organization, 13-Adaptable processes, 14-Costs control, 15-To develop performant management instruments
Members of the Mutual Perspective: 6-To develop members' loyalty, 7-To increase market shares, 8-Support for our values, 9-Partnership development, 10- To develop appropriate services	Organizational Learning Perspective: 16- Employees' satisfaction & loyalty, 17- Performant information systems, 18-Employees' motivation, 19-To increase in-service training, 20-To develop employees' competencies

CONCLUSION

This research was an opportunity to review the concepts of strategic control and strategic management accounting. I presented an instrumentation, the strategic scorecards. I proposed a generic model and a typology. I tested the interest of managers for this tool and examined the relevance of the typology. The description of the six classes demonstrated the limits of the quantitative approach. Every type of strategic scorecards deserves clarification, mostly for implementation purposes. This research is followed with a qualitative methodology investigation which is not yet completed. Some managers who answered to the questionnaire are interviewed. They have been selected for their specific profile.

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