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Abstract

In 1992 Kaplan and Norton introduced the balanced scorecard. They related this concept to the strategy map (2004) and a management system of strategy execution (2008).[1] The balanced scorecard is an especially popular instrument with some managers, but is critized and even abhorred by others. Kaplan and Norton have carefully explained the reasons and objectives behind the balanced scorecard, such as the need for balanced investments in both intangible and tangible assets, in view of the increasing economic importance of intangible assets compared with tangible assets in the economy, which implies a fundamental change in the institutional foundations underlying the operations and efficiency of firms and markets. For various reasons, society is not inclined to address the need to adapt institutions to the role of intangible assets. Therefore, adaptation and innovation for the tools of management must be achieved within the context of existing institutions.

Kaplan and Norton have defined their management system from the existing institutional context of firms and markets. The concepts for managing intangible assets published by Kaplan and Norton imply a fundamental change with respect to the paradigms of business administration which constitute modern management traditions of the twentieth century, as taught in business schools. In the U.S., the balanced scorecard was introduced from a political context to improve competitiveness, requiring more investment in intangible versus tangible assets. Such a context does not exist in Europe, which may explain why the BSC is less well received and applied, and why investment in intangible assets lags behind those in the U.S.

This paper argues that in the absence of a clear economic agenda for the competitiveness of the European economy, what is needed for an efficient application of Kaplan and Norton's management system in the European context is an understanding of the fundamental aspects underlying it, in view of the economic role played by intangible assets in the twenty-first century.

[1]This paper has benefited from comments by Dr. R. S. Kaplan and Dr. A. R. Muller; all conclusions and errors, however, are those of the author.

Overview

1. Introduction

Firms in our economy function not only by driving entrepreneurs and employees, but depend on instititions created to enable entrepreneurship, investments, and trade. Some institutions are more generic in nature, including property law, monetary sytems, and civil codes; some have been specifically created to enable entrepreneurship and large enterprises, such as corporate and labor law. The latter two in particular were created at the end of the nineteenth century to facilitate technologies with the need for investment in tangible assets and firm research and development. The firm as an institution in western society, as created by corporate law and supported by other formal and informal institutions such as labor law, industrial relations, education, and religion, is thus based on tangible assets (machinery, equipment, buildings) remaining salient in the economic process.

Although management, organization, and human capital were understood to play important roles, nineteenth-century economist Alfred Marshall labeled management and organization the fifth production function; intangible assets (except for legally defined and alienable patents) were and still are deliberately omitted from corporate and labor law, and thus were not included as defining elements of the firm as an institution in society. This was supported by economic theory; in neoclassical economic theory, labor plays no part in the firm but serves as a purchased commodity. With roots in fifteenth-century double entry bookkeeping, institutions such as management accounting are based on tangible assets through conventional organization forms, as well as human resource management. The role of human capital, organization, quality of management, and so forth haven't been ignored by those involved with firms, to the contrary, a great deal has been invested in intangible assets. But existing accounting rules do not allow investment in human capital and other intangible assets to be capitalized. Only in the case of takeovers are human capital and other intangible assets included in the valuation of the firm, as expressed in retention bonuses.

Kaplan and Norton based the BSC on a multi-company research project designed to study performance measurement in companies where intangible assets play a central role in value creation (Kaplan, 2010). According to Kaplan and Norton, "Ideally, this financial accounting model should have been expanded to incorporate the valuation of a company's intangible and intellectual assets, such as high-quality products and services, motivated and skilled employees, responsive and predictable internal processes, and satisfied and loyal customers. Such a valuation of intangible assets and company capabilities would be especially helpful since, for information age companies, these assets are more critical to success than traditional physical and tangible assets. If intangible assets and company capabilities could be valued within the financial accounting model, organizations that enhanced these assets and capabilities could communicate these improvement to employees, shareholders, creditors, and communities" (Kaplan & Norton, 1996, p. 7). They add, "Realistically, difficulties …. will likely preclude them from ever being recognized in organizational balance sheets. Yet these are the very assets and capabilities that are critical for success in today's and tomorrow's competitive environment."

A focus on intangible assets is not only fundamental to the concept of the BSC, it is fundamental to the field of business administration and corporate governance, and the economy as a whole. The field of business administration as a set of management practices, including management accounting, including what has been labeled the twentieth-century Modern Management Tradition (Kikoski & Kikoski, 2004), is explicitly based on physical, tangible assets. The role of intangible assets (human capital, information capital, organizational capital) has always been acknowledged by economists and business, but legal and accounting rules are deliberately based on tangible assets, due to the investment in tangible assets in the first half of the twentieth century. Workers, even if they represent firm-specific human capital, are not considered part of the firm in the neoclassical economy (as a nexus of contracts between investors) but considered a purchased commodity. Despite this omission, firms and nations have always invested in both generic and firm- specific human capital, but the level and organization of such investments depend on the nature of industrial relations and national institutions (Hall & Soskice, 2001).

Investment in intangible assets thus plays a role in the competition among nations, and the systems and concepts managers of firms who make decisions with respect to investments in tangible versus intangible capital have implications for competitiveness, both at the level of the individual firm and that of a national economy (Porter & Wayland, 1992).

Since roughly 1990, intangible assets have become dominant in value creation and the value of the firm and thus investments (Figure 1).

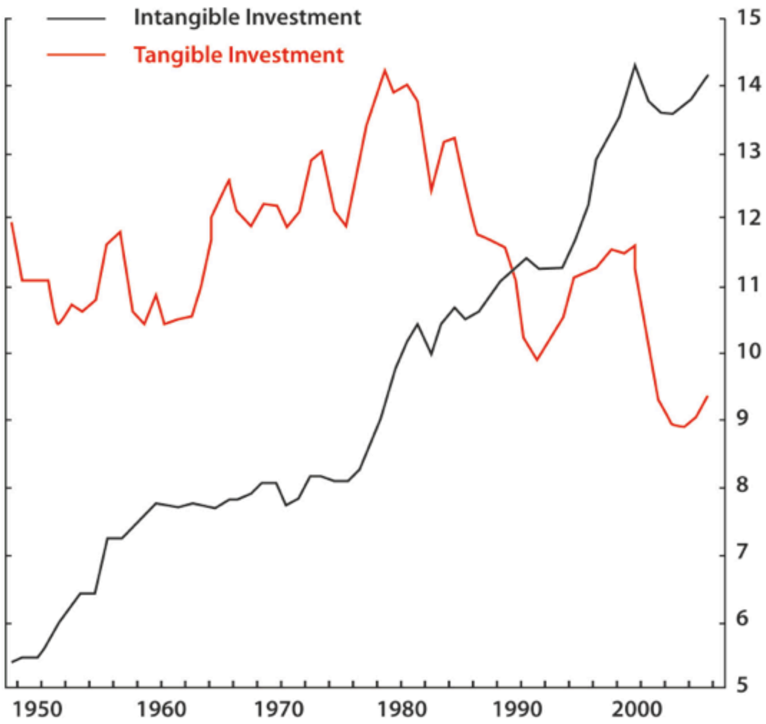

Figure 1. Business investments in the U.S.. Ratio to business output, source: Corrado et al. Quoted in (OECD, 2008) see also (Nakamura, 2001).

The corporate finance revolution of the 1980s narrowed performance management to that of financial performance management, followed by a focus on lagging financial parameters. This corresponded to the context of self-contained organized divisions of multi-business firms guided by portfolio strategies, such that investment decisions were implicitly based on the firm (specifically, the division) as a black box input/output production function, without any understanding of its inner workings. However, this approach conflicted with several structural developments in the economy.

The first was that of market value of the firm, which was in many cases higher than its accounting value, that is, the value of its tangible assets. The capital market responded to this by valuing firms on the basis of projected or expected cash flow. In this way, intangible assets contributed to the market value of the firm , whereas the ledgerbook profit did not include intangible assets. Consequently, the shift from accounting profits to economic profits implied a need to base performance management as much on leading non-financial parameters as on lagging financial ones.

The second structural development involved the parenting value of multi-business firms. Either a multi-business firm must exploits its synergies or else the capital market will deny firm management from pursuing a portfolio strategy, by treating managers as though they were merely investors. The firm based on tangible assets generally exploits synergies in a limited way, i.e., financial synergy with some knowledge synergy. Due to their semi-public nature, intangible assets have far greater potential for exploiting synergies in terms of gaining a maximum return on investments and for this reason, synergies must be deliberately exploited. The traditional M-form adopted by many firms after the Second World War, with its self-contained organized divisions, does not lend itself to exploiting synergies, especially when managerial pay is based on unit performance and internal reporting is one-dimensional based on the structure of divisions. As this paper will make clear, the concept of strategic themes as introduced by Kaplan and Norton is a particularly effective concept, not only in terms of solving the limitations of a budget-driven method for strategy execution, but when it comes to exploiting various types of synergy in a planned and controlled way.

The capital base of the traditional firm consists of tangible assets and some intangible assets such as patents, as narrowly defined in accounting standards. The capital base of the modern firm consists primarily of intangible assets, including undefined or unacknowledged by accounting standards such as human, information capital, organization, and relationship capital (Arrow, 1996). In the modern firm, the knowledge worker is part of the capital base. This is what the Learning & Growth perspective of the BSC is all about: the need to invest in this type of capital base in order to achieve strategic objectives. Under existing IAASB accounting rules, such investments must be expensed; accounting rules do not allow capitalizing such investments. Despite these rules, either U.S. managers have heeded Michael Porter's 1992 call to invest in intangible assets, or it has been an effect of the BSC or both, resulting in the fact that the private U.S. firms invest more in intangible assets than do European firms (van Ark, Hao, & Hulten, 2009) (Figure 2).

Table 1. Intellectual asset investment in five OECD countries, by asset category

(Percentage of GDP)

	CHS (2005, 06) US 1998-2000	GH (2006) UK 2004	FHMS (2007) Japan 2000-2002	RBT (2007) Netherland 2004	JAA (2007) Finland 2005
Computerised information	1.7	1.7	2.0	1.2	1.0
Innovative Property	4.6	3.4	3.7	2.4	4.0
Scientific R&D	2.0	1.1	2.1	1.5	2.7
Mineral exploration	0.2	0.0	0.0	0.0	0.0
Copyright and license costs	0.8	0.2	0.9	0.1	0.1
Other product development, design and research	1.6	2.0	0.7[1]	0.7	1.1
Economic competencies	5.4	5.0	2.5	3.6	4.1
Brand equity	1.5	0.9	1.0	1.6	1.7
Firm-specific human capital	1.3	2.5	0.3[2]	0.8	1.2
Organisational structure	2.7	1.6	1.2[3]	1.2	1.1
Total intangible assets investment	11.7	10.1	8.3[4]	7.5	9.1

1. Product development in financial services only.
2. Direct firm expenses only.
3. Purchased organisational structure is not included.
4. Not strictly comparable with the figures for the other countries due to incomplete coverage of some asset classes.

Sources: Corrado *et al.* (2005, 2006), Giorgio-Marrano and Haskel (2006, 2007), Fukao *et al.* (2007), van Rooijen *et al.* (2008), and Jalva *et al.* (2007).

Figure 2. Differences in investments in intangible assets (OECD, 2008).

According to a study by the Conference Board (van Ark et al., 2009), this discrepancy may explain the difference in economic growth and that of labor productivity between the two economies. Whether different levels of investment in intangible assets between the U.S. and Europe can be explained by the application of the BSC is unknown, due to a lack of specific research. But most likely other factors, such as a difference in socioeconomic institutions and arrangements, may play a role as well.

This overview demonstrates that the BSC, strategy map, and strategic themes may be understood within a wider context of changes to the economy and firms. Traditonally, management concepts, models, and tools are presented 'as is'—that is, without reference to their founding institutional contexts. This worked well until about 1990, due to the congruence of assumptions underlying these management concepts, models, and tools within the institutional context, but such congruence is waning. Today, an understanding of the institutional context of tools of management is necessary in order to make use of the new concepts, especially in terms of lagging institutions and the growing institutional incoherence of many countries. As this paper will argue, the BSC and the strategy map relative to Kaplan and Norton's method for strategy execution constitute a fundamental or paradigmatic change in business administration. This assertion may provoke a number of questions regarding the paradigms of business administration and the institutional contexts of business that play a role in management decisions and the possible use of management tools.

To reach an understanding of the deeper meaning and wider context of Kaplan and Norton's system of strategy execution, the following section will discuss business administration, in particular the main schools of thought. The third section will examine the issue of defining paradigms for business administration and, because managers are often guided by institutions, the link between paradigms and institutions in terms of entrepreneurship and business administration.

In the fourth section, the firm as an institution will be described, in particular the formative institution labeled Modern Business Enterprise (MBE). The concept of the MBE is the institutional framework for most methods and concepts of management and organization. Because the MBE was created at the end of the nineteenth century to cater to the existing and developing technologies which required investment and organization, the question must be asked whether the assumptions and objectives underlying the concept of the MBE are still relevant to the present time and economy. In the fifth section the changing nature of the modern firm as compared to the MBE will be analyzed. This analysis will include a list of issues resulting from the changing nature of the firm with respect to methods of management and organization, especially those relating to management control.

The sixth section analyzes the concept of the BSC, particularly the strategy map with respective to Kaplan and Norton's management system of strategy execution regarding the changing nature of the firm and the issues implied for tools of management. The seventh section proposes an appreciation of the BSC, strategy map, and Kaplan and Norton's method of strategy execution in the reference to modern concepts for business administration, such as information-based organization, performance management, and empowerment.

The paper concludes with some observations regarding adaptation and innovation of methods and concepts for management and organization.

2. What is business administration?

With respect to the paradigms of business administration, in practice and in the academic sense, some authors either claim there is ongoing change or argue for the need for a paradigm shift (Barney & Ouchi, 1986; Clarke & Clegg, 2000; Goles & Hirscheim, 2000; Macharzina & Engelhard, 1991; Miller, 2007; C.K. Prahalad & Hamel, 1994). Anyone embarking on a discussion of a shifting paradigm in business administration, and if so, how, must define what a paradigm is as well as what business administration is. We first turn to the question: what is business administration?

Business administration may be understood as a distinct activity within society, closely related to but different from entrepreneurship. Business administration can be discerned on four levels. The first is a description of what CEO's, executive boards and managers actually do, without requiring judgment, explanation, or legitimization. The second is a normative description implied by corporate law and systems of corporate governance and court rulings with respect to the duty of care. The third is a field of research, in which researchers and consultants are looking for success factors and best practices and where more serious schools of research may be found such as economic organizational theory and corporate finance, but which may include historical descriptions as well (e.g., the work of Chandler). The fourth field of business administration consists of the teaching of theories, models, practices, and cases in MBA and executive courses.

Very few definitions of business administration have been published. The U.S. business historian Alfred Chandler (1962) defined it as "an identifiable activity [that] differs from the actual buying, selling, processing, or transporting of the goods, and that in the large industrial enterprise, the concern of the executives is more with administration (coordinate, appraise, and plan) than with the performance of functional work" (Chandler, 1962, pp. 8-9).

Henri Fayol, the manager of the French national mines, is considered to be *le fondateur de la doctrine administrative*. Fayol's (1918/1999) doctrine of business administration defines the following tasks of the executive with respective to an executive board of a firm or institution:

- Opérations *techniques* (production, fabrication, transformation)
- Opérations *commerciales* (achats, ventes, échanges)
- Opérations *financières* (recherche et gérance des capitaux)
- Opérations de *sécurité* (protection des biens et des personnes)
- Opérations de *comptabilité* (inventaire, bilan, prix de revient, statistique, etc.)
- Opérations *administrative*:
  - *Prévoyance*, c'est-à-dire scruter l'avenir et dresser le programme d'action;
  - *Organisation*: c'est-à-dire constituer le double organisme, matériel et social, de l'entreprise
  - *Commandement* c'est-à-dire fonctionner le personnel, le recrutement, la

formation du personnel et la constitution du corps social

- *Coordination*: c'est-à-dire relier, unir, harmoniser tous les actes et tous les efforts
- *Contrôle*: c'est-à-dire veiller à ce que tout se passe conformément aux règles établies et aux ordres donnés

Today, *prévoyance* would be expressed in terms of both strategy and vision and change management, at least in terms of foreseeing what changes are needed. To many, *commandement* may sound somewhat archaic; it has been replaced by the concepts of management and leadership. Fayol seems to leave out accountability, but in his *Tableau no. 5* (p. 124), he clearly mentions the shareholder.

From a perspective of corporate goverance, Bleicher (1992), representing the German school, and Tricker (1994), representing the British school, each defined a broader scope of the the management tasks of a firm, devided into three main areas: the formative role, the performance role, and the conformance role.

The formative role. The formative role comprises such tasks as defining the mission of the firm to be codified in its statutes. A mission is pivotal in the administration of a firm, especially in an information economy, as it guides the interpretation of data, initiatives, innovation, and self-coordination. A mission is the first type of information (Garfinkel, 2008), such as goals to be organized within a firm. A mission must not only be communicated and shared amongst the members of an organization, it should codify the objective function of the firm as a whole and through the objective functions of the internal organization. A mission may have a formal, legal nature in business administration. In Dutch corporate law, Article 7 of Book 2 of the Dutch Civil Code stipulates that when parties act in violation of the corporate mission, as laid down in its statutes, the corporation may ask the court to annul such contracts.

A second element to be defined as a constituting element of the firm is the identity and nature of the firm as organized in the corporation. The identity and nature of a firm are relevant for investors, as these describe the business which the firm conducts, through markets, solutions, products, services, and technology, and thus are defining elements of the risk profile. Dutch corporation law stipulates (Article 107a, first member) that when an executive board seeks to make a decision (e.g., restructuring, investment, disinvestment) that may change the identity and the nature of the firm, it must first seek approval in a general meeting. Apart from these formal aspects, it can be argued that especially in an information society mission and identity play more explicit roles in business administration compared with the economy of the second industrial revolution, due to greater complexity and need for processing more information in a faster manner.

Other elements of the formative role are the multiparty codes of conduct (those of ILO, OECD, and the Global Reporting Initiative) to which the corporation binds itself, as well its own codes of conduct and business principles. One element of the formative role involves the design and inner workings of the system of corporate governance, in terms of how the firm is organized within the corporation and how national and internal systems of corporate governance are laid down through various laws and corporate governance codes.

The *performance role* comprises activities (processes) needed to accomplish the objectives of the firm, in both the short and long terms. Within the performance role, the CEO of the executive board organizes such processes as:

- Predicting; continuously observing the environment, interpreting changes and events in the environment, and interpreting these as possible implications for the firm, part of the process of corporate vision;
- Choosing the strategy of the firm to accomplish objectives of the firm; that is, making choices with respect to markets, customers, customer value propositions, production and delivery processes, sourcing, financing, etc.
- Organizing various development, production, delivery, and support processes, including deciding on critical process performance parameters and the leading parameters of required investments, including those shared with partnerships and alliances;
- Organizing the firm's social organization: hiring, selection, and training of workers (including the process of induction, or culture), development of workers, creating *esprit de corps* and proper psychological climate.
- Deciding on organization of information, access to information, sharing of effect information (the business model of the firm) so that workers take proper initiatives;
- The means by which new ideas and knowledge are developed, acquired, generated and diffused throughout the organization;
- Deciding on the partition and attribution of rights, setting objective functions, measuring and appraising performance of divisons, departments, and individuals, including reward systems;
- The configuration of resources, including the vertical and horizontal boundaries of the

firm (formerly the structure of the organization);

- Resource allocation, target setting, monitoring, corrective actions;
- Setting corporate guidelines and policies;
- Operational or internal audits; and
- The process of meta-control.

(Note that the specification of the tasks comprising the *performance role* do not specify which methods or tools are to be used in the management of the firm.)

The *conformance role* involves the CEO of the executive board being accountable to the general meeting of shareholders, the supervisory board, the workers' council, and other stakeholders, with a legitimate claim to accountability in the interest of the firm. This includes the responsibility for the proper functioning of the firm's system of corporate governance such as publishing annual reports and others required by law or society. The foregoing implies that the duty of the executive board is to monitor those working in or for the firm, that they abide by its values and codes of conduct, and that the integrity of the firm is safeguarded, including its values, be they physical, financial, or intangible.

Within the performance role, a more specific operational description of business administration is provided by Sloan (Sloan, 1962/1986). This description is specific with respect to administering a conglomerate or multidivision corporation, in which each division is self-contained, organized by assigned market (segment), products, resources, and supporting functions except for financing of the division. In the case of a multidivisional or multi-business firm, its headquarters has a scope of specific functions (staffed departments), depending on the specifics of the firm (Chandler, 1996).

Sloan's concept of how to administer a multidivisional firm may be considered paradigmic for business administration. It was first described (though not to the agreement of Sloan (Freeland, 2001)) by Peter F. Drucker in his *Concept of the Corporation* (Drucker, 1946), and later by Sloan himself (Sloan, 1962/1986). Bower elaborated on this in his widely read and applied *Managing the Resource Allocation Process* (Bower, 1986)1970). In particular, Bower's bottom-up resource allocation process is cited in a normative way in the textbooks for management control (Anthony & Govindarajan, 1995; Lorange & Vancil, 1977; Merchant & Van der Stede, 2003). However. in many cases this method has degenerated into a perfunctory budget procedure in which strategy gets lost. In 2005, Bower acknowledged that his bottom-up resource allocation process should no longer be used, as it is incapable of dealing with intangible assets and thus cannot realistically serve the modern firm (Bower & Gilbert, 2005a).

Sloan’s method of administering a conglomerate or multidividional firm is a combination of the concept of framing, defined in the U.S. Constitution (O'Toole, 1995), and methods of management accounting for controlling a large firm (Johnson & Kaplan, 1987). Sloan’s method includes a second control loop for staff departments collecting nonfinancial information on utilization, quality, yield, and so forth.

The elements both explicit and implicit which constitute Sloan's method of administering a multidivisional corporation may be summarized as follows:

- Setting out a mission or purpose for the corporation, plus elements defined under the formative role;
- Defining a strategy for the corporation;
- Setting the market or business scope for each division (partitioning the corporate market into segments);
- Selecting, appointing, appraising, compensating, and dismissing management of the divisions;
- Setting strategic financial and operational targets for each division;
- Allocating available resources for investment opportunities (divisions), following the principle that managers of a divison must have hierarchical control over resources needed to serve the assigned market segment;
- Attributing the rights of decision to the management of divisions and defining any reserved power;
- Monitoring the performance of divisions against set targets or assumptions with respect to markets and capabilities, as well as perceived developments in the markets, taking corrective action where needed;
- Defining and implementing corporate policies with respect to management accounting, reporting, standards, synergies, and so forth.

Unlike Fayol, Sloan does not seem to pay much attention to the human factor. His concern was not only to create a system of control, but in terms of organization, to create a hygienic context for those working in an organization. Thus, Sloan’s concern for people involved a hygienic organization. Sloan assumed the multidivisonal firm was one legal entity with vertically integrated divisions. Following the Second World War, multinational companies invested in production capacity in multiple countries; due to an absence of internal corporation laws, Sloan’s system as applied to multinational firms became complicated, since internal relations had to be based on shareholders rather than operations. European multinationals (e.g., Philips Electronics, Unilever) solved this problem by assigning divisons by country. But when markets became regional and no longer coincided with nation-states, a lack of congruence emerged between Sloan's system for running a multidivisional organization and the legal organization of multinational companies (Strikwerda, 2009).

Due to the increased efficiency of markets after the Second World War, firms began to deverticalize, either by separate divisions or as a whole. Thus, the task of managing the corporation involved setting boundaries for the firm. In the 1980s U.S. firms began to share specific resources among divisions, due in part to the broader application of ICT by firms, creating shared service centers and changing the economic model of the firm.

This description of business administration is not specific with respect to methods or concepts to be used by managers, but merely focuses on the tasks of business administration. Sloan's concept for how to run a multidivisional firm is based on a specific organization form (the M-form), and focuses on specific basic conditions of the economy which are period-specific. Nevertheless, in the period of roughly 1925–1990, Sloan's concept of business administration was paradigmic, in practice, in teaching, and in research, not only as it applied to management and organizations, but corporate finance and governance as well.

3. What is a paradigm as it relates to business administration?

Another question is whether the field of business administration, as conceived by executives, legislators, and lawyers in systems for corporate governance; by practitioners such as management consultants; and in the academic fields of research and education, contains a paradigm, or set of defining paradigms. The real question may be whether the field of business administration *should* have a paradigm that which may conflict with a need for entrepreneurial behavior, which by definition involves breaking rules in order to achieve higher levels of efficiency and continuity of the firm through innovation, and thus to use Schumpeter's term, *creative destruction.*

There are two dimensions to the question of whether business administration has or should have a paradigm, or perhaps multiple paradigms. From the perspectives of leadership and entrepreneurship, many have denied whether a well-defined paradigm for business administration exists, but consider the role of executive to be more one of personal art. Given that entrepreneurship is the art of abductive thinking, the other dimension is that of regulation—that is, systems of corporate governance and laws that either set or apply standards to executives, especially with regard to duty of care, which usually is interpreted in terms of compliance to accounting standards, decision making, internal controls, and such. The fact that executives and even some academics object to the notion that management can be taught (Locke & Spender, 2011) does not prevent managers (even if they deny doing so) from deploying a set of standard techniques for leading, administering, and controlling the firm. This is partly because professional staff employ standard concepts and techniques.

The distinction between management and specialized staff has become stronger for two reasons. One involves the increasing professionalization of some staff functions (corporate finance, risk management, et al.), and the other stems from how regulators and lawmakers tend to use concepts from those professions (especially management accounting) in a normative way. Thus, paradigms of business administration may be found implicitly in the various techniques applied to the functions of business administration—strategy, organizational design, management control, accounting, HRM, IT governance, corporate finance, etc.

The concept of paradigm used in science cannot be applied in a straightforward way to business administration. The roles that paradigms play in science, especially economics, in terms of regulating academic methods, may be found in business administration, albeit in a more complex way, in various social institutions in society, but are not explicitly discussed in MBA texts.

3.1. The concept of paradigm according to Kuhn

Kuhn defined two types of paradigms in his seminal work, *The Structure of Scientific Revolutions*. The first type is the sociological paradigm: "The entire constellation of beliefs, values, techniques, and so on shared by the members of a given community." The second type is the exemplar paradigm, which "denotes one sort of element in that constellation [of the sociological paradigm], the concrete puzzle-solutions which, employed as models or examples, can replace explicit rules as a basis for the solutions of the remaining puzzles of normal science" (Kuhn, 1970, p. 175).

Another definition of paradigm is that of "world view, a general perspective, a way of breaking down the complexity of the real world. As such, paradigms are deeply embedded in the socialization of adherents and practitioners telling them what is important, what is legitimate, what is reasonable. Paradigms are normative; they tell the practitioner what to do without the necessity of long existential or epistemological considerations" (Patton 1975, quoted in: Strikwerda, 1994, p. 105). In this paper we will use Kuhn's sociological paradigm as reflected by Patton. In so doing, we reject how the notion of paradigms and paradigm shift are often used in management books, i.e., "Sadly, Kuhn's work has frequently been misappropriated, especially in the business literature, where normal adaptive change is routinely hailed as a 'paradigm shift'" (Zuboff & Maxmin, 2002, p. 23). Management theories and models are often labeled paradigms (as in "structure follows strategy" or the agency theory), which are not paradigms at all (Clarke & Clegg, 2000; L. Donaldson, 1995; Miller, 2007; Wolf, 2005).

3.2. Paradigms used in academic studies

There is an extensive literature on the use of paradigms in management science (Huehn, 2008). These paradigms concern research on management, not necessarily those implicitly used by managers in their day-to-day work. Academic paradigms regulate academic research and academic teaching with respect to subjects such as governance, management, and organization. Whether these paradigms influence the behavior of practitioners and professionals in practice remains to be seen. Nevertheless, the teaching of specific theories, in terms of introducing specific language and expressions, may influence managerial behavior in a more lasting way, if only in the "obvious unconsciousness" of the Modern Management Tradition. It may be that practitioners emphasize that what they do in practice is different than what theory and MBA's teach; while undoubtedly the case, this does not exclude the idea that they are influenced by MBA teachings and executive courses. Like most people, managers often let their behavior and decisions be guided by implicit models, assumptions, and values, and through this structural causality, management models taught by MBA's may have more influence than is acknowledged by practitioners (Ghoshal, 2005).

The example of agency theory demonstrates how such a theory can influence, through the support of institutional investors, academics, and professionals, the regulatory system and court decisions, making it possible for a weak theory to have a strong impact on the decision making and behavior of managers (Ghoshal, 2005).

4. Relationship between paradigms and institutions

The idea of paradigm as used by academics cannot be straightforwardly applied to the field of business administration where the behavior of practitioners (CEO's, managers) and professionals (accountants, judges, consultants) is regulated by a system of formative institutions (accounting and reporting rules), laws, and governance codes and conventions. "Managers unconsciously think and act in professional situations according to a 'tradition' of management, and thus unconsciously are part of that 'tradition's widely shared 'pre-understandings of what they should do, and even how they should think in organizational situations. . . . They were formally taught this management tradition in their undergraduate and MBA as well as MPA classrooms. . . . There is a Modern Management Tradition that has been 'concealed by its obviousness'" (Kikoski & Kikoski, 2004). The economist Maynard Keynes was perhaps the first to understand this, when he wrote, "The ideas of economists and political philosophers, both when they are right and when they are wrong are more powerful than is commonly understood. Indeed, the world is ruled by little else. Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually slaves of some defunct economist "

Unlike those in science, the paradigms of business administration are not codified in exemplary theories, but rather in a number of social institutions. With respect to paradigms, it will be useful to make a distinction between:

- Paradigms as used in academic studies of governance, management and organization, and subsequently for business administration, management and organization;
- Paradigms used in various business institutions, strategy, management control, management accounting, corporate finance, organization design, HR, IT governance, and so forth;
- The codification of paradigms, especially those of management accounting, financial reporting, and corporate finance, regulating financial reporting, management accounting information, etc.;
- Multi-party codes of conduct;
- Corporation law and corporate governance codes;
- Formative institutions defining property and ownership, contract law, and standards;
- Informal or non-legal institutions, religion, and morality.

"Economic activity, entrepreneuring, setting up and running a firm, trade, investments, takes place on basis of and within an institutional framework" (Parson, 1940, quoted in (Hodgson, 1988, p. 123). Different types of institutions need to be discerned: formative institutions, complexity-reducing institutions, normative institutions, and business institutions. Picot *et al.* suggest that such instutions may be ordered in a nested hiërarchical way (Picot, Dietl, & Franck, 2005). Perhaps this is possible, this author assumes that although some ordering will exist, it is not a strictly linear nested hierarchy.

The first to be examined are the formative institutions, especially those that define secure and alienable property rights, and define legal entities as objects of trade that can be measured in terms of monetary value. "We also have the legal and later scientific development of social entities: human individuals, associations, corporations, and the state. These entities are created, given standardized and countable form, and linked to each other with rules of property and membership" (Meyer, 1994, p. 127). Economist Frank H. Knight (Knight, 1921/2005) argued that the profit of a business assumes economic change and the results of risk, especially risk that is not susceptible to measurement. But profit as a result of risk taking cannot be achieved given total uncertainty. The entrepreneur depends on enforceable contracts, full property rights, labor law, intellectual property laws, trade laws, corporate law (with limited liability), the patent system, banks, etc. The entrepreneur also depends on standards with respect to a monetary system, its measures and standards. As Greif (2006) points out in his *Institutions and the Path to Modern Economy,* based on their increasing economic power, European merchants were eventually able to force the feudal ruling class to acknowledge property rights and contract law, in order to develop a long distance trading system. The merchants wanted to reduce uncertainty through institutional arrangements (Baumol, 2010, p. 176).

The growth of big business at the end of the nineteenth century, with its high degree of capital intensity and levels of investment beyond the capacity of individual entrepreneurs, encouraged separating ownership from controlling parties by creating alienable securities that could be traded in increasingly liquid markets. "What made such markets possible was the development of social institutions like the limited liability corporation as well as standardized techniques for accounting and financial reporting" (Langlois, 2001). Today it is generally understood that the market acts as a coordinating mechanism of capital, labor, product and other markets, depending on the institution (Scott, 1995, p. 50).

Formative institutions include property law, the monetary system, corporate law, patent law, labor law, and tax law (Furubotn & Richter, p. 268) as well as language and writing, ethical values, measures, weights and other standards, division of time (hours, days, weeks), units of account and means of exchange (money scheme, mints of money, banks of issue).

In relation to the firm, formative institutions belong to the category of exogenous institutions, which are features of the society and the economy at large (Langlois & Robertson, 1995, p. 103). The firm as both legal persona and category is a social institution, created by exogenous and formative institutions. Accounting is based on formative institutions creating countable entities.

Marshall's profit-as-risk taking requires more than formative institutions. As opposed to uncertainty, risk assumes a certain limiting structure on behavior; that is, a certain limitation with respect to possible outcomes. Under conditions of limited information and computational capacity, constraints are needed at the micro level as well as macro level to reduce the costs of human interaction (North, 1990, p. 36). Hence, the category of complexity-reducing institutions. Such institutions are normative patterns that define what society feels are proper, legitimate, or expected modes of actions or of social relationships (Parson 1940, quoted in (Hodgson, 1988, p. 123). Institutions are *socializing agencies* that instill a particular set of norms or attitudes in those who operate within them (Hall & Soskice, 2001).

"Institutions are the humanly devised constraints that structure political, economic and social interactions. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rules (constitutions, laws, property rights). The major role of institutions in a society is to reduce uncertainty by establishing a stable (but not necessarily efficient) structure to human interaction" (North, 1990, p. 6). Throughout history, institutions have been devised by human beings to create order and reduce uncertainty in exchange (North, 1991; Volberda, Weerdt, Verwaal, Stienstra, & Verdu, 2012). Complexity-reducing institutions exist on a scale that differs from formal institutions, is exogenous to the firm, such as the system of industrial relations via laws, codes of conduct, to informal behavior contraining institutions, e.g., religion, sanctions, taboos, customs, and traditions (Williamson, 2000).

In addition to the firm's exogenous institutions, there are also endogenous complexity-reducing institutions. Endogenous institutions are specific to a particular industry, including research and development departments, industry-specific standardization, codified and uncodified corporate rules and procedures, and trade associations and lobbying groups

(Langlois & Robertson, 1995, p. 103).

A third type is the normative institution. These instill direction in what to maximize, minimize, or optimize. The religious puritanism of the eighteenth century was all about avoiding waste, as in time, effort, money, and material, and provided the basis for Taylor's scientific management (Weber, Parsons, & Giddens, 1992). A related maxim is the utility maximization of the neoclassical economy, often interpreted as the norm for managers to maximize profit or shareholder value. The neoclassical model assumes that firms are motivated by profit alone (Milgrom & Roberts, p. 65). An example of a normative institution is "The Value Maximization Principle: An allocation [of resources] among a group of people whose preferences display no wealth effects is efficient only if it maximizes the total value of the affected parties. Moreover, for any inefficient allocation, there exists another (total value maximizing) allocation that *all* of the parties strictly prefer" (Milgrom & Roberts, 1992, p. 36).

In the neoclassical paradigm of utility maximization, managers are assumed to achieve the highest possible level of efficiency: "efficiency is both an important device for organizing ideas and a useful criterion for evaluating performance" (Milgrom & Roberts, 1992, p. 23). In business administration, the paradigm of utility maximization and maximizing efficiency is one of guiding judgment and expectations—how to use available management tools regardless of actual behavior. Managers of firms are assumed to coordinate activities (including allocating efficiency) within the firm and on behalf of its markets more efficiently than market mechanisms (Coase, 1937). Utility maximization, profit maximization, and maximizing shareholder value are taken to a more inclusive level in the general welfare theorem: "The Fundamental Theorem of Welfare Economy: (1) if each productive units knows the prices and its own individual production technology and maximizes its own profits at the prevailing prices, (2) each consumer knows the prices and his or her own individual preferences and then maximizes utility given the prevailing prices and his or her income, and (3) the prices are such that supply equals demand for each good, then the allocation of goods that results is efficient: There is no other allocation consistent with the available resources and technological opportunities that the consumer would unamimously prefer" (Milgrom & Roberts, 1992, p. 62).

A newer development involves not maximizing shareholder value, but rather shared value, as created by the firm in cooperation with its suppliers, customers, infrastructures, public services, and government services (Porter & Kramer, 2011). The value created by the firm is thus the difference between the maximum-willingness-to-pay and the cost of resources.

Neoclassical economy as a normative institution lacks consistency. Its paradigm is based on both formative and complexity-reducing institutions, without which methodological individualism is not possible. At the same time, neoclassical theory assumes and prescribes that economic behavior is essentially nonhabitual or routinized, involving rational calculations and marginal adjustments toward an optimum level (Hodgson, 1988, p. 130). That is, neoclassical economy sees complexity-reducing institutions as limiting maximum utility or welfare (March, 1994). A specific example of complexity-reducing institutions, relevant for understanding the BSC, is the limited set of organization forms (H-form, M-form, et al.) deployed in the twentieth century.

Based on formative institutions acting as complexity-reducing institutions, and guided by normative institutions, a fourth type of institution is the *business institution*, where functions such as strategy, HR, management control, management accounting, and IT governance are referred to as functions within the internal organization of the firm]. Because each function has a more or less specific role with specific tasks carried out on the basis of a defined set of theories, concepts, and language that is complexity- and thus uncertainty-reducing, these are labeled business institutions (Langlois & Robertson, 1995). One of the most familiar is the limited set of organization forms used in business. "Thus, to call Chandler's M-form an institution is a convenient way of referring to the social technology of corporate management associated with it" (Nelson & Sampat, 2001).

Langlois and Robertson take the routine as the basic element of business institution, "a habitual pattern of behavior embodying knowledge that is often tacit and skill-like" (Langlois & Robertson, 1995, p. 1). The question is whether routines (especially ~~habital~~ patterns of behavior) should be labeled institutions. As we have seen, institutions are either formative; defining measurable, valuable and tradable objects such as firms, or institutions that reduce complexity by reducing alternative behaviors, especially given a high cost of information and communication. Routines may reduce complexity by reducing alternative behaviors, since a routine is a proven, possibly efficient way of accomplishing certain tasks. But routines as operational processes are specific to firms, products, and technologies.

Institutions by definition are not firm-specific. Even informal institutions are in some way or another codified, if not completely explicit, because like culture, institutions are transferable to new generations. Like culture, routines may be transferred to new generations of workers, but the utility maximizing paradigm of the neoclassical economy implies that routines are subject to the methods of scientific management which change routines in order to achieve greater levels of efficiency.

This paper does not adopt the routine as a business institution, but rather bodies of knowledge, concepts, normative models, language, and accepted theories for respective functions such HR, IT governance, management control, accounting, strategy, and organization design (especially organizational forms). Such business institutions are not necessarily industry-specific: they have a routine nature. Some, like management accounting, are enforced indirectly through corporate and tax law, enforcement that may also be informal within the interaction between the firm and the capital markets. "For example, a bank or shareholders may be more inclined to provide capital to a company that conforms to industry norms and routines. Given the imperfections of capital markets, this is an important source of information on the reliability and professionalism of organizational practices" (Volberda et al., 2012). Thus, business institutions may also have a complexity-reducing nature. The environment may exert, as expressed in institutional theory, effective pressures that fit with the adoption of "conformance-enhancing templates" (Heugens & Lander 2009, p. 64).

Three types of institutional isomorphism may thus be discerned—coercive, mimetic, and normative. "Coercive isomorphism results from both formal and informal pressures exerted on organizations, by other organizations upon which they are dependent and by cultural expectations in the society … The existence of a common legal environment affects many aspects of an organization's behavior and structure. Weber pointed out the profound impact of a complex, rationalized system of contract law that requires the necessary organizational controls to honor legal commitments. Other legal and technical requirements of the state—the vicissitudes of the budget cycle, the ubiquity of certain fiscal years, annual reports, and financial reporting requirements that ensure eligibility for the receipt of federal contracts or funds—also shape organizations in similar ways" (DiMaggio & Powell, 1983). Through management models spread by popular books and MBA texts, business institutions afford a language to communicate and think about management and organizations. This language is neither closed nor stable, and is itself an instrument of control. So it is understandable that a language has developed in which management and organization models such as contingency theory, theory X and Y, the resource-based view, etc., are labeled as paradigms (Huehn, 2008; Miller, 2007). As rather narrow and weak exemplary models, these theories may not satisfy the criterion of a paradigm, but their influence on language, thinking, and communication, perhaps in an implicit way, implies an effect on managers and other practioners comparable to the paradigms defined by Kuhn (Ghoshal, 2005). If Kuhn's sociological paradigm is a constellation of beliefs, values, and techniques shared by the members of a given community, its implication is a reduction from the overall beliefs and values of reducing complexity, akin to the function of complexity-reducing institutions. Therefore, we can take the four types of institutions as those which implicitly guide behavior, as constraining vehicles with respect to the paradigms of business administration.

Institutions do matter in terms of economic growth. If institutions are commensurate with technology, critical objects of property rights, relative prices, types of economic activity, etc., they will encourage innovation and improve efficiency. If institutions are lagging, especially new technologies and their required types of contracting and financing, institutions may retard innovation and thus economic growth (Langlois & Robertson, 1995). Williamson's observation that once in a hundred years will come a need for institutional change (first order economizing), whereas governance models or business models change every ten years (second order economizing, though based on information goods, this rule is merging with the daily changes of optimizing resource allocation, third order economizing) (Williamson, 2000).

Within management theory and management practice, there is an unrelenting search for the criteria of success, a search concentrated at the level of individual managers, leadership, the level of organization (e.g., organizational culture), etc. In terms of implicit patterns of influence on behavior, this kind of research is often too narrow: "The problem wasn't management, per se, but the institutionalized practices and logic that shaped managers' work" (Zuboff & Maxmin, 2002, p. xiii).

5. The Firm as Institution

5.1. Introduction

In society, the firm as a category of organization, in conjunction with the market and contract law, has become an economic institution (Williamson, 1985, p. 15). At the same time, the concept of the firm is based on a number of exogenous institutions, itself a formative basis for a number of business institutions, as well as the concept of the firm as a complexity-reducing institution.

The firm as we know it today—incorporated as a legal persona, the nexus of contracts between investors, an employer, an instrument for resource allocation according to Chandler's visible hand—is a rather recent phenomenon, deliberately created at the end of the nineteenth century.

In economic theory, there is extensive writing on the theory of the firm (Fandel, 2010; Foss, 2000). But an elaborate micro-economic theory of the firm still awaits. In 1998, Michael Jensen repeats the complaint published by Jensen & Meckling (1976): "The material generally subsumed under that heading [the theory of the firm] is not actually a theory of the firm but rather a theory of markets in which firms are important actors. The firm is a 'black box' operated so as to meet the relevant marginal conditions with respect to inputs and outputs, thereby maximizing profits, or more accurately, present value" (Jensen, 1998, p. 52). A genuine microeconomic theory of the firm, one designmed to guide the decisions of managers, has yet to be developed. Thus, "the theory of the firm is still incomplete and unclear" (Demsetz, 1991). Traditional economic analysis generally characterizes the firm as simply a 'black box' that transforms input (labor, capital, and raw materials) into output (Brickley, Smith, & Zimmerman, 2001, p. 7).

"Traditional neoclassical theory of the firm 'takes the firm a the unit of analysis'. That is to say, the formal neoclassical theory of the firm takes the 'firm' as a fundamental building block in the construction of a theory of the industry. This building block is simplified and an anthropomorphized ideal type—a 'monobrain,' as Fritz Machlup put it" (Langlois & Robertson, 1995, p. 8). Williamson defined the (large) firm as a governance system; beyond the firm being a black box, the input/output production function is assumed in neoclassical economic theory. In Williamson's concept of the firm as a governance system, one of its tasks is to allocate resources to available options for investment in the most efficient way. This function, labeled the internal capital market of the firm, is assumed in Chandler's definition of business administration. This is also the core of Anthony's original definition of management control: "The process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization objectives" (Anthony 1965, p. 17, quoted in Kaplan 2010).

Contrary to Coase's (1937) paper, *The Nature of the Firm*, the changes in the nature of the firm are better understood using Chandler's (1977) concept of the *Modern Business Enterprise*. The concept of the Modern Business Enterprise (MBE) describes a number of characteristics that are pertinent to both corporate governance and to the control of the firm by the management of the firm, the role of business institutions, and the foundations of management accounting and management control, respectively the tools of management employed by executives and managers.

5.2. Chandler's Modern Business Enterprise

In *The Visible Hand,* Chandler (1977) introduces his concept of the *modern business enterprise* (MBE). Chandler defines this as a multiunit enterprise, as opposed to the traditional single-unit enterprise. Each of these units is self-contained and administered by a full-time salaried manager. Each unit has its own set of books and accounts and could operate independently. Salaried unit managers are monitored and coordinated by headquarters; this coordination and monitoring includes transactions between units. It could be argued that until about 1990 this description of the modern business enterprise acted as a paradigm for how to organize a large vertically integrated multi-business firm.

Rajan and Zingales (2000) point out that from the perspective of corporate governance, Chandler's MBE offers three features. First, the MBE is defined by its ownership of physical assets; the legal boundaries of the MBE coincide with physical assets. The second feature is that the MBE typically requires more investment and risk-taking than what is possible from the capacity of management. This was solved by the system of shareholders, as a result of which, at least in the U.S, the MBE is owned by shareholders, representing a separation of management (control) and ownership. Third, "the concentration of power at the top of the organizational pyramid, together with the separation between ownership and control, made the agency problem between top management and shareholders the corporate governance problem" (Zingales, 2000).

On closer inspection, Chandler's MBE turns out to depend on a number of specific institutional arrangements that are pertinent to the field of business administration.

The most obvious characteristic of the MBE is that it is shaped by (corporate) law. Before 1850, firms were either personal undertakings, with no separation between private capital and that of the firm, or enterprises organized as partnerships. Only a few chartered companies, like the Hudson Bay Company, existed. Corporate law incorporated the firm as a legal persona, its various interests depending on its jurisdiction, even in terms of its managers and shareholders, with a separation of firm capital from the private capital of managers and owners (allowing for capital accumulation as needed for large investments, in order to limit the liabilities of its shareholders). This introduced limited liability of the shareholder and the transferability of ownership for the firm, independent of its continuity. The corporation as a legal persona may sue others or be sued. In Dutch jurisdictions, the firm as a corporation has interests of its own vis-à-vis the interests of its shareholders and managers.

Another characteristic of the MBE is how it is definined by the ownership of its physical assets (including patents); its legal boundary coincides with the boundaries of its physical assets. The MBE incorporated as a corporation, i.e. legal persona, owns the physical assets pertinent for value creation, and the right of alienation of these physical assets is the exclusive right of the MBE as a corporation. Subsequently, this right lies with management as statutory administrators of the corporation.

The MBE also represents the separation of labor and capital as codified in corporate law in various western countries and in labor laws. This separation of labor and capital implies that a hired worker sells only his or her work, and is not required to provide capital such as tools to the workplace. The separation of labor and capital implies that the worker has no rights to residual claims on the firm, which accrues only to shareholders. Neither has the worker voting rights in a general meeting. Part of this characteristic rests with the role of tacit knowledge carried by the worker (what Weber labeled *Fachwissen*), which is owned by the worker and acknowledged as material to the value created by the firm, but in combination with idiosyncratic work methods, tools, standards, and an immobile labor market, a hired worker is not able to monetize the value of his or her uncodified personal knowledge. Therefore, the firm's investment in non-physical assets such as worker training, organization, and working methods may be safely assumed to produce ownership value for investors, so that the value created by intangible assets would accrue to investors. Thus, the concept of the MBE is based in the separation of capital and labor. In neoclassical economic theory, labor has no part in the firm but is a purchased commodity that does not bring any form of capital into the firm. By implication, the capital base of the firm consists of only physical assets, including such intangible assets as patents, as these have been defined as measurarable alienable entities. Human capital is not assumed to be part of the capital base of the firm.

The fourth characteristic of MBE is that management is granted the right to instruct employees on what and how to do concerning a job, subject to information asymmetry between management and employees. The right to issue instructions is based on two grounds. The first is that management is a legal representative of the corporation as owner of firm assets. As a fiduciary owner of assets, management may attribute (or not!) the right to make use of assets (*ius utendi*) to employees, whilst retaining the right to the income derived from such assets (*is fruendi*) and the power of management, including the right of alienation of assets (*ius abutendi*) (Furubotn & Richter, 2000, p. 77). Assets may be either physical or intangible but alienable such as patents. The other basis for management's right to instruct workers is implied by the labor contract as an incomplete contract (Simon, 1991).

The fifth characteristic of the MBE is a system of double-loop controls that have tight command-and-control to compensate for the lack of a market mechanism to enforce efficiency. In addition to the command-and-control through a normal hierarchy, staff departments could audit efficiency and compliance with corporate policies in an effort to reduce information asymmetry between headquarters and decentralized units. This characteristic assumes the double loop control is an effective and sufficient mechanism to eliminate information asymmetry within the internal organization.

The sixth characteristic of the MBE is that the value creation process of the firm falls within the boundaries of the firm, that transactions with third parties are conducted at arm's length based on complete once-off contracts.

The seventh characteristic of the MBE is that its administration requires general knowledge only (Jensen, 1998, p. 103). This is based on the premise that the capital base of the firms consists of physical assets and codified knowledge, either embodied in physical assets or patents, and that knowledge is easy to transfer without inhibiting cost. This allows management of the firm to have control over operations while negating the colocation principle.

The eighth characteristic of the MBE is that cashflow ‘belongs’ to insiders, in the sense that they can and should use it to grow the firm by investing the free cashflow in R&D. This assumes that the free flow of cash so invested will result in an increase in property rights for the shareholders, but also an immobile labor market, especially of R&D staff, and an inefficient capital market with respect to funding new start ups. The separation of ownership and control implies that accountability of management to its shareholders is a legal issue, so that protecting the rights of the shareholders in the context of rules for management accounting became a legal prescription, and changed from endogenous rules to exogenous rules for the firm.

This concept of the MBE as an institution in society subsequently shaped what was to become the tools and methods of business administration and within that functions like management control, management accounting, HRM, and strategic planning including various management models and organization forms of the firm. The separation of labor and capital (labor being a commodity) necessitated a system of job descriptions and related wage scales and performance assessment systems.

Essentially all concepts, methods, and models for management and organization taught in MBA curricula are based on this Chandlerian concept of the MBE, as well as systems for corporate governance in various national jurisdictions. Core to the concept of the MBE and what is based upon it is the idea of private property rights, in particular property rights in the broad sense of Anglo-American common law, in which property rights relate to both tangibles and intangibles (patents, copyrights, and contract rights) (Furubotn & Richter, 2000, p. 76). A property right gives the owner discretion over tangible assets and identifiable tradeable intangible assets in terms of absolute use and the right to exclude others from using these assets.

Following Roman law, ownership is fragmented in the MBE. Management will attribute to an employee the right to make use of an asset (building, equipment, a lathe or patent), this is the *ius utendi*. The second element of ownership (*ius fruendi*) remains with the corporation: the money earned by deployment of assets belongs to the firm, as does the right of alienation, selling, changing or destroying an asset (*ius abutendi*). Property rights applied in this fragmented way provides management of the firm control over employees because management has the power to either grant or deny workers the right to use a physical asset.

The nature of the firm as an MBE, as previously defined, implies that management has the right to partition and allocate assets of the firm such as investment capital, operating capital, equipment, buildings, patents, and so forth, to the various activities of the firm. Partition of resources will be based on task specialization in order to achieve efficiencies (asset specificity according to Williamson); allocation will be based on the prospective return on investments projects, such as investment in divisions or business units. From the perspective of general welfare theorem, this right to allocate resources is a duty, consistent with Coase's theorem, and the objective to be achieved is the most efficient allocation of available resources. The right and duty to achieve this is assumed to be enforceable on the basis of assets as physical. A further assumption is that management has all the information on production capabilities and the value of investment opportunites it needs in order to allocate assets of the firm in the most efficient way, compared to the efficiency of the capital market and product markets.

After a necessary elaboration on some of the business institutions, the consequences of the shift toward intangible assets and toward specific knowledge, the emergence of information products related to the concept of the MBE will be discussed.

6. Business Institutions

6.1. Paradigms used in business institutions

Multiple business institutions exist—management accounting, HR concepts, organization forms, concepts for strategic management. The institutional workings of each vary in strength in terms of guiding behavior and defining business practices. In the case of management accounting, this institutional strength may depend on accounting rules having a mandatory legislative status, such as the IAASB rules. Other business institutions may rely on language. In particular, for organization theories that have no legal basis except through their models, concepts, and the specific language that such models introduce, their effect is material. The toolkits with which business schools equip their students (Langlois, 2001) to a large extent involve language. The work of business institutions is complicated by various aspects, especially since their interrelatedness is not always clear to those involved.

The various subjects applied in business administration, strategy, organization design, management control, management accounting, HRM, IT governance, and corporate finance are taught as separate specialized fields, the functional silos of business academia reflecting the "simplify and specialize" strategy of the Business School 2.0 educational model (Moldoveanu & Martin, 2008, p. loc 1233). These academic silos mirror the internal organization of the firm, in having separate departments for finance, HRM, IT, etc. The executive is supposed to coordinate and integrate such functions using the perspective of entrepreneurship and thus creating value through innovation.

Some of the paradigms used in the business institutions are conventions as opposed to theories. *Accounting Theory* (Godfrey, Hodgson, Holmes, & Tarca, 2006) does not specify a theory as such, but simply describes the use and background of accounting rules, as these serve entrepreneurs and investors, without which entrepreneurship and investing would be too costly. This is somewhat different with respect to organizational forms, especially at the governance level of the organization. Organization forms concern the configuration of resources as in e.g the functional organization or as in the unit-organization.

During the twentieth century, only a limited number of organization forms were deployed such as the H-form, the U-form, and the M-form. Williamson (1975) explains the choice of such forms on the basis of transaction costs and asset specificity. As previously argued, a limited number of organization forms served to limit complexity and was used as a kind of normative convention to create clarity with respect to roles, responsibilities, and tasks. Thus, the limited set of organization forms was aimed at reducing the variety of behavior in organization to reduce the costs of human communication.

This paper will focus on two business institutions in order to produce a broader understanding of the concept of the BSC. The first is the organization—or more precisely, the limited number of forms used in organization theory. The second business institution we will focus on is resource allocation. The decision to focus on the organization arose because the organization form contains the architecture of the way the internal organization of the firm used to be defined (and often still is): the partition and attribution of rights, configuration of resources, system of accountable entities whose performance can be the basis for rewarding individuals. The organizational form often defines a system of evaluating the performance of individuals and departments (Brickley et al., 2001, p. 5). Organizational forms involve the language of structure, positions, authority, power and, by implication, roles and identities. The organizational form and its theories have a strong institutional basis, but due to the declining costs of information, the role of structure has diminished while a tension has developed between traditional organizational forms and new, more efficient economic models of business.

Resource allocation was chosen because the BSC addresses standard practices for resource allocation. In addition, existing processes of resource allocation are based on tangible assets and therefore show a bias toward under-investing in intangible assets. Studies by Burgelmann and Christensen (1997, 2009) have revealed problems with the process of strategy execution due to resource allocation issues (Burgelman, Christensen, & Wheelwright, 2009; Christensen, 1997). These issues go beyond budgeting. Bower, architect of the most popular resource allocation approach, concluded that his bottom-up process should no longer be used since it was not applied properly and the design was incapable of dealing with intangible assets (Bower & Gilbert, 2005a).

When it comes to institutions, business institutions have a particularly ambiguous nature. They may be seen as routines that provide efficiency at the level of system design and maintenance of the organization, but can also function as complexity-reducing institutions which emphasize and legitimize specific concepts and practices that prevent the use of alternatives. Accounting rules are a system unto themselves; as a result, management accounting tends to be as well. Human resources is a somewhat hybrid system. While labor laws are subject to political legislation, HR policies tend to be at the discretion of the firm. Strategy in turn is more complicated. Textbooks on strategy are rarely innovative, but new concepts for strategy definitely exist; leading firms to innovate their strategies beyond the conventional.

Business institutions depend on national institutions for their effectiveness, e.g., industrial relations and labor laws. Guillén explains how Taylor's scientific management was adopted by various countries, including the eastern bloc countries, but the application of specific scientific management ideas was adapted to suit the local institional context (Guillén, 1994). Blok's (2013) dissertation on human resource management describes how the historical development of human resource management differs between the U.S. and the Netherlands, due to national politics, the nature of the market, institutions, history, etc. Thus, one could conclude that the entrepreneurial urge for creative destruction to achieve new levels of efficiency, with respect to management and organization, is not supported by an understanding of the implicit paradigms codified in business institutions.

6.2. Organizational form

A loose definition of organizational form is the configuration of resources of the firm, with a related hierarchy of decision rights and reporting. Such forms are often expressed as the organizational structure, composed of rights, responsibilities and reporting in a Weberian bureaucratic hierarchy. Seen as either a profit center, cost center, revenue center, investment center etc. (Brickley et al., 2001, p. 433), the organizational form divides the internal organization of the firm into accountable entities in which performance targets may be set and performance measured.

The forms usually listed are those of the unitary organization (U-form), multidivisional form (M-form), and holding form (H-form) (Williamson, 1985, p. 285). In addition to these standard forms, there is a matrix organization and project organization. Various types of organizational forms for multinational companies (MNC) also exist (Davis, 1979; Dunning, 1993; Galbraith, 1973).

Organizational form has to be distinguished from the character or nature of an organization, i.e., organic versus mechanical (Burns & Stalker, 1963), a loosely coupled organization (Weick, 1976), those having a strong culture, etc. The organization's form should be distinguished from the legal form chosen by a firm. The franchise organization (e.g., McDonald's) is a hybrid organization using legal terms of ownership for subsidiaries as an instrument for the internal organization of the franchisee (Bradach, 1998).

The U-form usually applies to the single business firm, and is characterized by specialized functional departments (manufacturing, logistics, sales) and a line-and-staff organization.

In the M-form, the activities of the firm are separated into market segments based on self-contained non-legal entities, each with the status of a profit-investment center. The M-form includes a general office tasked with 1) identifying economic activities within the firm (setting the business scope for each division); 2) according quasi-autonomous standing (generally of a profit-investment nature; 3) monitoring the performance of each division against set standards with respect to market and financial performance, and against identified efficiency levels through a system of double control; 4) awarding incentives; 5) allocating operating and investment capital to divisions, and financing the overall firm; and 6) performing strategic planning (changing the business scope of divisions, diversification, acquisition, divestitures) (Williamson, 1985, p. 284).

In the H-form, the firm is broken up into subsidiaries, each with its own corporation whose shares are fully owned by the parent company. The free cashflow generated by the subsidiaries may accrue to the parent company, but may be minimized in the case of subisidaries that have preemptive claims against their earnings. In the H-form there is no double-loop control as with the M-form; thus, the information asymmetry between parent and subsidiary may involve considerable agency costs.

The choice of one of the specific forms listed above depends on the information to be processed by the firm, especialy in view of dynamics or changes in the market, either in degree or in kind (Grandori & Kogut, 2002; Williamson, pp. 281-283). The functional specialization within the U-form is based on achieving growth in labor productivity, as documented by Adam Smith, and requires a high level of centralized information processing to achieve the needed coordination and adaptivity to changes in the market, hence the line-and-staff organization within the U-form: "Problems are thus factored in such a way that the higher-frequency (or short run) dynamics are associated [organized in] with the operating parts while the lower-frequency (or long-run) dynamics are associated with the strategic system [staff departments, headquarters]" (Williamson, 1985, p. 283). The M-form, as developed by DuPont and Sloan, was designed in part to resolve the problems of information overload experienced at headquarters caused by a large U-form type organization that had diversified products (such as DuPont), and partly to avoid the opportunism seen in the H-form (General Motors). It was also intended to address the high costs of information and communication that existed at the time, as well as the slowness of communication and the limited capacity of communication channels (Stinchcombe, 1990).

Within both the U-form and M-form, decisions must be made with respect to performance measures and decision rights to be attributed. For this reason a system was developed that featured cost centers, expense centers, revenue centers, profit centers, and investment centers, with the choice based on the nature and degree of information and knowledge asymmetry between central and decentralized management (Brickley et al., 2001, p. 433).

The choice between the H-form and the M-form is thus based on asset specificity, anti-cartel legislation, and the objectives of investors (particularly when it comes to financial portfolio strategies). Asset specificity and the high cost of information and communication, and thus self-coordination, may pertain to more specific resource configuration. A high level of asset specificity in combination with a high cost of coordination would lead managers to choose a vertically integrated self-contained divisision and business unit, with few synergies to be exploited among divisions.

The H-form is mainly used for reasons of strategic market control, and provides little value to subsidiaries or shareholders. The M-form has more potential for delivering value, but is not without problems.

Earlier, we explained that a limited number of twentieth-century organizational forms were applied to reduce or suppress complexity. The traditional framework for this discussion is the contingency theory and framework implied by Chandler’s (1962) dictum, "Structure follows strategy … but the market is the common denominator" (Chandler, 1962, pp. 382-383). This dictum suggests that organizational form has to satisfy the criteria of fit-to-strategy and fit-to-market. However, organizational design in the twentieth century turned out to be a choice between a limited set of discrete forms rather than a solution to a specific problem (Grandori, 1997). "There is only a loose relationship between organizational forms and practical needs and goals operating in local situations. In this sense Western organizational structures are to be seen as ritual enactments of broad-based cultural prescriptions rather than the rational responses to concrete problems that the cultural theories purport them to be" (Meyer, 1994). In this way, Meyer emphasizes the institutional role of the limited set of organizational forms.

The use of a limited set of organizational forms could work because such forms are primarily about configuring resources at the governance level of the internal organization, not so much about the operational process itself. Designed by the field of industrial engineering, operational processes are defined by firm-specific products, technology, and tacit knowledge, including routines. In the economy of the second industrial revolution, these processes usually were organized within departments or divisions. Therefore, the relation between organization design and the business model of the firm was limited to processes organized within departments; any relationship of the business model to the organizational form at the governance level was weak if not nonexistent. Compared to the current economy, the differentiation of business models was limited; differentiation of operational processes did not affect the choice of organizational form.

Another reason for a limited number of organizational forms was that this was a defining organization structure; the only legitimate structure was the Weberian hierarchy with a linear chain of command, defined positions, and subsequent roles. This hierarchy reflected the structure of society during the first half of the twentieth century. Later debate on the matrix organization and its problems illustrates the difficulties this concept created (Davis & Lawrence, 1978). The Weberian hierarchy reflected a need for institutional limitation of alternative behaviors in relation to the high cost of information and slow communication.

A third reason for the limited number of organizational forms was that their functioning was based not only on a Weberian hierarchy, but enabled by a well-defined management accounting system which performed certain tasks better than either managers or the capital markets. It provided strong incentives for managers to seek profit-oriented goals; it increased the power of these incentives through internal audits linking performance in a discriminating way; and it monitored and measured procedures to help allocate cashflow to high-yield uses in a sequential, adaptive manner (Johnson & Kaplan, 1987, p. 99). At the same time, due to the high cost of information, this management accounting system was a linear system, based on well-defined physical assets, congruent with a linear chain of command. To control the unit-organization, DuPont devised the ROI tree which gave them minimal information optimal control over the firm. The available capabilities of management accounting systems did not allow for a high variety of complex organization forms.

From this derived a fourth reason for having a limited number of organizational forms: the investor.

Because management located at headquarters carries fiduciary duties vis-à-vis shareholders, the decision to allocate available investment capital over units (divisions) is a power reserved by the management of the firm. This allocation of capital, which includes entry into and exits from markets, divesting and acquiring activities, and investment in research and development, was to be based on firm strategy set by management (Chandler, 1996). However, when it comes to making allocation decisions, management depends to a large extent on information supplied by units. The allocation or withholding of capital, in combination with the right to define the structure of the internal organization (based on market segments or business scope), remained the central tool of control, to which was added the right to select, appoint, assess, compensate or dismiss management of units and other key positions in the organization.

Strategy setting was the first task of headquarters in a multi-unit organization, allocation of capital and related objective setting was a second task, and monitoring and issuing corrective action was a third task in an operational paradigm for how to administer a multi-unit organized firm. After World War II this operational paradigm was taught to managers (without the phrase "paradigm." which only became popular in the 1970s) through the work of Peter F. Drucker (*Concept of the Corporation,*1946; *The Practice of Management,* 1954), Alfred P. Sloan's *My Years with General Motors* (Sloan, 1962/1986), and Chandler's *Strategy and Structure* (Chandler, 1962). Investors still sought familiar organizational forms as a means of assurance they would get return on their investment. For investors, a limited set of organizational forms limited complexity and thus uncertainty, even when such an approach was not the most efficient from an economic standpoint.

A fifth, related reason was the previously mentioned institutional isomorphism: coercive, mimetic, normative. That is, it was sometimes more efficient for a firm to mimic an existing succesful organization as opposed to developing a completely new one on its own.

As stated, the managerial or organizational structure is the most salient characteristic of the the twentieth century organization. It is not only is a configuration of resources, both physical and human, in the traditional organizational structure, especially that of the division and business unit, but also structures information within the organization, i.e., each division and unit would keep its own books. To control individual initiatives, structure (with its implied information asymmetry) also served to guide the thinking of lower level managers and employees, generally reinforced by an incentive system based on unit performance. The linear hierarchy with a linear, non-overlapping system of accountable entitities was consistent with an additive profit model. Also, the organization forms mentioned were consistent with what was then a hierarchical society. In the last quarter of the twentieth century, given the emergence of intangible assets, and changes in society, the emancipation of workers, increasing level of education, and changing information space, limited organizational forms were felt to be too restrictive. The loss of opportunity implied by a limited set of organizational forms no longer balanced the benefits of complexity reduction.

The information processing capacity of society at large and within firms has greatly increased; combined with the need to exploit synergies at the firm levels, caused by the relevance of intangible assets, a limited set of organizational forms across divisions no longer provides efficient solutions for emerging business models at corporate levels. The limited set of organizational forms must yield to specifically designed forms, which depend on specific corporate level business models that emerge, as in the case of IBM. For the time being, however, changing design of organizational form conflicts with the use of the traditional forms when it comes to assurance, social habits, and professional routines. As we will see, Kaplan and Norton's concept of *strategic themes* addresses this issue.

6.3. The Resource Allocation Process as a Business Institution

The M-form, as the most widely applied organizational form of the twentieth century, created the need for a resource allocation process, otherwise known as internal capital market or allocation process. The management of a multidivision firm is designed to allocate available and attainable capital in the most efficient way to projects, traditionally known as divisions. This allocation is subject to information asymmetry between the management of the firm and the management of divisions, who may have divergent objectives, criteria, and values (Pratt & Zeckhauser, 1991; Simons, 2000, p. 139). Information asymmetry involves issues such as market opportunity, capability, efficiency, technological development, assessment of competition, industry development, the role of the capital market, and so forth. Divergent objectives are often more personal of nature, but may be influenced by elements of the reward system.

Peter F. Drucker (Drucker, 1954) addressed the issue of information asymmetry in the early 1950s with his *Management by Objectives* (MBO), where headquarters would sit down with lower level managers to discuss attainable objectives, each side bringing to the table information on market opportunities and opportunities for efficiency improvement and innovation. In this system, the information asymmetry between different layers of management can be reduced by an exchange of views and visions, and a maximum use of information, especially held by those lower in the organization, can be achieved.

Based on a reward system and psychological mechanisms such identification, bounded rationality, satisfying behavior, and escalating commitments, in many cases the budget setting process based on Drucker's system of management by objectives degenerated into a game between firm management and managers of the various divisions, business units, and departments (Hofstede, 1970). That is, while the MBE concept assumes agency costs between shareholders, the capital market, and the management of the firm, serious levels of agency costs may arise. The latter category is intensified by two developments. The first is the increasing differentiation and dynamics of the economy, combined with a greater use of specific knowledge in the various processes, requiring more information to be processed in order to reduce information asymmetry.

The costs of information and communication, and subsequently the capacity for processing information, began to decline only in the second half of the 1980s. Starting in the 1970s and increasing in the 80s, the capital market became a more active part of the management of firms. A new generation of investors, equipped with the tools of corporate finance, set stricter financial objectives and criteria for management, emphasizing financial control and accounting information. As a result, the relationship between the headquarters of multi-business firms and multi-divisional firms became dominated by financial holding, with only financial or accounting data being reported and no (non-financial) data from the field of industrial engineering assumed by the system of double control (Useem, 1993). The Total Quality Management movement brought needed attention to management for non-accounting data to run operations by measuring yields, default products, and applying various industrial engineering methods to systematically improve labor, materials, and energy productivity. In most cases, however, reporting on TQM parameters was unrelated to the financial reporting between divisions and headquarters (see also Johnson & Kaplan, 1987).

In his *Managing the Resource Allocation Process*, Bower (1970) formalized the resource allocation process based on Drucker's MBO, through a bottom-up resource allocation process designed to reduce information asymmetry between headquarters and divisions, and taking into account the various psychological mechanisms involved. Bower's became the standard resource allocation process used by most firms, often reproduced in standard textbooks on management control, as seen in Figure 3 (Anthony & Govindarajan, 1995; Merchant & Van der Stede, 2003).

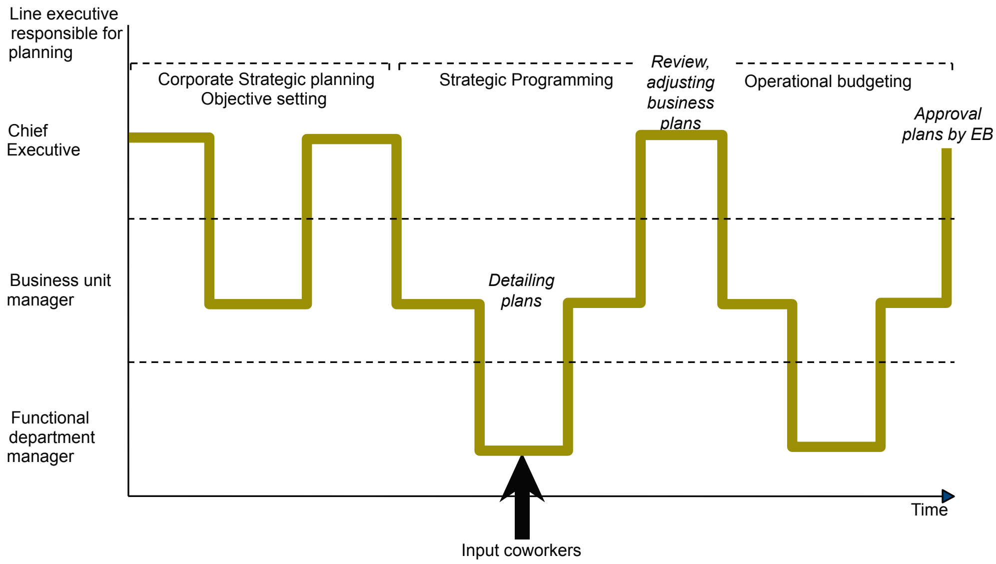

Figure 3. Bower's bottom-up resource allocation process (Lorange & Vancil, 1977; Merchant & Van der Stede, 2003, p. 304).

Without intending to, Bower's bottom-up resource allocation process morphed into a capital allocation or budget process, asssuming the division a black box production function, like that of the firm in neoclassical economic theory. A serious critique focused on the budgeting process. Advocates of beyond budgeting argue that a budget has the following fatal flaws (Kaplan & Norton, 2008, pp. 186-187):

- Creating a budget can require excessive time and money;
- A budget can prompt managers to lowball estimates of revenue and income, for fear of consequences from Geneen-, Dunlap-, or Ebbers-type managers should they fall short on a budget target;
- Budgets stifle innovation;
- A budget can quickly become obsolete in a rapidly changing, globally competitive business environment;
- Escalating commitments can result in a waste of investment funds (Pfeffer, 1997, p. 72);
- Poorly designed reward systems can result in ill-defined objectives (Jensen, 2001b).

In addition, the10% of the overall budget of a firm spent on strategic development is not always properly tracked by the organization, as it is often omitted from the regular monitoring and control loop, and because managers tend to spend more time and attention on the 90% operational budget. "Many organizations fail in strategy implementation because the necessary people, capital, and financial resources are not provided for in the budget, which, in these organizations, is done completely separately from the planning process. As a consequence, initiatives get implemented on the cheap, trying to steal time from already busy people and with funding scraped together from small improvements in the operating budget" (Kaplan & Norton, 2001, p. 293).

In many cases, the broader functions of the resource allocation process got lost. These are:

- *Prévoyer*: To challenge managers to think about future business opportunities, developments, how to prepare for change events, shaping the future, and developing proactive controls;
- To develop a commitment to the strategy of the firm and agreed objectives, both financial and non-financial;
- To coordinate diachronic and synchronous activities, capacities, and initiatives;
- Using the planning process to see business in a wider perspective and develop a better understanding of the industry, business models, etc.;
- To motivate managers that through the planning process and dialogue they can accomplish agreed upon objectives and what these will bring them in terms of rewards, both material and social;
- To identify the most efficient allocation of available resources for investment plans.

The efficiency of the internal capital market formalized in Bower's bottom-up resource allocation was questioned by the capital market in the 1980s, partly as the result of a more efficient capital market (G. Donaldson, 1994; Goold & Campbell, 1987), and partly due to a shift toward financial control, with the loss of double loop control and non-financial information. Nevertheless, Bower's process is still widely used, despite being heavily criticized (Jensen, 2001a, 2001b), as well as Bower's own assertion that the model is incapable of dealing with intangible assets and should be discontinued (Bower & Gilbert, 2005a).

As stated, Bower was very much aware of the psychological mechanisms beyond information asymmetry that define the effectiveness of his bottom-up resource allocation process. The interactive perspective model of organizational behavior explains that actual behavior of individuals in organization (e.g., bottom-up proposals to execute a proposed strategy) results from an interaction between personal traits and capabilities and the (systemic) context within which the individual operates (Greenberg, 2010, p. 70). This is reflected in Bower's representation of his bottom-up RAP in Figure 4. The context from the interactive perspective model of organizational behavior is shown as the *systemic context* in the right-hand column of Bower's model in Figure 4.

The Corporate Environment: The Capital Markets, The Talent Market			
Type of Activity	**Technical – Economic Definition of Content**	**Commitment of Resources**	**Systemic Context (Structural, Cultural and Cognitive)**
Corporate	Mission, goals, policies. Developing plans and programs to shift the strategic domain and economic quality of the business portfolio in response to corporate goals, competition, and market response	Decisions to allocate capital and people to one or another set of plans	Building the organization and information planning, and budgeting systems for measuring and rewarding business and management performance; the work environment; and the value premise
Integrating (governance)	Translating and applying corporate plans to the concrete possibilities provided by the business units. Stimulating the modification of corporate plans to exploit unit opportunities	The brokering of proposals. Selection of programs to support	Adapting the corporate context to the needs of particular businesses and the abilities of particular managers. Changing the context.
Operating (BU)	Building plans and programs involving new processes, products, markets, and capabilities	Proposals to obtain resources to support plans and programs. Sometimes called "championing."	"Making the system work" for this business at this time. Proposing changes in context.
The Business Unit Environment: The Markets for Products and Services			

Figure 4. Bower's representation of his bottom-up resource allocation process, including the dimension of the systemic context in the right hand side column (Bower, 2000).

This systemic context consists of such elements as career patterns, status systems, system of rewards, organizational structures, availability of information, or organizational culture and climate. Other aspects include psychological aspects of decision making, intended to reduce complex problems or escalating commitments. As too often happens, the language found in bottom-up proposals appear to respond to a top-down strategy, but in reality reflect personal and parochial objectives; as a result, the new strategy is not adequately executed (Christensen, 1997). For this reason, Bower and Gilbert revised their bottom-up resource allocation process, where a new strategy is first translated into a systemic context which is adapted to the new strategy, before the strategy content is communicated (Bower & Gilbert, 2005a).

Others, especially those based on budget gaming, have critized Bower's bottom-up resource alloction process, including Michael Jensen in his *Paying People to Lie* and the beyond-budgetting movement—alas, without offering much of an alternative (Jensen, 2001a, 2001b). Underlying this criticism is the fact that the resource allocation process may end up lower level management being focussed on two elements. The first is that in the Planning Guideline, that top-level management generally uses to communicate strategy to lower level management, limits for investment capital are set, but a lower level manager's goal is to acquire as much of the available resources of the firm as possible, using opportunistic objectives to grow his own business unit and personal status.

A second element of the traditional resource allocation process is that in many cases, the compensation for lower management is based on unit performance. Especially when it comes to the hurdle bonus system, lower level managers tend to (consciously or unconsciously) negotiate lower performance targets to lessen the risk that they might miss the maximum bonus. A cap on bonuses could motivate managers to push revenues and profits to the next year (Jensen, 2001a). The effect may be that lower level management targets may not match the maximum technical performance of the firm.

Depending on the type of performance metric used, the M-form could lead to unwanted effects. Thus, a unit manager could be set a target in terms of ROI or ROCE. However, using the bottom-up resource allocation process, the same manager is expected to propose market opportunities as the basis for investments, e.g., production capacity. Markets are uncertain,so are perceived market opportunities. If a market opportunity is overestimated but approved as the basis for investment in production capacity, underutilization of that capacity may result. The targeted ROI or ROCE could be missed and the unit manager will miss out on a bonus. To play it safe, unit managers tend to be conservative in assessing market opportunities and limit investments in terms of new or additional production capacity, such a behavior could hurt the fim in the long run. Hence, the capital market prefers to separate the management of market opportunites and resource exploitation (as in the case of Procter & Gamble).

In addition, existing capital allocation models or budget processes show a bias toward investments in tangible assets, resulting in underinvestment in intangible assets. "The way companies allocate capital internally is influenced by their perceptions of how equity holders and lenders value companies. Conversely, the perceptions of owners and agents about how companies are managed and how they allocate their funds internally will influence the way in which investors value companies and the way in which they attempt to affect management behavior … favors those forms of investment for which returns are most readily measurable - reflecting the importance of financial returns and the valuation methods used by investors and managers. This explains why the United States underinvests, on average, in intangible assets, where returns are more difficult to measure" (Porter & Wayland, 1992).

7. Changes

7.1. Institutional levels of change

Chandler's concept of the Modern Business Enterprise was conceptualized at the end of the nineteenth century and shaped in the first part of the twentieth century as an institution to serve the needs of the economy and new types of entrepreneur, in order to provide the right incentives for what was considered salient technology. Within that context of the MBE business institutions like HR, organization design, marketing, etc. developed. By about 1930 most of the business institutions as we know these today were in place, be it that management control, Total Quality Management and IT governance developed in the second half of the twentieth century. Institutions reflect the technology, relative prices and the uncertainties or risks of the periode in which these institutions are created or develop.

In a world abundant with change—technological, cultural, political, and markets—insufficient attention has been paid to what has not changed. Management books focus on needed changes in leadership, organization, processes, strategies, etc., but it could be argued that the scope of change may not be properly defined, and that the traditional field of management limits its scope, not only in the internal organization of the firm, but within the part that is less visible, i.e., the organization of information and resource allocation as objects of change.

Within the overall process of change in society and the economy there are different rates of change. Technology, organizations, and institutions change at different rates (Langlois, 2001). Within each of these categories different rates of change exist as well, including the field of institutions.

Williamson distinguishes four levels of institutional change (Williamson, 2000). The first is informal institutions, such as religion, which are of a incalculable and spontaneous nature, where change has a frequency on a magnitude of millennia. The second level is labeled the institutional environment. Based partly on the informal institutions at the first level, the institutional level includes the formal institutions, constitutions, laws, property rights, contract law, corporate law, etc. This is the level of first-order economizing, i.e., getting the rules of the game right. Change or design instruments at this level involve politics and government, including the legislative, judicial, and supervisory functions of government. The institutional choices at this level are important to the growth of the economy and productivity, but change is usually difficult to achieve; requiring exogenous shock such as war, revolution, or economic and financial crisis to achieve institutional change (Williamson, 2000). Foresight and pressing acknowledged needs are necessary because investment opportunities tend to get lost, as they did in the last quarter of the nineteenth century in the U.S.. Central to this second level are property rights (resources) and their enforcement as the basis of a private enterprise system. The role of property rights was supported by the Catholic Church (*Rerum Novarum*, 1885); an example of institutional rule at the second level being embedded in the first level of Williamson's scheme. The frequency of change at this second level is estimated to occur once a century.

At the third level are the institutions of governance. Just as the market mechanism has transaction costs, including enforcement of contracts, governance structures have created a system of incentives. At the level at which firms are defined, this includes firm-specific corporate governance systems, how the firm is financed, and the architecture of the internal organization, the boundaries of the firm (whether vertically integrated or not). Williamson suggests that such firm-level governance should be aligned with transaction costs, an issue that reflects the economic or business model of the firm. Hence, this is the second level of economizing, i.e., finding the right forms of firm and corporate governance in accordance with the business model. Williamson estimates the frequency of change at this level to be between one and ten years. Over the last decade we have witnessed an increase in business model innovation, due to the emergence of information goods, lower costs of coordination, declining costs of information, etc.

The fourth level of change is the daily resource allocation, alignment of prices, quantities, production capabilities and incentives, designed to achieve the right neoclassical margin conditions.

The business institutions we are familiar with reflect the business or profit models of the Second Industrial Revolution, in which there was a loose relationship between economic models and organizational forms, and thus the governance system of the firm. Therefore, business institutions are best placed at the third level of change in Williamson's scheme of change and non-change. As we have seen in the case of organizational forms and resource allocation, business institutions tend to lag behind change in the economy. Whereas changes in technology and the economy exert pressure on adapting business institutions in order to achieve higher levels of efficiency, this pressure is resisted by forces in society.

Another complication is that formative institutions, such as corporate laws, are defined in different jurisdictions of nation-states. The European Community has no corporate law at the communal level, in the sense that the U.S. has federal corporate law. There is a certain convergence in corporate law, but German corporate law is based on Roman law in contrast with France, whereas the U.K. has a different legal system, based on the types of capitalism that exist within Europe and the U.S. (Whitley, 1999). Business institutions, more or less taking the role of international accounting standards, a U.S.-dominated system of MBA programs, and responding to the international capital market, are more or less of an international nature, but their application is adapted to local situations (Guillén, 1994).

Another issue in changing business institutions is ownership in terms of the authority and power to adapt business institutions. With respect to accounting rules, an International Accounting Standards Board (IASB) exists, unlike management control, HRM, etc. These business institutions have no ownership except for more or less leading authors. But no legislation exists to adapt them to changing technologies or ownership. Individual managers and firms formerly had the freedom not to follow the rules of business institutions, but forces exist to make managers comply with existing business institutions. Thus, "What is it about informal constraints that gives them such a pervasive influence upon the long-run character of economies?" (North, 1991, p. 111). North had no answer to that question, and a definitive answer was most likely not possible. While human nature, individually and collectively, has a need for both stability and exploration, for many habit, routine, and living an unexamined (professional) life is one way to deal with change.

One difference between the changes taking place at the turn of the last century and this one is that this time, the situation is of a mixed nature. The institutional transformation at the beginning of the second industrial revolution resulted in a system that in economic terms was absolutely dominant over former arrangements. Medieval forms of entrepreneurship, especially the partnership, still existed, but in economic terms were marginal to the corporation. All management theories and techniques are based on on the firm, as defined by Chandler's Modern Business Enterprise. Cooperatives and partnerships remained in existence but played a marginal role in management education and texts.

Modern institutions, such as those of the Second Industrial Revolution, were based on a number of dichotomies (U. Beck & Lau, 2005). Among these are hierarchical—market, work/non-work, nature/non-nature, compensated work/uncompensated work. It must be noted that these dichotomies, including the core family, were created to serve second- and third-level institutions' effectiveness (Weber et al., 1992). These dichotomies, like first-order institutions (e.g., religion) of Williamson's scheme, are implicit foundations for the institutions of the third level, such as corporate law, labor law, the MBE as an institution, and contract law, as well as the market as an economic institution. Society's ongoing conflict, especially in the western world, involves the dichotomies of modernism, either/or situations losing their sharpness and replaced by with/and choices. This is partly due to technology such as the Internet, email, the personal computer, digital data communication, and partly the result of emancipatory developments in society, in which once-marginal groups are no longer marginalized, and individuals and groups offer multiple identities.

This change implies weakening effectiveness of complexity-reducing institutions, in particular; that is, the institutions that regulate behavior. In addition, technology and scientific progress, as well a loss of tradition, create more options and choices (U. Beck, Giddens, & Lash, 1996, p. 290). As a consequence, conflict may arise between some of types of institution. The rationality of the neoclassical school of economics as a guiding institution like the Chicago school (also known as the Washington consensus) wants to shift rules and boundaries set by complexity-reducing institutions, both formal and informal, in order to increase the efficiency of markets, resulting in the liberalization of financial institutions and turning savings and loans from economic institutions into enterprises. Some argue that the crisis of 2008 demonstrated that this liberalization went too far, and that savings and loans should have remained or been restored to the role of institution (T. Beck, 2011).

It can be argued that where consistency or congruence exists between basic social dichotomies, the various types of institution and technology, and the nature and degree of uncertainty in relation to prices and economic growth are supported and promoted. A collateral effect of this is that the institutions underlying economic growth may be taken for granted, resulting in an unconscious echo of the Modern Management Tradition. The paradox of twentieth-century modernism is that where it was introduced (through the institutions mentioned, such as the value free rationalism of neoclassical theory and science), sich modernism has become a tradition itself, especially within the realm of business. Such routines, given consistency and congruence, have an economic value in economizing the decision making process. But because consistency and congruence do not make for a stable phenomenon, a routine of regulated as opposed to rational decision making can limit the achievement of maximum technical efficiency (March, 1994). The essence of entrepreneurship is thus abduction, in deciding to pursue a course of action beyond what has been proven to work, breaking with conventional assumptions about what works and what does not.

7.2. Institutional conflicts

Institutions not only create incentives in the economy, they create vested interests for corporate bodies, employer associations, industry groups, labor unions, professionals such as chartered accountants, and so on. The weakening consistency and congruence between basic dichotomies and the institutions at Williamson's four levels affect the interests of various groups and are a source of conflict in society. Another type of conflict is created by efforts to distinguish between groups based on their economic activity (industrial, large-scale enterprises versus crafts and trades), gender, and other identity groups. For various reasons, the distinction between mainstream and marginal is no longer accepted nor economically feasible. A third type of conflict is involves economic activities, firm strategies, managerial decisions, and reward systems not assumed by older institutions nor expected in modern society. This creates what Anthony Giddens labels 'manufactured risks' in society. These are risks created by our own doing, not acts of God, but in a society lacking ontological confidence, there is no political tolerance for manufactured risk (U. Beck, 1999; Giddens, 1991).

A fourth type of conflict is caused by the divergence of basic conditions, new options and the restrictions implied by modernist institutions, between rationality and convention. On one hand there is a need to deploy managerial and organizational strategies that are needed to maximize return on investment in the form of intangible assets. On the other hand, there are limitations, especially in terms of the expectations and acceptance of roles and positions implied by traditional business institutions, especially unit organization in combination with traditional management accounting systems.

In response to growing divergence, manufactured risks, opportunities and the need to adapt to changes to the nature of assets, one approach is so-called fundamentalism found in nation-state modernity (U. Beck & Lau, 2005); the conflicts and risks tend to be solved within existing institutions at the second and third levels of Williamson's scheme of institutional change. We see this in corporate governance systems, codes of conduct, demands for transparency, regulation, regulatory bodies, risk management, in-control statements etc. A second approach are what Beck and Lau have labeled as the development of complex reflexive solutions to do justice to the new uncertainties and ambiguities that permeate macro and micro spheres alike, and may transform existing institutions. This second approach assumes that through academic processes of research and criticism an awareness develops with respect to the underlying assumptions and basic conditions of various institutions in society, fostering a willingness to discuss changes in institutions—political, professional, and academic. This approach is called reflexive sociology or modernization. There is some irony, however, when it comes to plays on words. Reflexive sociology, illustrating Bourdieu's systematic thinking about forgotten assumptions, assumes *reflection* in society at various levels, which is operational to academic and philosophical (Bourdieu & Wacquant, 1992). Due to manufactured risks, the immediate feedback provided by media and an information society, mediation of politics, and increased complexity of both surprises and opportunity, we have moved from a *reflective* society to a *reflexive* society. Individuals and groups at various levels of society have learned to survive not by being reflective, but reflexive.

An example of an ambiguous response to the problems of society may be seen in the field of economics. For those searching for institutional foundations of the economy, the role of institutions. (North, Greif, Allen, Polanyi, Rajan, Zingales), one school is reflective while another relates to behavioral economics (leaving the paradigms of neoclassical economy intact) and those promoting regulations like corporate governance systems (on the basis of the old institutions), consists of reflexes (Strikwerda, 2012).

The question to be asked is what in terms of the foregoing alternative responses are responses to adapting or transforming business institutions? Two types of response can be distinguished: the first is a reflexive response in terms of refinement, trying to adapt and improve existing models and concepts to solve the conflicts between what traditional business institutions suggest and what is necessary from an entrepreneurial viewpoint. Examples of the first type of respons are risk management, at least as proposed by auditors (a more mathematical, fundamental approach to risk management exists), to measure and value human capital as an isolated phenomenon or culture programs.

A second, less well-known response occurs with respect to deeper economic theories and insights going back to Stiglitz, Arrow, and Herbert Simon, including economic roles of information beyond management accounting and decision theory, acknowledging the changing nature of assets and business models. In this second approach, the organization of information and factoring of decision making have replaced the primary role of structures in which the budget-driven method of strategy execution is replaced by one based on cause-and-effect. This second method also operates within the context of formative institutions such as corporate law, but transcends accounting rules using richer information by organizing a multidimensional information space. This approach acknowledges the role of uncodifiable personal knowledge through the explicit planning of human resources and investments in human capital, but without making an issue of the the ownership issue nor answering Michael Jensen's observation that personal uncodifiable knowledge implies a shift from incomplete labor contracts to alienable supplier contracts. It is within this second method that the BSC, strategy map, and Kaplan and Norton's management system must be understood. Kaplan and Norton's management system is not the only one belonging to the second approach, but also the shift from accounting profits to economic profit by the field of corporate finance. These two changes are linked, as will become clear.

Due to the difficulty of enacting institutional changes, it is understandable that many seek a response to technological change, to changes in markets and industries, in the nature of assets, and in general the transformations implied by the third information revolution, within the existing institutional context maintaining or even reinforcing vested interests. That changes are going on is acknowledged; firms and markets and even laws must be responsive to such changes, but the representatives of institutions of the second industrial revolutions, be they employer representatives, employee representatives, representatives of professions, representatives of business institutions, including many academics with their vested interests, have difficulty in acknowledging that in a number of cases, the fundamentals that various institutions and rules systems are based on are changing, so acknowledging this will affect their own roles, positions, and interests.

The question is, in what ways do the changes implied by the third industrial and information revolution affect Chandler's MBE? "It has become exceedingly clear that the late twentieth (and now early twenty-first) centuries are witnessing a revolution at least as important as, but quite different from, the one Chandler described" (Langlois, 2001). Langlois' 'revolution' is about deverticalization, modularization and standardization, doing away with Chandler's vertically integrated firm. Langlois's changes are certainly important, but more fundamental changes also play a role. To understand this, we discuss each of the seven characteristics of the MBE in terms of constancy and change.

7.3. The changing Modern Business Enterprise

The first characteristic of the MBE is how it is shaped by corporate law. There is no reason to assume that incorporating the firm in a legal organization, such as the corporation, will change. As is more or less implied in the ESOPs, increasingly human capital defines the capital base of the firm and thus the question of whether the firm as a nexus of contracts should be not only a contract between shareholders, but should include knowledge workers. This suggests that knowledge workers be allowed to speak and vote at general meetings, which in turn implies that such knowledge workers receive compensation in the form of dividends and that the increased value of their knowledge be put into the firm, giving them a right to residual claims. That is, the knowledge worker as a participant in the firm, being a nexus of contracts, would not only be an employee but an investor as well, albeit an investor who runs less risk than a traditional shareholder. Examples of this exist, especially in the case of startups, but the existing definitions of corporate governance emphasize the separation of capital and labor, defining knowledge workers as labor, not capital. Only in the case of takeovers, is human capital valued via retention bonuses. For the time being, parties will likely solve the issue of human capital from the framework of existing corporate and labor laws.

The second characteristic of the MBE is that its ownership is defined by ownership of its physical assets, and that subsequently the legal boundaries of the firm coincide with those of its physical assets. Increasingly, intangible assets are material to value created by the firm and of the firm. Intangible assets come in a variety of forms. These may be patents, but the difference occurs in those intangible assets relating to human, social, information, organizational, and relationship capital. According to accounting rules IAASB 38, such assets cannot be capitalized on the firm balance sheet, nor are they alienable except in the case of mergers, divestment, or acquisition of firms as a whole. The ownership of intangible assets such as information capital and organization capital is not so much an issue, as no competing ownership interests to that of the corporation exist, except in the case of lift-outs of complete teams, as seen in law firms. The firm can become more vulnerable in terms of ownership of human capital; as personal knowledge is owned by the individual. Thus, the ownership of the firm no longer coincides with ownership of its assets.

As Arrow has explained, in an increasing number of cases such as those relating to professional service firms, the capital of the firm exists predominantly in the form of knowledge, partly codified as the personal knowledge of knowledge workers or professionals. This implies that knowledge workers constitute part of the capital base of the firm, along with that codified within the organization (procedures, routines), and in physical capital (programmed machines). This is seen in the case of retention bonuses in takeovers, as well the shift from accounting profits to economic profits. As a consequence of the capital base of the firm comprising a material part of human capital, Rajan and Zingales suggest that due to the changing nature of the firm, the focus of corporate governance systems must shift from alleviating agency problems to providing incentives for investments in human capital

From the foregoing follows the third defining characteristic of the MBE, the separation of labor and capital. In a number of cases this no longer applies in an absolute sense; but to an increasing degree, labor is one of the forms of capital used by the firm. This has implications for labor contracts, according to Jensen. Where employees bring uncodified personal knowledge material to the firm, the labor contract should yield to a delivery contract. The exploitation of uncodifiable personal knowledge also affects the use of decision rights. The MBE—its control, governance, and management—is based on alienable decision rights [with respect to the use of physical assets]. The right of alienability of assets is a reserved power of statutory management of a corporation to ensure the rights of residual claimants on the firm.

There are two developments to be discerned. Physical assets imply alienability of individual assets. With respect to human capital, the firm does not possess any alienability. The alienability of other forms of intangible asset (information, organization, and relationship capital) cannot be defined on a free -standing basis. The residual claim on the company by shareholders is based on the ability of physical assets to be liquidated seperately. As a consequence, shareholder value and going concern of the firm no longer coincide. Also, human capital is a type of asset that lies with the individual, not the corporation, which implies that human capital impairs the control of management over the firm. In terms of decision rights, some professional service firms compensate for this by managing by consensus, which is something not based in corporate law but on a combination of agreed upon values and shared information.

The fourth defining characteristic of the MBE is that management is granted the right to issue instructions to employees on the basis of management being the representative of the corporation as a legal persona and owner of physical assets that employees need to do their jobs, and of labor contracts being incomplete.

As we have seen, ownership of assets shifts in part toward creative knowledge workers, who have become less dependent on capital in the form of assets provided by the corporation (with respect to laptops and mobile phones, some firms pursue a "carry your own device" policy). Labor contracts tend to be more complete, due to a shift from lifetime employment to temporary workers and project-based contract professionals. This seems to contradict the phenomenon that knowledge has a complementary nature, making creative knowledge workers dependent on each other, such as in the videogame industry. This may be organized through both hierarchical coordination and self-coordination, depending on the efficiency of the markets, but is predominantly self-coordinated due to the interactive (as opposed to transactive) nature of combining complementary tacit knowledge. The development described will cause a shift (relative to factors like type of knowledge being exploited, technology, etc.) from a firm based on instruction to one of a more contractual or facilitating nature, as suggested by Kanter's (2009) use of such elements as guiding system, tools,and platform (Kanter, 2009).

For reasons of reputation, professional workers bringing their own personal knowledge have an interest in seeing that knowledge put to best use in order to create value. If their knowledge is applied to new problems of innovation and such use creates new knowledge, the value may partially accrue to the firm as well to the individual knowledge worker.

The fifth characteristic of the MBE, a double-loop control, made for tight command-and-control in order to compensate for a lack of any market mechanism that could enforce efficiency. Due to the higher level of education for managers and workers, lower cost of information and communication, more specified processes and better availability of performance parameters, it now is possible to have adequate controls, in order to be "in control," as defined in the resource-based view of the firm) (Pfeffer & Salancik, 2003) and by the dynamics capabilities view of the firm (Teece, 2007). Regarding Simon’s "loose programming" needed for adaptive capability of the firm to survive in a dynamic complex market, it is understood that in today’s complex markets. Overly tight control can destroy the adaptive capability of the firm and thus harm its adaptive efficiency (Manzi, 2012; Simons, 2005).

The sixth characteristic of the MBE, value creation by the firm, once lay within the legal, economic, and economic boundaries of the firm. Due to outsourcing complementary products, the emergence of network of markets, alliances etc. value creation has shifted from staying within the firm to belonging to the market. The firm no longer creates value for itself, but through a network of suppliers, customers, infrastructure, educational and research institutions (Porter & Kramer, 2011). This implies a shift from an arm's length, closed contract to incomplete contracts where the firm functions less independently. This shift also implies a shift in the power system of the internal organization, especially for boundary personnel. Those working at the interface of alliance partners or suppliers, co-creating processes, may develop specific personal knowledge that gives them increased bargaining power, such as the case of investment bankers (Wilhelm & Downing, 2001). This shift also implies that relationship capital becomes more material in the (intangible) capital base of the firm.

The seventh characteristic of the MBE is that its administration can be based on the use of general knowledge only (Jensen, 1998, p. 103). Due to the deployment of TQM techniques, improved process descriptions, increased performance management of subprocesses, and the increasing role of personal uncodifiable or tacit knowledge, specific knowledge is now more material. In the case of hybrid organizations, the franchise uses the ownership of local assets as a parameter for organization design and control. The increasing use of specific knowledge renders obsolete or less than efficient such administrative techniques as financial performance management, e.g., the ROI tree. In the MBE, the long term was managed separately from the short term, the former in R&D departments and staff departments for strategy, the latter in operations. The assumption was that knowledge was not created in operations, only in R&D and some staff departments, although by the 1950s, the learning curve effect had already proved this was not true, especially when tacit knowledge was developed in operations, driving market leadership to low-cost strategies.

In today's business models, knowledge is created in virtually all parts of the firm. In the information economy, with such characteristics as professional services, exploitation of customer feedback, customer clicks and POS data (De Kuijper, 2009), and co-creation with customers (C. K. Prahalad & Krishnan, 2008), knowledge creation is distributed across the organization.

Whereas in the Second Industrial Revolution the long term was managed by the R&D department, using corporate staff for strategy and business development, and the short term took plce in operations, increasingly dependent per specific firm, the long and short term must be managed by the same department, operations. Traditional (centralized) strategic planning initially launched by Ansoff has become a problem for dynamically complex markets . The execution of strategy tends to shift toward trial-and-error, which requires overall strategic guidelines in order to have coherence and leverage assets (Manzi, 2012). This implies that in the budget of operations, both investments and expenditures for the long and short term must be budgeted (in Kaplan and Norton's management system, this is addressed by the concept of STRATEX).

We can thus conclude that 1) the nature of the firm is changing; 2) the institutional foundations of the firm are not changing; 3) due to a growing discrepancy between the changing nature of the firm and the unchanging institutional environment of the firm, the institutional basis of instruments for administration, management and organization are weakening; and 4) both control and coordination of the modern firm require new types of administrative technique.

8. Kaplan and Norton's Concept of the Strategy Map and BSC

8.1. Introduction

Our objective is to read and understand the BSC in terms of Kaplan and Norton's management system compared with the matrix of institutional stasis, changes in the nature of the firm, and political and economic interests. What emerges from such a reading is an entrepreneurship requiring the ingenuity and innovation to do what is necessary, but without the institutional support seen in the first half of the twentieth century. In the present political constellation, both in the U.S. and in Europe, firms have little opportunity to change their institutional contexts. Given the force of changes in the economy, it is expected there will be changes in the strengths of institutions. The declining cost of information will exert a pressure on the existing institutions, especially complexity-reduction and business institutions that are the carrier of routines, in order to achieve higher levels of efficiency, since such declining costs will increase transparency and create faster feedback loops, so that information takes over a number of the previous functions of institutions. As we will see, Kaplan and Norton's management system, including the BSC and the Strategy Map, represents such a bottom-up movement.

8.2. A description of Kaplan and Norton's management system

The concept of the BSC, strategy map, and system of strategy execution has been presented by Kaplan and Norton in a total of five books. Aside from articles and HBS cases, these include *The Balanced Scorecard* (1996), *The Strategy Focused Organization* (2001), *The Strategy Map* (2004), *Alignment* (2006), and *Strategy Execution* (2008). For their overall concept, Kaplan and Norton use the comprehensive expression "management system": "By *management system,* we're referring to the integrated set of processes and tools that a company uses to develop its strategy, translate it into operational actions, and monitor and improve the effectiveness of both" (Kaplan & Norton, 2008).

Kaplan and Norton's presentation of this system is not without its problems. The authors did not start out with a comprehensive management system, but first presented the Balanced Scorecard. Some confusion exists as to what precisely the BSC is. Is it a measurement system, a control system, or a tool to communicate the strategy of the firm? The BSC is not a measurement system—"The real benefit comes from making the scorecard the cornerstone of the way you run the business". According to one CEO, "The real benefit comes from making the scorecard the cornerstone of the way you run the business. It should be the core of the management system, not the measurement system" (Kaplan & Norton, 1993). But in a 1992 HBR article, Kaplan and Norton define the BSC as a measurement system (Kaplan & Norton, 1992).

While there may be confusion over what the BSC is, in essence, the BSC acknowledges the role of intangible assets in in the process of creating value and thus the need to include intangible assets in capital allocation and investment decisions.

The usual representation of the BSC is that the performance of the firm is measured by four dimensions simultaneously—financial perspective, customer perspective, internal process perspective, and learning and growth perspective. The concept of the BSC is depicted in Kaplan and Norton (1996): investments in learning and growth lead to process capabilities and process performance, which in turn lead to performance with the customer, resulting in financial performance. The BSC assumes a timeline for investments, i.e., with learning and growth, process capabilities and performance in one period will produce outcomes in the next period. Given this time-phased causal dependency, the BSC may be read as a system of backward planning—in order to achieve a specific financial performance in period *n*, investments will be needed in period *n-3* in learning and growth, for processes in period *n-2*, and the customer value proposition *n-1*, in order to achieve the financial performance in period *n* (Figure 5). The time dimension is explicit in the strategy map shown in Figure 2-7 from *Strategy Maps*.

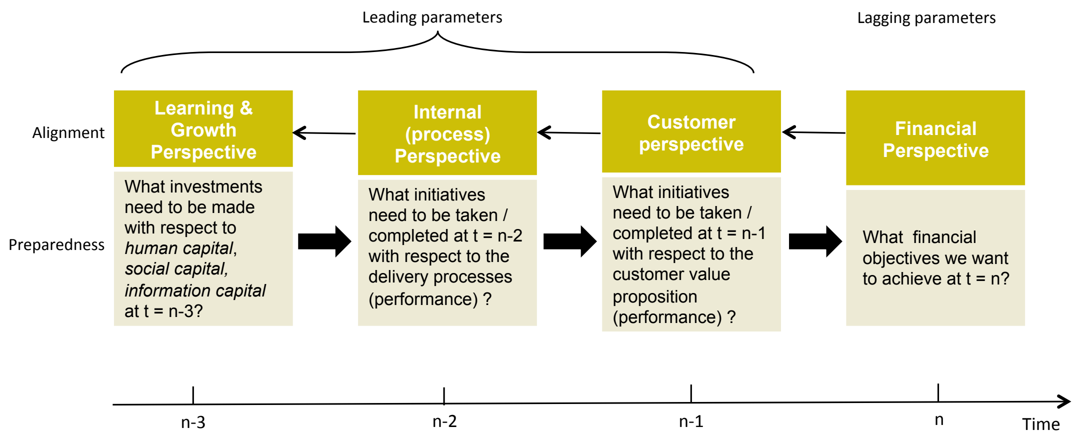

Figure 5. A more correct representation of Kaplan and Norton's BSC.

The underlying principle of the BSC, a cause-and-effect map, is explicitly mentioned in the 1996 book and elaborated on in *The Strategy Focused Organization* (2001) and *Strategy Maps* (2004). According to Kaplan and Norton, this strategy map shows cause-and-effect relationships among the objectives in the four BSC perspectives (Kaplan & Norton, 2004, pp. xii-xiii). The strategy map provides a method for leveraging intangible assets, since creating value with intangible assets differs from creating value with tangible ones: value creation is indirect, that is indirect cause-and effect relations; value is contextual, i.e., context dependent; value is potential, investments in intangible assets often have unforeseen side effects; assets are bundled, i.e., intangible assets need to be organized complementary with other assets in order to produce value (Kaplan & Norton, 2001, pp. 66-67; 2004, pp. 29-30).

Is a strategy map just a description of the causal relations between the four dimensions of the BSC? Even the term "strategy map" is questionable. What Kaplan and Norton call a strategy map resembles Osterwalder's business model canvas (Osterwalder, 2004). Like the business model canvas, the strategy map is a practical expression of a fundamental need in the economy, based on the shift toward intangible assets, to move away from budget-driven strategy execution and adopt cause-and-effect resource allocation and strategy execution. Related to this explicit cause-and-effect is the need to decentralize decision making, so that as many members of the organization can decide for themselves which initiatives and alternative decisions will make the greatest contribution to the performance of the firm.

We argue that Kaplan and Norton's management system is basically the successor to Anthony's (and Merchant's) management control system (MCS). Anthony's MCS devolved into a budget process and was never adapted or revised to fit the role of intangible assets, not even for project-based firms or those operating shared service centers. The original intent was to translate strategy into task controls, but the idea faded so that Kaplan and Norton don't even refer to Anthony's MCS as a practice for strategy execution, nor do.textbook on strategic management make reference to it. The only exception is *Strategic Planning Systems* (Lorange & Vancil, 1977), which cites a figure (p. 24) entitled "From a Management Control System … to a Strategic Management System." Management control systems evolved into short term financial performance-only frameworks in the 1980s . The Strategic Management System was designed to be a method for management with a longer term strategy at the core, and contained balanced financial and non-financial leading and lagging parameters, including a focus on the customer, in response to the increasing power of consumers. Kaplan and Norton's management system was basically an alternative to the management control system defined by Anthony and by Merchant. In his paper "Conceptual Foundations," Kaplan refers to Anthony's 1965 definition of management control, and observes that management planning and control systems encompass both financial and nonfinancial measurement. In Kaplan's view, American companies in the 90s repaired the error by focusing on financial performance parameters and including non-financial (leading) parameters, but European firms did not.

This paper asks whether and how the concepts of Kaplan and Norton provide an answer to the issues caused by the changing nature of the firm (the MBE), of basic economic conditions and the weakening status of institutions. To answer this, we must describe the concepts of the BSC, strategy map, and Kaplan and Norton's management system in terms of existing business institutions.

The first difference between conventional management methods and concepts is that, contrary to existing (business) institutions, the K&N management system explicitly assumes that intangible assets are salient in value creation, whereas in formative and business institutions, only tangible assets are assumed. However, Kaplan and Norton do not raise the ownership issue of intangible assets in terms of uncodified personal knowledge, unlike Jensen, Rajan & Zingales, Gates (Gates, 1998), and Burton-Jones (Burton-Jones, 1999). Taking the intangible assets specified by Kaplan and Norton as a combination of human capital, information capital, and organization capital is consistent with Arrow's observation that the capital base of the firm consists predominantly of these types of intangible capital, which are difficult to alieniate by themselves. Arrow observed it would be difficult to change formative institutions such as corporate law with respect to ownership of the firm (Arrow, 1996). In this sense, Kaplan and Norton concur with Arrow's observation.

The second dimension of the K&N management system is the backward, time-phased planning of leading non-financial parameters for investments, especially intangible assets, and setting time-phased (non-financial) performance parameters for processes. This second dimension in itself is not so much a new element; it is commonly found in operations management and the field of industrial engineering, but is a necessary correction of the dominance of the one-dimensional method of financial performance and measurement management systems used by capital markets in 1980s , which are lagging on financial parameters. This correction of planning methods and thus the system of performance management of investments and operations of the firm is consistent with a change in the economy from accounting profits to economic profits, in which the value of the firm is based on future cashflow. As a consequence, investors shifted their interest from annual reports to information about initiatives that executives organized in order to provide investors assurance that promised future profits would be delivered (Strikwerda, 2013). Thus, the type of planning implied by Kaplan and Norton's management system is consistent with the information needs of investors by firms with salient intangible assets.

The third institutional dimension touches upon the core administrative process of the firm, resource allocation. Bower (2005) acknowledged that he had no alternative to his resource allocation process, which was incapable of dealing with intangible assets. The resource allocation process elaborated in *The Execution Premium* (Kaplan & Norton, 2008) turns out to be the sought after alternative. Kaplan and Norton both critizise and cite criticism on existing budget processes in firms, without referring to Bower. Like Anthony's MCS, Bower's bottom-up RAP also devolved into accounting-based budgeting, and lost its original potential as an instrument for strategy execution. Because Kaplan and Norton present their management system "as is," their presentation may need to be understood from within the editorial tradition of U.S. management books.

Another question is whether Kaplan and Norton's management system solves the problem of budget gaming. Kaplan and Norton are not explicit on this score, but it can be argued that their method of initiatives, given the objectives of a strategic theme and the cause-and-effect diagram as a context within which departments are asked to propose initiatives to achieve strategic objectives, would reduce budget gaming but most not completely eliminate it. Kaplan and Norton's management system explicit cites a method for deciding whether proposed inititatives make a contribution or not, and whether necessary initiatives are missing, which may be an attempt to curb budget gaming. The role of systemic context, elaborated by Bower as a means of guiding bottom-up initiatives and ingcounter the psychological mechanisms that prevent new strategies from becoming initiatives, is implied in Kaplan and Norton's management system by the concepts of organization and information capital. For a detailed comment on this, see § 9. This lack of detail regarding the systemic management system is one of the weaker parts of Kaplan and Norton's management system.

A fourth institutional dimension is that the resource allocation process implied by Kaplan and Norton's system no longer assumes a black box input/output production but rather investments, performance targets, and resource allocation based on cause-and-effect relations. The Kaplan and Norton management system therefore embodies the shift from budget-driven strategy execution, based on the concept of the firm in neoclassical economic theory, to one of cause-and-effect, based on resource allocation. This in itself is based on the TQM movement that dates back to the '80s and the declining costs of information, but Kaplan and Norton were the first to feature this in a comprehensive operational management system consistent with the the function of management control as originally designed.

A fifth institutional dimension relates to organizational form, to which Kaplan and Norton seem somewhat ambiguous, according to their HBR article, "How to Implement a New Strategy Without Disrupting Your Organization." On one hand they place the strategy map within a division or business unit, maintaining the traditional M-form, but in the case of their case DuPont, the execution of strategic themes is explicit cross units and thus the M-form is defied. A fundamental concept of Kaplan and Norton's management system is the *strategic theme*. The planning of firm activities, including budgeting and resource allocation exists in two categories, operations and strategic themes. Overall strategy or strategic objectives are to be translated into a limited number of strategic themes. A strategic theme is organized within a division or business unit, or across multiple divisions or business units, as an accountable (planning) entity in the accounting system, with a time-phased, quantified financial or non-financial target, cause-and-effect diagram, and a business case including required resources, including people, to be made available from the divisions of business unit on the basis of time-phased planning or through sub-projects or initiatives. The latter are planned and budgeted by division, with respective to business units through a new expense category, STRATEX. "As mentioned earlier, we believe that a third category, strategic expenses (STRATEX) should be created to segregate the *resources* required to implement initiatives that deliver long-term benefits. …. STRATEX is designed to enhance the intangible assets that provide organizational capabilities, such as training and customer databases" (Kaplan & Norton, 2008, pp. 115-116).

By introducing STRATEX Kaplan and Norton's management system provides an answer to an issue that firms must manage over the long term, and in the short term by operations and other departments, no longer by separate departments.

The Kaplan and Norton management system is based on a change to one of the assumptions underlying traditional organization forms, that of the cost of information and communication. Since the cost of information and communication are declining, the primary parameter in organization design is no longer structure but the organization of information (Simon, 1945/1997). As we shall see, there is more to the organization of information than the introduction of the concept of the strategic themes, but this concept provides a fundamental solution to the restrictions of the Weberian hierarchy. The concept of the strategy map assumes continuity of traditional organization forms, especially the M-form, but by making processes the first elements of planning (each process in the strategy map is also a budgetary unit), the traditional organization form is reduced to a resource configuration in which the deployment of resources is defined by processes, not solely by the resource manager. This is consistent with the process reengineering movement or process management of the 1990s. The improvements implied by Kaplan and Norton's management system defines processes as accountable entities, as planning entities in the resource allocation process and subsequently in the monitoring process. Strategic themes and processes are necessarily defined across divisons, staff departments, and shared service centers. In doing so, the Kaplan and Norton management system solves the problem of Bower's bottom-up RAP of exploiting synergies across business units, including integration projects, account management, and cross-unit strategic themes. The introduction of strategic themes as accountable or reportable planning dimensions through STRATEX, linked with the budgets of divisions, is consistent with the movement toward multidimensional organizations, in which multidimensionality is not so much about structure, as in matrix organizations, as reportable dimensions and thus the organization of information.

This brings us to the sixth change for the business institutions in Kaplan and Norton's management system. Traditional business institutions in terms of the organization of information are organized within the structure of the internal organization, each division keeping its own books. Kaplan and Norton's management system requires at least a twodimensional accounting system, especially in the case of cross unit processes and strategic themes, which require information to be disembedded from the internal structure, in order to be accessible by all, in order to propose initiatives that contribute to achieving firm strategy. Kaplan and Norton's management system offers a practical application of what Herbert Simon predicted: that the first parameter of organization design is no longer structure but the organization of information. As we can see in multidimensional organizations like IBM, where information through the deployment of shared service centers for finance and IT is disembedded from the internal structure. Reporting, management control, and performance management are reported in multiple dimensions simultaneously (Strikwerda, 2008). This multidimensionality of information is explicitly mentioned in *The Execution Premium* (2008), where it is stated that in the case of Borealis, pro forma financial profitability is estimated by product, customer, channel, and region (Kaplan & Norton, 2008, p. 191).

The aforementioned changes implied by Kaplan and Norton's management system with respect to conventional business institutions, especially management control and organization forms, are defined and operated within the existing formative institutions of society, but transcend the complexity-reducing institutions of traditional organization forms. Kaplan and Norton do not discuss the limitations of existing accounting rules, but make use of new technological possibilities for organizing a richer information space compared with one based on managing accounting information. This provides for multidimensional, non-financial leading parameters (such as management information), while producing the information required by traditional accounting rules (i.e., compliance information).

We can conclude that Kaplan and Norton's management system implies there is an institutional change at the level of business institutions within the context of formative institutions, but which transcends complexity-reducing institutions within the framework of guiding institutions.

Two questions must be asked. The first is whether the changes at the level of business institutions suggested by Kaplan and Norton's management system are complete, in view of the predominance of intangible assets. The second is whether the changes at the level of business institutions are sufficient, or whether the changing nature of the firm, the role of intangible assets, and the changing nature of its capital base require changes to formative institutions in order to insure economic growth. A third question involves the relationship between the context of the firm and the way it is run. Is running a firm on the basis of Kaplan and Norton's management system accepted and acknowledged by investors and regulators?

Might it be that such players impose restrictions, hindering the use of the system, or are managers reluctant to move to Kaplan and Norton's more comprehensive management system for fear of lack of acceptance? Phrased more positively, would the context of the firm, investors, and regulators make use of a system as formulated by Kaplan and Norton?

Unlike Europe, in the U.S. the BSC and Kaplan and Norton's management system are backed by an implicit political agenda, i.e., the competitiveness of the U.S. economy, as can be concluded from the article written by Porter & Wayland (Kaplan, 2010; Porter & Wayland, 1992).

9. Is the Kaplan and Norton management system a complete system?

The question of K&N's management system being a complete system assumes a reference frame or model against which the completeness of any (management control) system may be tested. Such an uncontested reference does not exist. Lack of an uncontested reference system does not exclude a number of aspects against which Kaplan and Norton's management system can or should be tested, without any claim that such a list of aspects would be complete. In view of recent developments and insights into business administration, Kaplan and Norton's management system may be discussed against:

1. Organization of information;
2. Organization capital, especially the role of the systemic context;
3. The factoring of decision making;
4. New insights into strategy conceptualization;

9.1. Organization of information

Kaplan and Norton describe information capital in four categories of IT application: transformational applications, analytic applications, technology infrastructure, and transaction processing applications. They ignore Venkatraman's Business IT alignment paradigm, since information capital must not only be aligned, it must be both prepared and capable of supporting new business models and strategies.

The K&N approach to information capital is a proxy. Information needs technology, but it must be processed by both individuals and organizations. Technology requires only recorded data; data requires interpretation in order to be information. Apart from this distinction, two important developments have yet to be incorporated in the K&N approach to information capital.

The first is that, in the modern firm, information acts as a resource, a production function. Firms use POS data such as Internet clicks and search strings to improve the customer value proposition and create new products and services, especially information goods. A core element of the strategy map, like Osterwalder's business model canvas, the customer value proposition, is not a constant or a given, but depends on the nature of a product for information goods. The customer value proposition is continuously revised, often through interactions with the consumer. This requires specific processes and capabilities within the organization, which should, competitively speaking, create superior information (Strikwerda, 2011). From the context of the strategy map, it is suggested that information capital be aligned with strategy (Kaplan & Norton, p. 249). But the highest level of information capital category is the transformational application, systems and networks that change the prevailing business model of the enterprise. One issue with information is that it redefines markets, competition, customers, industries, etc. This implies that information capital planning needs to go beyond the present strategy of the firm, it must facilitate new strategies and new business models.

The second dimension of organization capital involves types of information. One of the problems with the phenomenon of information is that no adequate theory exists. There are a number of theories about information, including multiple definitions, i.e., the engineering definition (Shannon & Weaver, 1963) versus the semantic definition (Birchler & Bütler, 2007). Various types of information also exist, e.g., discursive information versus disinformation (Lash, 2002). Perhaps the richest theory of information is found in cybernetics (Beniger, 1986; Garfinkel, 2008). In this theory, the following types are defined:

1. Goal information (usually codified in the mission of the firm);
2. Motivation or axiological information (usually codified in the firm's hierarchy of values "and/or" the code of conduct or business principles);
3. External information;
    a. Material information (objective facts about changes to the external situation);
    b. Eidetic information. The interpretation (sense making) of material information in terms of actions and choices made by the firm in order to survive and to

accomplish its mission. Eidetic information should be codified in the strategy of the firm.

4. Instruction or effect information. This is a description of the economic or business model of the firm, i.e., how profit is made in terms of cause-and-effect or processes. This type of information is usually implicitly codified in a number of ways, including tacit knowledge, culture, processes, structures, etc. Increasingly, instruction or effect information is expressed in an explicit business model (Kaplan & Norton 2004; Osterwalder 2004; Slywotzky & Morrison 1997). From the foregoing it follows that effect information includes the competitive and institutional environment described as the modern industrial organization).
5. Pragmatic information, also known as choice or management information.

These types of information are assumed to belong to the information-based organization. In the information-based organization, decentralization means that, as much as possible, members of the organization can decide which initiatives will contribute most to the overall performance of the firm (including that of other departments). Kaplan and Norton (2004) describe the BSC as one step in the overall mission, values, and vision strategy to create value for customers and shareholders. This could be more precise since vision is basically the process of scanning the environment for change and development, and interpreting them in terms of any opportunities, threats, consequences, or choices to be made on behalf of the firm (i.e., eidetic information). In the firm's vision, eidetic information and ambition should be kept separate, because the psychology of generating eidetic information is riddled with mechanisms which could easily impair the quality of the information and thus that of the strategy. The effect is about cause-and-effect information, an important element in the strategy map. Kaplan and Norton's pyramid in which firm mission is translated into desired outcomes may be seen in Figure 6.

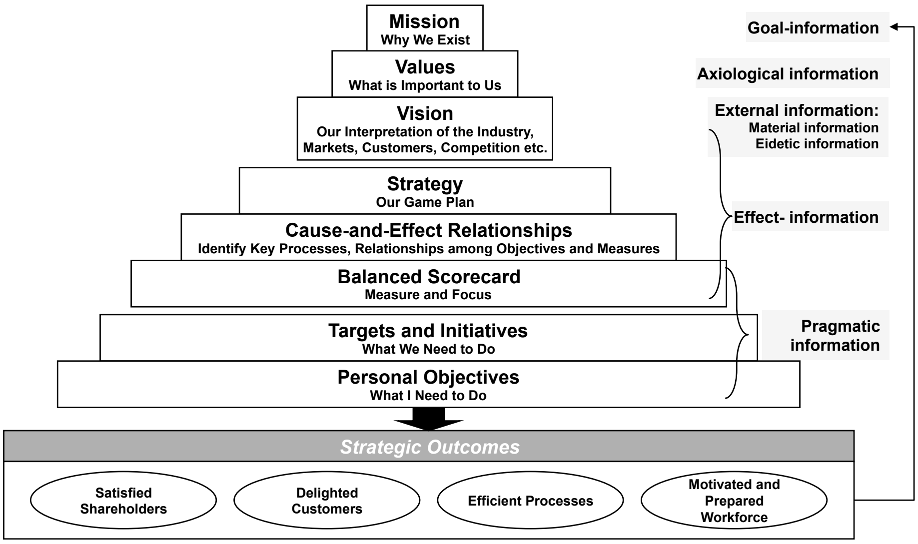

Figure 6. The relationship between the layers in K&N's pyramid translating mission into desired outcomes. In this interpretation, vision is understood to be the process of interpreting changes in the environment into consequences for the firm in terms what to undertake as input for strategic choices. This may be discerned from the notion of vision as ambition. Based on Figure 3-3 (Kaplan & Norton, 2004).

Strategy assumes a cause-and-effect model and therefore, strategy is not only about objectives nor choices to be made, as much as assumptions about what will work and not work, based on experience, example, or abductive (entrepreneurial) thinking.

One discrepancy between Kaplan and Norton's management system and the information-based organization is the concept of the Office of Strategy Management. This function sets the architecture of strategic themes and their cause-and-effect relationships within which departments propose initiatives. Whether bottom-up initiatives should be structured using strategic themes, or strategic themes are the result of bottom-up or middle-out processes, must be determined. But when Simons defines "Management control systems are the formal, information-based routines and procedures managers use to maintain or alter patterns in organization activities" (Simons, 2000, p. 4), the assumed information is broad, cybernetic-based information. That is, the information capital of a firm is a more comprehensive concept than the four categories of IT applications suggested by Kaplan and Norton.

9.2. Organization capital

Kaplan and Norton (2004:277) suggest that organization capital consists of four components:

- Culture defined as the awareness and the internalization of the mission, vision, and core values needed to execute a strategy;
- Leadership defined as the availability of qualified leaders to take the right initiatives;
- Alignment of individual, team, and departmental goals and incentives linked to attainment of strategic objectives;
- Teamwork: knowledge with strategic potential shared throughout the organization.

The definition of culture suggested by Kaplan and Norton is different from the definition provided by Schein, the godfather of organization culture (E. Schein, 1985; E. H. Schein, 1996). This in itself is not a problem because Schein's concept of organizational culture has lost relevance and validity in the context of the twenty-first century. The expression "internalization" refers to Herbert Simon's identification of the working prerequisites for an internal organization. To internalize vision seems logical, but vision in an information-based organization, especially in a dynamic environment, is a continuous process of observation and interpretation. An internalized vision concerns the problem of dominant logic in an organization, that is, an individual and collective psychological state caused by overinternalization which impairs the capability of individuals and groups to observe the environment and make correct interpretations about the implications of change in a firm's strategy and operations (C.K. Prahalad & Ramaswamy, 2004). Kaplan and Norton have by their definition of culture avoided the limitations implied by Schein's definition of culture.

Other dimensions used to define organization capital are:

- Design of (efficient) processes, operational, innovation, development, delivery, customer service, coordination, resource allocation, knowledge dissemination, etc;.
- Design of an (efficient) structure of the internal organization, especially with respect to resource configuration;
- Routines (Nelson & Winter, 1982);
- A well-designed systemic context (Bower, 2000; Greenberg & Baron, 2003) to facilitate behavior as required by the strategy and the development of the firm. This systemic context includes elements like a performance measurement infrastructure, reward system, values, psychological climate, transparency, an organic organization as opposed to a mechanical organization, etc.

Bower (2000) emphasizes a proper design of the systemic context, one based on the strategy to be executed or implemented before the content of strategy is communicated to those who generate initiatives through the bottom-up processes. Kaplan and Norton, however, are unclear on this point. Taken from the field of organizational behavior, the interactive perspective model explains that for most individuals in an organization, behavior results from the interaction of personality and capabilities on one hand and systemic context on the other, the latter being more influential. As a result of such aspects as structure, access to information, basis of rewards, and the system of rewards, career perspectives tend to define the content of bottom-up inititaitves more than the content of a (new) strategy (Bower, 2003). Bower's revised model for his bottom-up resource allocation model gives the first step in strategy execution as (re)designing the systemic context as required by the new strategy, before inviting lower-level members in the organization to propose initiatives and projects to execute the (new) strategy (Bower & Gilbert, 2005b).

Kaplan and Norton (2004) write that "the strategy map describes the changes required by a strategy, such as new products, new processes, or new customers. These changes, in turn, define *new behaviors and values* that are required within the workforce" (p. 277): The experience with Bower's bottom-up resource allocation process showed that new strategies may not evoke new behavior, irrespective of new strategies. Rather, it is the systemic context that defines behavior. Kaplan and Norton suggest a change agenda to identify required shifts in the organizational climate, but organizational climate is the result of the behavior of members of the organization. A number of HBS cases (Duane Morris, Intermountain Healthcare, Publicis) suggest that a deliberately redesigned systemic context facilitates (combined with a visionary leader) sought-after behavior as the basis for organization capital.

9.3. New insights in conceptualizing strategy

In Anthony's concept of management, control strategy development is not a part of the MCS; rather, management control is the function that translates a (given) strategy into task control by including resource allocation. Kaplan and Norton do not explain why they include strategy development in their system, except that for many executives, it is a popular tool of management.

In the last twenty years the idea of strategy has fundamentally changed, while rarely mentioned by the standard textbooks on strategy. Due to the declining cost of information, and many elements of conduct-level strategy, as dealt with in standard texts and the level of strategy Kaplan and Norton refer to, strategy converges with operations. All kinds of portfolio analysis—profitability analysis for customers, markets, products, positioning analysis, pricing analysis—are conside4red part of operational decisions by market managers and product managers. What was once low frequency decisions are now, due to the Internet and real-time data exchange between producers and consumers (including the phenomenon of prosumers), frequency decisions. In the meantime the Internet has transformed markets and information goods so that they require new types of strategy. Due to the commodification and increasing transparency at the conduct level, strategy has shifted to the structural level in the economy. At this level, other dimensions are included, such as legal issues, political issues, mergers and acquisitions, standard wars, etc.

Kaplan and Norton define strategy as the way a firm chooses to create sustained value for its shareholders. We prefer Porter's definition for strategy, i.e., creating a defensible and profitable position within a market. In an efficient market, no sustainable competitive position exists, and so a strategy must be continuously subjected to premise control and other forms of "what-if" analysis. A strategy must continue to be monitored and reviewed.

Hence, there is logic in including strategy development in the management system, but, it should be noted, only at the conduct level of strategy. Contrary to what Kaplan and Norton suggest in their chapter on the subject, mission is not part of strategy development, but of the formative role of the administration of a firm, as defined by values, codes of conduct, etc. Vision is the process of generating eidetic information, which requires first an observation at the structure level of an industry, since from that level the profitability of a business may be defined. This part of Kaplan and Norton's management system may be lacking, in view of the developments in the economy. A notorious problem in strategy development is how to deal with psychological phenomena such as dominant logic and various biases such as the availability and confirmation bias. Dominant logic can be both individual and defined by the organization, through structure, routines, and available information. It requires transformational leadership to see the logic of a social system of an organization and to organize interactive, challenging processes to neutralize such logic. An information space that is independent of the current business model helps to contain the effects of dominant logic by providing redundant information instead of that required by the existing business model. Such an information space is implied by Kaplan and Norton's management system since in addition to alignment it also requires preparation. The multidimensional information assumed by Kaplan and Norton's management system, divisions/business units, strategic themes by product, distribution channel, market segment, etc., can help reduce the effects of organization on dominant logic and address it in individual terms.

Another element of Kaplan and Norton's management system that needs to be discussed is the emphasis on the closed-loop management system: more precisely, a linear closed loop consisting of five steps. This system includes both developing and planning the implementation of strategy and operations, suggesting that these share the same frequency in accordance with earlier observations that conduct level strategy converges with operations. A strong point of Kaplan and Norton's management system is that the execution of strategy and its effects are integrated with the monitoring of operations. But reviewing strategy on the basis of performance is not sufficient; a strategy review must be based on *prévoyance*, looking forward and outward, especially in studying whether the assumptions (especially in the market, the economy, and the PESTLE analysis) are still valid, or whether they should be expected to change. Requiring anticipating changes in strategic objectives and operational planning in accordance with the time-phased backward planning method is characteristic of the strategy map. In those terms, a closed loop linear management system is insufficient, if not dangerous. Planning and monitoring needs to be performed at multiple levels simultaneously, at the operational, structural, and PESTLE level, albeit at different frequencies, in order to predict timely changes to which the firm must adapt, and timely opportunities outside the scope of operational planning.

10. Conclusion

Despite some shortcomings and confusion in the way that Kaplan and Norton describe and present their system of BSC, strategy maps, and management, it may be concluded that they have formulated an alternative to the concept of management control as conceptualized by Anthony, , including cases, as well as to Bower's bottom-up resource allocation process. Kaplan & Norton have designed and made operational a management control system that fits the role of intangible assets and also provides an answer to the changing nature of the firm and of strategy. Kaplan and Norton have innovated business institutions in terms of management control, and including the resource allocation process. Implicit in their management system is the focus on customer value, processes and strategic themes; they have also reduced a typical complexity-reducing institution to a limited set of organizational forms, not so much by increasing the number of forms but by building multidimensional information spaces, strategic themes, and processes across existing departments and divisions where necessary. With the concept of strategic themes, another dimension is added to the organization of firm information beyond the traditional structure of the internal organization. In that, the Kaplan and Norton management system is consistent with, if it is not operationalized, the concept of the information-based organization.

Kaplan and Norton's management control system can be interpreted as a paradigm change for the field of business administration, mainly at the level of business institution, but extending somewhat to the level of complexity-reducing institutions. Of note is that this paradigmic change takes place in the context of an unchanging formative institution, which would likely make the acceptance of the Kaplan and Norton management control system sensitive to the institutional context of individual nations. Based on statistics regarding investments in intangible assets, it may be hypothesized that Kaplan and Norton's management control system enjoys a more favorable informal institutional context in the U.S. as compared to Europe, due to its more dominant entrepreneurial and national agendas for economic growth. Such a management system is an elegant solution to the challenges set by traditional tools of management and organization, given the prominence of intangible assets in firms based on physical assets. It will enable executives to focus on executing strategy without wasting time on structural changes or other ineffective efforts. K&N's management system also supplies investors with assurance regarding initiatives and leading parameters without resorting to a traditional annual report.

References

Anthony, R. N., & Govindarajan, V. (1995). *Management Control Systems* (8th ed.). Chicago: Irwin.

Arrow, K. J. (1996). The Economics of Information: An Exposition. *Empirica, 23*, 119-128.

Barney, J. B., & Ouchi, W. G. (Eds.). (1986). *Organizational Economics: Toward a New Paradigm for Understanding and Studying Organizations*. San Fransisco, Cal.: Jossey-Bass Publishers.

Baumol, W. J. (2010). *The microtheory of innovative entrepreneurship*. Princeton, N.J.: Princeton University Press.

Beck, T. (2011). *The Future of Banking* (eBook ed.). London: CEPR VoxEU.org.

Beck, U. (1999). *World Risk Society*. Cambridge: Polity Press.

Beck, U., Giddens, A., & Lash, S. (1996). *Reflexive Modernisierung: Eine Kontroverse*. Frankfurt am Main: Suhrkamp.

Beck, U., & Lau, C. (2005). Second modernity as a research agenda: theoretical and empirical explorations in the 'meta-change' of modern society. *The British Journal of Sociology, 56*(4), 525-557.

Beniger, J. R. (1986). *The control revolution: technological and economic origins of the information society*. Cambridge, Mass.: Harvard University Press.

Birchler, U. W., & Bütler, M. (2007). *Information economics Routledge advanced texts in economics and finance* (pp. xxiii, 462 p.). Retrieved from http://www.loc.gov/catdir/toc/ecip077/2006102041.html

Bourdieu, P., & Wacquant, L. c. J. D. (1992). *An invitation to reflexive sociology*. Chicago: University of Chicago Press.

Bower, J. L. (1986). *Managing the Resource Allocation Process*. Boston, Mass.: Harvard Business School Press.

Bower, J. L. (2000). A General Management View of Change. In M. Beer & N. Nohria (Eds.), *Breaking the Code of Change*. Boston MA: Harvard Business School Press.

Bower, J. L. (2003). Building the Velcro organization: Creating value through integration and maintaining organization-wide efficiency. *Ivey Business Journal, 68*(2), 1-10.

Bower, J. L., & Gilbert, C. G. (2005a). A Revised Model of the Resource Allocation Process. In J. L. Bower & C. G. Gilbert (Eds.), *From Resource Allocation to Strategy*. Oxford: Oxford University Press.

Bower, J. L., & Gilbert, C. G. (Eds.). (2005b). *From Resource Allocation to Strategy*. Oxford: Oxford University Press.

Bradach, J. L. (1998). *Franchise Organizations*. Boston, Mass.: Harvard Business School Press.

Brickley, J. A., Smith, C. W., & Zimmerman, J. L. (2001). *Managerial Economics and Organizational Architecture* (second ed.). Boston: McGraw-Hill.

Burgelman, R. A., Christensen, C. M., & Wheelwright, S. C. (2009). *Strategic management of technology and innovation* (5th ed.). Boston: McGraw-Hill Irwin.

Burns, T., & Stalker, G. M. (1963). *The Management of Innovation* (2nd ed.): Tavistock.

Burton-Jones, A. (1999). *Knowledge Capitalism: Business, Work, and Learning in the New Economy*. Oxford: Oxford University Press.

Chandler, A. D. (1962). *Strategy and Structure: Chapters in the History of American Enterprise*. Cambridge, MA: MIT Press.

Chandler, A. D. (1996). The functions of headquarters in the multibusiness firm. In M. Goold & K. S. Luchs (Eds.), *Managing the Multibusiness Company: Strategic Issues for Diversified Groups*. London: Routledge.

Christensen, C. M. (1997). *The Innovators Dilemma: When New Technologies Cause Great Firms to Fail*. Boston, Mass.: Harvard Business School Press.
Clarke, T., & Clegg, S. (2000). Management paradigms for the new millennium. *International Journal of Management Reviews, 2*(1), 45-64.
Coase, R. H. (1937). The Nature of the Firm. In O. E. Williamson & S. G. Winter (Eds.), *The Nature of the Firm: Origins, Evolution, and Development*. New York: Oxford University Press (1991).
Davis, S. M. (1979). *Managing and Organizing Multinational Corporations*. New York: Pergamon Press.
Davis, S. M., & Lawrence, P. R. (1978). Problems of matrix organizations. *Harvard Business Review, 56*(3), 131-142.
De Kuijper, M. (2009). *Profit power economics : a new competitive strategy for creating sustainable wealth*. Oxford ; New York: Oxford University Press.
Demsetz, H. (1991). The Theory of the Firm Revisited. In O. E. Williamson & G. W. Sidney (Eds.), *The Nature of the Firm, Origins, Evolution, and Development*. New York: Oxford University Press.
DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review, 48*(2), 147-160.
Donaldson, G. (1994). *Corporate Restructuring: Managing the Change Process from Within*. Boston, Mass.: Harvard Business School Press.
Donaldson, L. (1995). *American Anti-Management Theories of Organization: A Critique of Paradigm Proliferation*. Cambridge: Cambridge University Press.
Drucker, P. F. (1946). *Concept of the Corporation* (revised 1993 Transaction Publishers ed.). New York: John Day.
Drucker, P. F. (1954). *The Practice of Management*. New York: Harper & Brother.
Dunning, J. H. (1993). *Multinational Enterprises and the Global Economy*. Workingham, England: Addison-Wesley.
Fandel, G. (2010). *Modern concepts of the theory of the firm : managing enterprises of the new economy*. Berlin ; New York: Springer-Verlag.
Foss, N. J. (Ed.). (2000). *The Theory of the Firm: Critical perspectives on business and management* (Vol. I-IV). London: Routledge.
Freeland, R. F. (2001). *The Struggle for Control of the Modern Corporation: Organizational Change at General Motors, 1924-1970*. New York: Cambridge University Press.
Furubotn, E. G., & Richter, R. (2000). *Institutions and Economic Theory: The Contribution of the New Institutional Economics*. Ann Arbor: The University of Michigan Press.
Galbraith, J. (1973). *Designing Complex Organizations*. Reading, Mass,: Addison-Wesley.
Garfinkel, H. (2008). *Toward a sociological theory of information*. Boulder, Colo.: Paradigm Publishers.
Gates, J. (1998). *The Ownership Solution: Towards a Shared Capitalism for the Twenty-First Century*. London: Penguin Books.
Ghoshal, S. (2005). Bad Management Theories Are Destroying Good Management Practices. *Academy of Management Learning & Education, 4*(1), 75-91.
Giddens, A. (1991). *Modernity and Self-Identity: Self and Society in the Late Modern Age*. Cambridge: Polity Press.
Godfrey, J., Hodgson, A., Holmes, S., & Tarca, A. (2006). *Accounting Theory* (6th ed.): Wiley Australia.
Goles, T., & Hirscheim, R. (2000). The paradigm is dead, the paradigm is dead …long live the paradigm: the legacy of Burrell and Morgan. *Omega, 28*, 249-268.

Goold, M., & Campbell, A. (1987). *Strategies and Styles: The Role of the Centre in Managing Diversified Corporations*. Oxford: Basil Blackwell.

Grandori, A. (1997). Governance Structures, Coordination Mechanisms and Cognitive Models. *The Journal of Management and Governance, 1*, 29-47.

Grandori, A., & Kogut, B. (2002). Dialogue on Organization and Knowledge. *Organization Science, 13*(3), 224-231.

Greenberg, J. (2010). *Managing Behavior in Organizations* (fifth ed.). Upper Saddle River, NJ: Prentice Hall.

Greenberg, J., & Baron, R. A. (2003). *Behavior in Organizations: Understanding and Managing the Human Side of Work* (eighth ed.). Upper Saddle River, NJ: Prentice-Hall.

Guillén, M. F. (1994). *Models of Management: Work, Authority and Organization in a Comparative Perspective*. Chicago: The University of Chicago Press.

Hall, P. A., & Soskice, D. W. (2001). *Varieties of capitalism : the institutional foundations of comparative advantage*. Oxford England ; New York: Oxford University Press.

Hodgson, G. M. (1988). *Economics and Institutions: A Manifesto for a Modern Institutional Economics*. Cambridge: Polity Press.

Hofstede, G. H. (1970). *The Game of Budget Control*. Assen: Van Gorcum & Co.

Huehn, M. (2008). Paradigms in Management. Caïro: GUC Faculty of Management Technology.

Jensen, M. C. (1998). *Foundations of organizational strategy*. Cambridge, Mass.,: Harvard University Press.

Jensen, M. C. (2001a). Corporate Budgeting Is Broken, Let's Fix It. *Harvard Business Review*. doi: 10.2139/ssrn.321520

Jensen, M. C. (2001b). Paying People to Lie: The Truth about the Budgeting Process. Retrieved 24-9-02, 2002, from http://papers.ssrn.com/paper=267651

Johnson, H. T., & Kaplan, R. S. (1987). *Relevance Lost: The Rise and Fall of Management Accounting*. Boston, Mass.: Harvard Business School Press.

Kanter, R. M. (2009). *Supercorp : how vanguard companies create innovation, profits, growth, and social good* (1st ed.). New York: Crown Business.

Kaplan, R. S. (2010). Conceptual Foundations of the Balanced Scorecard. *SSRN eLibrary*. doi: 10.2139/ssrn.1562586

Kaplan, R. S., & Norton, D. P. (1992). The Balanced Scorecard--Measures That Drive Performance. *Harvard Business Review, 70*(1), 71-79.

Kaplan, R. S., & Norton, D. P. (1993). Putting the Balanced Scorecard to Work *Harvard Business Review*(September-October).

Kaplan, R. S., & Norton, D. P. (1996). *The Balanced Scorecard: Translating Strategy into Action*. Boston, Mass.: Harvard Business School Press.

Kaplan, R. S., & Norton, D. P. (2001). *The Strategy Focused-Organization: How Balanced Scorecard Companies Thrive in the New Business Environment*. Boston, Mass.: Harvard Business School Press.

Kaplan, R. S., & Norton, D. P. (2004). *Strategy Maps: Converting Intangible Assets into Tangible Outcomes*. Boston, Mass: Harvard Business School Press.

Kaplan, R. S., & Norton, D. P. (2008). *The execution premium: Linking strategy to operations for competitive advantage*. Boston, Mass.: Harvard Business Press.

Kikoski, C. K., & Kikoski, J. F. (2004). *The inquiring organization : tacit knowledge, conversation, and knowledge creation: skills for 21st-century organizations*. Westport, Conn. ; London: Praeger.

Knight, F. H. (1921/2005). *Risk, uncertainty and profit*. New York: Cosimo Classics.

Kuhn, T. S. (1970). *The structure of scientific revolutions* (2d ed.). Chicago,: University of Chicago Press.

Langlois, R. N. (2001). The Vanishing Hand: The Changing Dynamics of Industrial Capitalism. *UConn Center for Institutions, Organizations, & Markets Working Paper No. 01-1*.

Langlois, R. N., & Robertson, P. L. (1995). *Firms, Markets and Economic Change: A Dynamic Theory of Business Institutions*. London: Routledge.

Lash, S. (2002). *Critique of information*. London ; Thousand Oaks, Calif.: SAGE.

Locke, R. R., & Spender, J. C. (2011). *Confronting managerialism : how the business elite and their schools threw our lives out of balance*. London ; New York: Zed Books.

Lorange, P., & Vancil, R. F. (1977). *Strategic Planning Systems*. Englwood Cliffs, NJ: Prentice-Hall.

Macharzina, K., & Engelhard, J. (1991). Paradigm Shift in International Business Research: From Partist and Eclectic Approaches to the Gains Paradigm. *MIR: Management International Review, 31*(ArticleType: research-article / Issue Title: Frontiers of International Business Research / Full publication date: 1991 / Copyright © 1991 Springer), 23-43. doi: 10.2307/40213888

Manzi, J. (2012). *Uncontrolled : the surprising payoff of trial-and-error for business, politics, and society* (pp. xvii, 300 p.).

March, J. G. (1994). *A Primer on Decision Making: How Decisions Happen*. New York: The Free Press.

Merchant, K. A., & Van der Stede, W. A. (2003). *Management Control Systems: Performance Measurement, Evaluation and Incentives*. London: Prentice Hall.

Meyer, J. W. (1994). Social Environments and Organizational Acounting. In W. R. Scott & J. W. Meyer (Eds.), *Institutional Environments and Organizations*. Thousands Oaks: Sage.

Milgrom, P., & Roberts, J. (1992). *Economics, Organization and Management*. Englewood Cliffs, NJ: Prentice-Hall.

Miller, D. (2007). Paradigm prison, or in praise of a theoretic research. *Strategic Organization, 5*(2), 177-184. doi: 10.1177/1476127007077558

Moldoveanu, M. C., & Martin, R. L. (2008). *The future of the MBA : designing the thinker of the future*. Oxford ; New York: Oxford University Press.

Nakamura, L. I. (2001). What is the U.S. Gross Investment in Intangibles? (At least) one Trillion Dollars a Year! Philadelphia: Federal Reserve Bank of Philadelphia.

Nelson, R. R., & Sampat, B. N. (2001). Making sense of institutions as a factor shaping economic performance. *Journal of Economic Behavior & Organization, 44*, 31-54.

Nelson, R. R., & Winter, S. G. (1982). *An Evolutionary Theory of Economic Change*. Cambridge, Mass.: Harvard University Press.

North, D. C. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

North, D. C. (1991). Institutions. *The Journal of Economic Perspectives, 5*(1), 97-112.

O'Toole, J. (1995). *Leading Change: Overcoming the Ideology of Comfort and the Tyranny of Custom*. San Francisco: Jossey-Bas.

OECD. (2008). Intellectual Assets and Value Creation--Synthesis Report (pp. 35). Paris.

Osterwalder, A. (2004). *The Business Model Ontology: A Proposition in a Design Science Approach.* (Docteur en Informatique de Gestion), Université de Lausanne, Lausanne.

Pfeffer, J. (1997). *New Directions for Organization Theory*. New York: Oxford University Press.

Pfeffer, J., & Salancik, G. R. (2003). *The external control of organizations : a resource dependence perspective*. Stanford, Calif.: Stanford Business Books.

Picot, A., Dietl, H., & Franck, E. (2005). *Organisation: Eine ökonomische Perspektive* (4. ed.). Stuttgart: Schäffer-Poeschel Verlag.

Porter, M. E., & Kramer, M. R. (2011). Creating Shared Value. *Harvard Business Review, 89*(1/2), 62-77.

Porter, M. E., & Wayland, R. (1992). Capital Disadvantage: America's Failing Capital Investment System. *Harvard Business Review, 70*(5), 65-82.

Prahalad, C. K., & Hamel, G. (1994). Strategy as a Field of Study: Why Search for a New Paradigm? *Strategic Management Journal, 15*(Summer), 5-16.

Prahalad, C. K., & Krishnan, M. S. (2008). *The new age of innovation : driving cocreated value through global networks*. New York: McGraw-Hill.

Prahalad, C. K., & Ramaswamy, V. (2004). *The Future of Competition: Co-Creating Unique Value with Customers*. Boston, Mass.: Harvard Business School Press.

Pratt, J. W., & Zeckhauser, R. J. (Eds.). (1991). *Principals and agents : the structure of business*. Boston, Mass.: Harvard Business School Press.

Schein, E. (1985). Organizational Culture and Leadership. *University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship*.

Schein, E. H. (1996). Culture: The Missing Concept in Organization Studies. *Administrative Science Quarterly, 41*(2), 229.

Scott, W. R. (1995). Symbols and Organization: From Barnard to the Institutionalists. In O. E. Williamson (Ed.), *Organization theory : from Chester Barnard to the present and beyond* (Expanded ed., pp. vi, 268 p.). New York: Oxford University Press.

Simon, H. A. (1945/1997). *Administrative behavior : a study of decision-making processes in administrative organizations* (4th ed.). New York: Free Press.

Simon, H. A. (1991). Organizations and Markets. *Journal of Economic Perspectives, 5*(2), 25-44.

Simons, R. (2000). *Performance Measurement & Control Systems for Implementing Strategy*. Upper Saddle River, NJ: Prentice Hall.

Simons, R. (2005). *Levers of Organization Design: How Managers Use Accountability Systems for Greater Performance And Commitment*. Boston, Mass.: Harvard Business School Press.

Sloan, A. P. (1962/1986). *My Years with General Motors*. Hammondsworth: Penguin Books.

Stinchcombe, A. L. (1990). *Information and organizations*. Berkeley: University of California Press.

Strikwerda, J. (1994). *Organisatie-advisering: wetenschap en pragmatiek.* (Dr.), Katholieke Universiteit Brabant, Eburon - Delft.

Strikwerda, J. (2008). *Van unitmanagement naar multidimensionale organisaties*. Assen - Den Haag: Van Gorcum - Stichting Management Studies.

Strikwerda, J. (2009). How to Combine a Group Strategy with Subsidiary Governance? *SSRN eLibrary*.

Strikwerda, J. (2011). Competing on Information: An Exploration of Concepts. *SSRN eLibrary*.

Strikwerda, J. (2012). *De Nederlandse Corporate Governance Code: Ingeleid, toegelicht en becommentarieerd*. Assen: Van Gorcum.

Strikwerda, J. (2013). Sense Making in Corporate Governance: A multilayered Model for Information Asymmetries between Investors and Executives. *SSRN eLibrary*. doi: http://dx.doi.org/10.2139/ssrn.2370304

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal, 28*(13), 1319-1350.

Useem, M. (1993). *Executive defense : shareholder power and corporate reorganization*. Cambridge, Mass.: Harvard University Press.

van Ark, B., Hao, J., & Hulten, C. (2009). Measuring Intangible Capital and its Contribution to Economic Growth in Europe (pp. 12). New York: The Conference Board.

Volberda, H. W., Weerdt, N., van der, Verwaal, E., Stienstra, M., & Verdu, A. J. (2012). Contingency Fit: Institutional Fit, and Firm Performance: A Metafit Appraoch to Organization-Environment Relationships. *Organization Science, 23*(4), 1040-1054.

Weber, M., Parsons, T., & Giddens, A. (1992). *The Protestant ethic and the spirit of capitalism*. London ; New York: Routledge.

Weick, K. E. (1976). Educational Organizations as Loosely Coupled Systems. *Administrative Science Quarterly, 21*(1), 1-19.

Whitley, R. (1999). *Divergent Capitalism: The Social Structuring and Change of Business Systems*. Oxford: Oxford University Press.

Wilhelm, W. J., & Downing, J. D. (2001). *Information Markets: What Business Can Learn from Financial Innovation*. Boston, Mass.: Harvard Business School Press.

Williamson, O. E. (1985). *The Economic Institutions of Capitalism*. New York: The Free Press.

Williamson, O. E. (2000). The New Institutional Economics: Taking Stock, Looking Ahead. *Journal of Economic Literature, XXXXVIII*(September), 595-613.

Wolf, J. (2005). *Organisation, Management, Unternehmensführung: Theorien und Kritik*. Wiesbaden: Gabler.

Zingales, L. (2000). In Search of New Foundations. Chicago: University of Chicago - Graduate School of Business.

Zuboff, S., & Maxmin, J. (2002). *The support economy : why corporations are failing individuals and the next episode of capitalism*. New York: Viking.