



## MANAGEMENT CONTROL OF INTANGIBLES

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### Abstract

This paper analyzes the importance of management control on the intangible elements considering its contribution for value creation. Some intangible evaluation models and methodologies are discussed, taking into consideration their utility. A new methodological framework that considers the objectives of management control as well as its applicability is presented.

**Key Words:** Intangibles Control; Intellectual Capital Control; Intangibles Management.

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### 1. INTRODUCTION

Literature shows that the management of the intangible elements is a subject of increasing importance, given its influence on value creation for the firm (Brühl and Horch, 2006; Lev and Daum, 2004; Ussi and Ahonen, 2002; Sanchez, Chaminade and Olea, 2000; Edvinsson, 2000). The importance of a firm's positively differentiated capacities on its sustainable competitive advantage (Hall, 1993; 1992) enhances the relevance of the resourced based view in the study of value creation (Brühl and Horch, 2006) and in the construction of these sustainable advantages (Barney, 1991).

The gap between the market value and the book value of the firm (Nakamura, 1999; Booth, 1998) suggests the strong probability of the existence of patrimonial elements that are not disclosed in the financial statements, but are relevant for the value creation of the organizations. Some of these elements are structural resources and human capital. They are included in the concept of intel-

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lectual capital (Widener, 2006), and they must be managed, given their relevance to value construction (Hussi, 2004; Skoog, 2003).

The pervasive characteristic of intangible resources makes their measurement difficult, unlike tangible resources, which are easier to measure. Nevertheless, the measurement of these elements, financial or not, is important for management control. This issue is emphasized because management control is the process by which managers influence the other members of the organization to implement the organization's strategies (Anthony and Govindarajan, 2007), and get information on the delineated objectives (Rittenberg and Schwieger, 2005; COSO, 1994). In pursuing this, it is interesting to analyze which methodologies best safeguard the management control's objectives.

The next section presents the literature review that supports this analysis. Section 3 presents and argues some of the main models and methodologies. In section 4 a methodological assessment is presented, based on the Activity Based Costing methodology presented in Wilkins (1997), and the last section concludes with some possible research lines.

## 2. LITERATURE REVIEW

The literature has presented intangible elements as assets (Hussi and Ahonen, 2002; Sanchez *et al.*, 2000). Cardão-Pito (2007) considers intangible assets as a sub-group of assets, given the existence of different definitions of assets. Based on the definitions of assets presented in the International Accounting Standards Board framework (IASB, 2001) and the Financial Accounting Standards Board framework (FASB, 1985), some of the elements analyzed here exceed the concept of assets. For this reason this work refers to the term intangible resources or elements, independently of whether these are asset elements or not.

Hussi and Ahonen (2002) classify intangible assets as i) generative and ii) exploitable. What distinguishes the former from the latter is the fact that the latter are commercially exploitable. The generative intangible concept includes human capital and structural capital, which can be internal (if connected with the organization) or external (if connected with the environment).

Bontis *et al.* (1999) use the term intellectual capital, which includes human capital and structural capital. Human capital includes abilities, attitudes and intellectual agility, and structural capital includes the relationship with the agents, organizational factors and future project factors, usually related with research and development (R&D) projects. The authors divide the organization's value into financial capital and intellectual capital, as does Booth (1998).

Brooking and Lester (1996) include intellectual property assets in their analysis. These assets, when acquired externally, are included in the financial state-

ments. Their analysis includes elements of the financial capital in the concept of Bontis *et al.* (1999).

Some authors<sup>1</sup> state as elements of intellectual capital: human capital, structural capital and customer capital (Bhartesh and Bandyopadhyay, 2005), separating customer capital from the structural capital. This distinction is related to the importance that the customer capital has within organizations, and as such it can be defined as a commercially exploitable element in the conception of Hussi and Ahonen (2002). Sanchez *et al.* (2000) integrate this capital in relational capital.

The absence of one broadly accepted definition (Ussman *et al.*, 2002), highlights the need for the adoption or construction of a definition that considers the perspective of analysis and the roles and the components to be studied (Marr and Moustaghfir, 2005).

In this paper intangibles are considered elements that lack physical substance, that are generated internally or acquired externally, and which contribute to positive or negative value creation.

This definition integrates the dimensions i) human capital and ii) structural capital (internal and external), as Bontis *et al.* (1999) do, in addition to iii) elements related with brands, patents and others, which are acquired or generated internally and which provide value to the organizations.

Kaplan and Norton (2004) present four principles in a firm's value creation that are related to intangible elements: i) value creation is indirect, that is, the relationship between these resources and the value of the firm operates through chains of cause-and-effect if we consider the organization as a system; ii) value is contextual, i.e. it depends on the strategy of the company and the alignment with this same strategy; iii) value is potential, that is there may be no direct relationship between the intangible value and the market value; and iv) assets are bundled, i.e. they must be considered forming conjunction with other elements of the organization, such as tangible and/or intangible elements.

Kaplan and Norton's principles (2004) state the existence of a complex non linearity between the different elements which in a bundle result in value (Skoog, 2003). This value can be positive or negative. Harvey and Lusch (1999) note the existence of these negative values when they refer to intangible liabilities.

Hussi and Ahonen (2002) note the need for balance between the generative and exploitable intangibles, considering the value generated by the latter. Sveiby (1998) refers to the visible characteristic of tangible elements and notes the importance of invisible elements in the value creation. In this paper, it is considered that balance between all the elements - tangible or intangible - is necessary,

<sup>1</sup> A detailed survey of the concepts used by the different authors can be consulted in Kaufmann and Schneider (2001).

given the endogenous characteristics that seem to exist between the different elements. Management should provide this balance, through the control system implemented, taking into consideration the goals and strategic objectives they have defined.

### 3. EVALUATION MODELS AND METHODOLOGIES

Although the importance of intangible management has been noted in the literature since the second half of the 20<sup>th</sup> Century, it is only from the nineties that a significant set of models and valuation methodologies of intangibles have appeared. These are often valuation models of intellectual capital or knowledge capital. In Appendix I, a synthesis of some of the main models and valuation methodologies is presented. These will serve as a base for the analysis and discussion.

The first measures adopted for intangible elements attempt to answer the question related to the difference between the market value and the book value of the firm, as disclosed by financial statements (Kannan and Aulbur, 2004). In pursuing this, some indicators like the market-to-book ratio or Tobin's Q are commonly applied in the analysis (Wilkins, 1997). Tobin's Q is still used in some investment research studies (e.g. Bond *et al.*, 2000). The use of this indicator is more useful if normalized by the industry average, which eliminates many measurement problems. The aim is to compare the competitive advantage between the firm and the industry (Wilkins, 1997).

In performance analysis, the literature presents traditionally used indicators like the return on assets, the return on investment or the return on equity. These indicators have been criticized because they do not consider the specific capital cost of the asset analysed, as well as for not allowing the identification of the necessary actions by the management team with a view to the value creation of the firm (Bontis *et al.*, 1999).

Considering the control issue, the accounting management literature has come to present successive models of analysis. The Target Costing, Life Cycle Costing, Environment Costing, or Extended Enterprise models consider the outside to inside view of an organization. The literature still presents models related to the value, beyond the analysis of costs, that clearly exceeds the focus of production. Examples are the Economic Value Added and the Value Creation Model. However, for intangible management control, it seems that a lot of work still has to be done. The issue has shifted from them emphasis on cost management to the revenue side of profit equation, and a solution is needed to help the firm's management (McNair, 2007).

Anthony and Govindarajan (2007) relate the need for the existence of four basic elements for the control process: i) detectors, i.e. devices that allow the

measurement of the current situation of the process being controlled; ii) assessors, devices that make it possible to determine the significance of the current situation as against the desired situation; iii) effectors, devices that allow the alteration of behavior, when necessity dictates it for assessors; and iv) a communications network, i.e. devices that transmit information between the detectors and the assessors, and these and the effectors. The process is dynamic and implies measurement. The authors note the link between the control elements of the process and the activities of management, emphasizing the strategic formulation as the starting point for management and activities control that support the organization's mission.

The measurement problem of the different models presented in the literature makes empirical analysis difficult – that is why this kind of analysis has been presented as a basic qualitative. The studies made by Kamath (2007), Brühl and Horch (2006), Catasús and Gröjer (2006), Widener (2006), Salojärvi, Furo and Sveiby (2005), Hussi and Ahonen (2002), Sveiby and Simons (2002), and Hall (1993; 1992) are qualitative, based on case studies or surveys.

Financial statements do not provide the information required for the analysis of intangibles. This information, as built by the accounting statements, lacks important values about this kind of element. Although some studies use this information for analysis (e.g. Boekestein, 2006), in fact timely data is required for the control management analysis. Because of this, the Navigator, Extended Market-to-Book, KRMV Benchmark, Management Value Added and Intangible Assets Monitor models, as presented in the Appendix I, have a marginal utility for effective control, because they work with no timely data.

For analysis, measurement can use qualitative data and data obtained from departments other than the financial. In the literature models can be found with other significant financial and non-financial variables such as the Balanced Scorecard, KPMG Value Explorer, Skandia Navigator, and Brooking's model.

The fact that the proposed models reflect the contingencies on the organization and the strategic alignment makes the commensurability (Smith, 2005) and competitive analysis difficult.

A framework designed for control management must state the timely characteristic and the adequacy of the indicators in alignment with the strategy defined (Anthony and Govindarajan, 2007). In this sense, there are different levels and control necessities that can be analyzed, while taking into consideration the generated value deduced by the supported resources cost, tangible or intangible. Wilkins (1997) emphasizes this perspective in his model.

A model should present a set of dynamic indicators that are periodically measurable to be compared with the defined objectives. A non timely model, such as the Knowledge Performance (*vide* Appendix I), does not present these desired characteristics. As a result, they are not useful for the decision management process.

Voelpel *et al.* (2006) analyze the *Balanced Scorecard* critically, considering it relatively rigid, static, and focused within an organization. Furthermore they claim it neglects the complex network links and creates a limited mental framework. These limitations clearly depend on the management's interpretation of the system implementation process. As Kaplan and Norton (2006) state, many companies have implemented the Balanced Scorecard model to help drive significant performance enhancements. The model contains four dimensions for exemplification, but it is flexible for the companies analysed. In fact, what can be presented as a limitation is the difficulty in applying it to small organizations because they do not have enough resources, and they find it difficult to define the key performance indicators, with regard to the different organisational levels and the links between them. Moreover it is difficult to compare the results with other organizations, as stated by Bontis *et al.* (1999).

#### 4. PROPOSED METHODOLOGY

This section presents an implementation indicators' methodology that enhances the management control system objectives and the firm's value creation. The construction of competitive advantage through intangibles (Sánchez *et al.*, 2000) is emphasized under the proposed intangibles management.

The management control process should ensure i) the effectiveness and efficiency of activities (COSO, 1994), ii) the consistence between the operational tasks, the organisation goals, the management policy and the strategy formulation (Kaplan and Norton, 1996), and iii) the protection of the resources employed (Anthony and Govindarajan, 2007), collecting reliable information for and reporting the issues to the board. These management control objectives are applied to the intangible resources that contribute to the activities developed by the firm.

In light of the objectives presented above, this work aims to provide a new methodology to control the gap between the objectives' definition and the objectives attained for intangible elements.

Given the definition of intangibles presented in the section 2, it is important to classify these elements as generated or acquired externally. Although the latter may easily be quantifiable in monetary values using the acquisition price because they are exploitable in Hussi and Ahonen (2002) classification, the former present an added difficulty, as noted in the literature. The inherent endogenous characteristic between these elements also complicates the measurement and the independent control of each variable. This endogenous characteristic is also applied between tangible and intangible elements.

The relationship between intangible investment and performance is not linear (Boekestein, 2006); it depends on the management system. That is why it

is important to control these elements and their value added contribution to the firm (Edvinsson, 2000). The importance of the management system is stressed if an intangible liabilities hypothesis (Harvey and Lusch, 1999) is considered. Lev (2002) points out the inert intangible characteristic: by themselves (i.e. without the interconnection referred), intangibles neither add value, nor generate growth. In this sense, all of the intangible elements contribute to synergic form for the firm's value creation. Their contribution should be evaluated in the management objectives' alignment.

As Kaplan and Norton (2004) refer, there must be an alignment between the strategy, objectives and firm activities. These activities have associated intangible resources (Wilkins, 1997) that interact with other resources in the output production. So, any methodology should start from the strategy management and tactical objectives for the strategy implementation process.

Johnson and Scholes (1993) consider different strategy levels: i) corporate level; ii) competitive or business level; and iii) operational level. In the strategy definition process, the organizational objectives, the purposes and the mission must be considered. The methodology presented here integrates all these levels, as well as the interconnection between them.

In alignment with the strategy defined by the management, the company obtains or does not obtain competitive advantages in the market. In this sense, there should be relevant indicators to translate the result of the definite strategy (e.g. market share gains; securities value gains). The intangible elements contribute to the definite strategy, but bear no direct relationship with the indicator that translates the strategy result; they contribute only indirectly to these indicators.

For the strategy enhancement, the organization needs to develop activities. Each activity provides value through the contribution ratio for this objective. The strategy enhancement results from the multiplication of the different activities developed, given the systemic and synergic organizational vision. In this way, an activity contributes to the strategy, both directly and indirect, considering the links with other activities. This approach is close to that of Wilkins (1997).

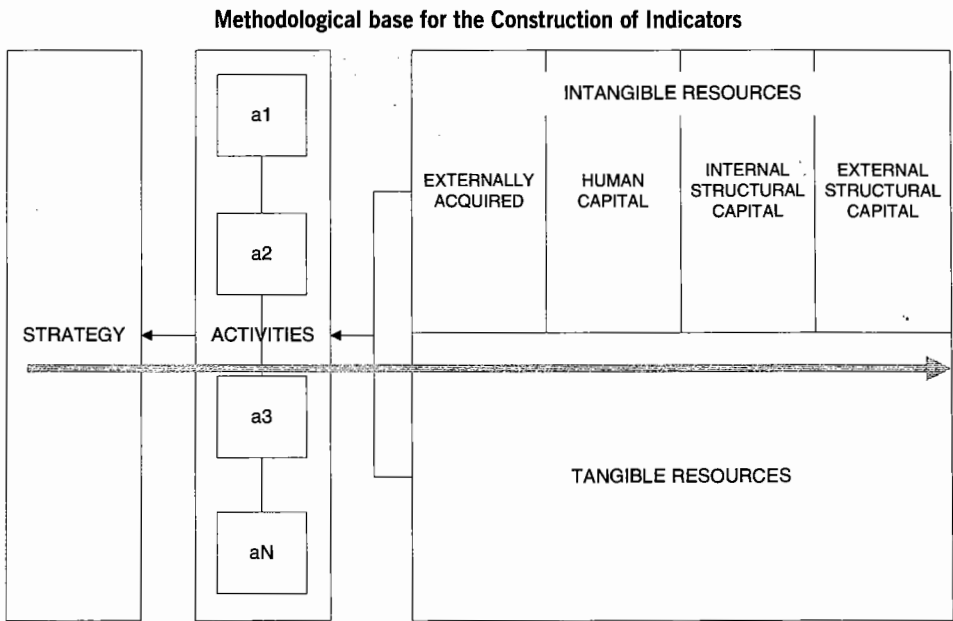
The resource based theory (Brühl and Horch, 2006) suggests the influence of the resources in the different activities. The weight of each resource depends on their allocation by the management, considering the operational objectives of the activities developed for the strategy. Taking into consideration that the management clearly defines the different resource objectives, it is possible to control the associated costs, in light of the value provided by each activity.

Given that intangibles can be classified as externally acquired, human capital, internal structural capital or external structural capital, and that internally generated intangibles follow the classification adopted by Bontis *et al.* (1999), it is important to identify the contribution of each element to the different activities. Afterwards, it is necessary to measure the generated value and the associated

costs for these resources and monitor them according to the activity objective defined by the management.

Figure 1 presents the methodological base and Figure 2 the indicators for the construction process. The contribution of each element presented is supported by the organizational objectives defined.

FIGURE 1



To achieve the three phases described by Sánchez *et al.* (2000) – (i) identification, (ii) measurement and (iii) monitoration – represented in Figure 2, it becomes necessary to define the indicators related to the following devices: detectors, assessors, effectors, and network (Anthony and Govindarajan, 2007) for the control process. These indicators should be defined in function of the organizational objectives, designed to report mechanism and the system that provides feedback to the people responsible for resources, in order to obtain the desired behavior for the fulfilment of the organization’s strategy (see Figure 3).

With regard to the different report levels, the same is applicable to the activities on the part of the organization’s strategic vertex (Mintzberg, 1980). In this way, the influence that each activity has on the strategy defined is measured by the firm. Figure 4 represents this control system design.

The influence of intangibles on the strategic action development is obtained by crossing these two control points – the contribution of resources and the contribution of activities on the strategy. The organization obtains three kinds of promi-



net indicators for its activity: i) net value indicators generated by the different resources on the activities; ii) net value indicators generated by the different activities on the strategy; and iii) indicators indirectly calculated for the generated net value by the different resources strategy.

FIGURE 2

**Methodological Process of Indicators' Construction**

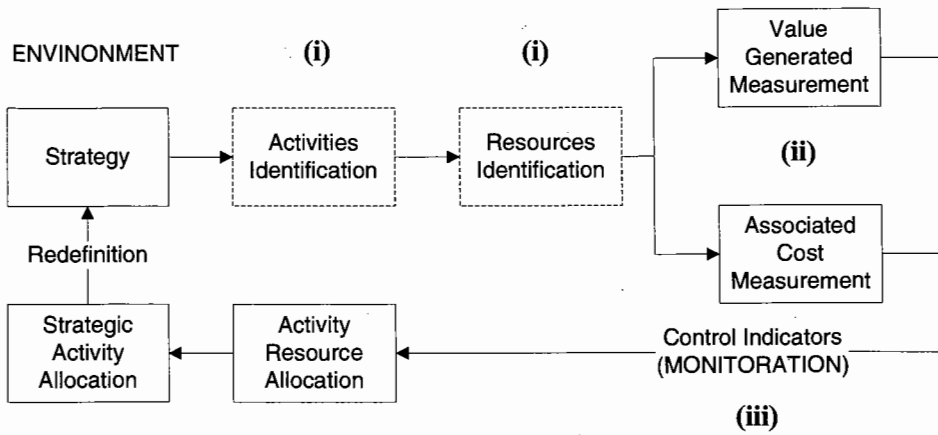


FIGURE 3

**Resources control**

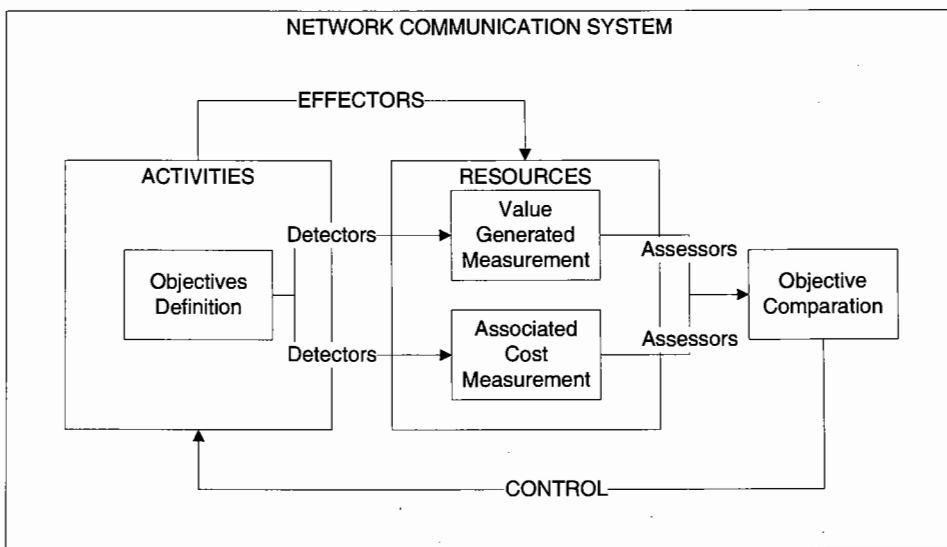
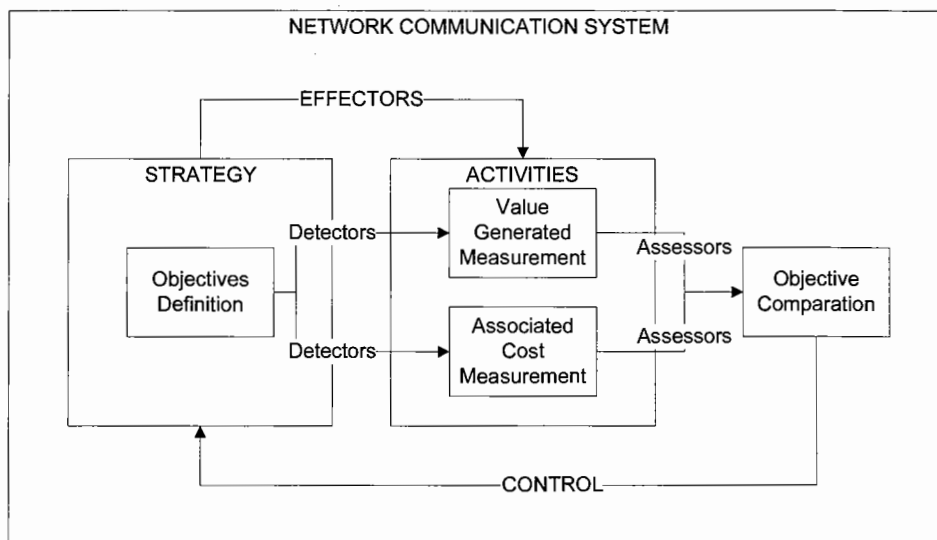


FIGURE 4

Activities Control



Upon grouping the indicators according to the intangible resources classification presented in the Figure 1, it is possible to obtain a net contribution for the firm's value for each group. These indicators sponsor a better management control system by providing an adequate answer in line with the facts obtained by the assessors.

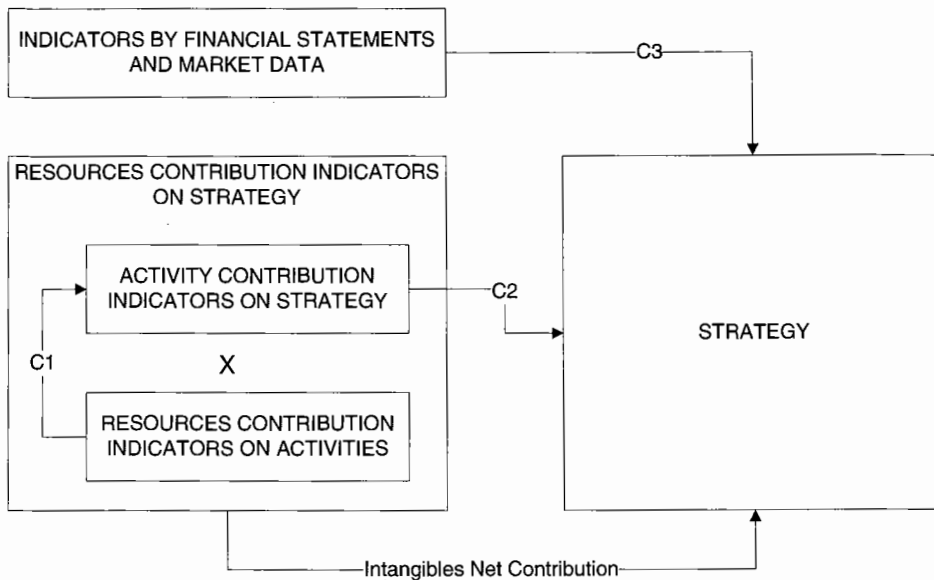
For the strategy gap evaluation, which is obtained by the difference between the strategy attained and the advocated strategy, the organization can appeal to generic financial and market compared indicators for the analysis (e.g. Economic Value Added, Tobin's Q ratio, Market-to-Book ratio, or other appropriate indicators). If the management control system is well defined and gives an integral fulfillment to the strategy drawn, non conformity between the generic indicators based on financial or market facts and the strategic objectives defined will indicate the need for strategy redefinition by the management.

Figure 5 presents the different control management points. This picture considers the three levels of management process.

The first control point – net contribution of resources to activities, presented as C1 in Figure 5 -, is the result of the assembly indicators designed and contingent to the organization, activity and objectives defined by the intermediate management level (detectors). Non conformity between these indicators and the objectives advocated, which is given by the assessors, indicates the need for the management to act in conformity through the effector devices.

FIGURE 5

Control Points



The second control point – C2 – indicates the net contribution of activities to the firm’s strategy. Non conformity between this second group of indicators and the sketch objectives on the strategic level relates to the decision-making through the application of the relative effector devices.

The third control point – C3 – enables the organization to evaluate the strategic options taken, as stated previously.

Control at points C1 and C2 will be carried out periodically according to the needs and the organization’s objectives. They should be calculated timely, thus providing information for the decision-making process. Control C3 will be obtained less frequently and reported in remote periods, given data availability for its calculation. The report time cycle should be aligned with firm’s decision-making process, considering the three management levels approached.

The indicators’ construction process should consider the objectives at several organizational levels. In this way, non financial and financial nature indicators can be considered. Similarly, they could be qualitative and/or quantitative indicators, since the latter could be treated using the control function. Sensible indicator selection should be applied to minimize the costs of the associated process and enhance timely information, considering the management control process objectives. The strategy based on the indicator implementation process should consider the different levels (Johnson and Scholes, 1993). The alignment of design

levels enhances strategy alignment for the human resources of the organization on behalf of the firm's value (Anthony and Govindarajan, 2007).

Using the methodology presented, firms can control the strategy, the activities developed under strategic alignment and the resources applied in each activity promoted. The network communication system will provide reliable and timely information about each element, and management can make decisions with real knowledge provided by the information collected by the management control system.

The methodology crosses resources, activities and strategies promoted by the management in a systemic view. By measuring the control points (see Figure 5), the methodology presented attempts to go beyond the problem of merely measuring intangibles. The intangibles' net contribution is presented as the activity contribution indicators on strategy times the resources contribution indicators on activities.

## 5. CONCLUSIONS AND FUTURE RESEARCH

The growing importance of the intangible elements in a firm and their contribution to its value has inspired research on the creation of models to evaluate intangibles. This work analyzes some of these models in a control management system context, emphasizing the importance of this process in the firm's value creation.

It verifies the existence of several limitations in the models presented in the literature, namely with regard to applicability issues. In light of this, based on the Activity Based Costing methodology and on Wilkins (1997), this paper suggests the possibility for organizations to identify control points according to objectives defined and considering the firm's structural design. The strategy defined is given as a starting point for the control system construction, and it emphasizes the function that the activities and the resources have in the value creation process.

For the different control points, the function of detectors, assessors and effectors is identified, as well as their influence on the decision-making process, according to the different organization's responsibility levels.

With the proposed methodology some characteristics that should be applied in the indicators' construction process are presented, albeit without examples, given the application of contingency theory. The lack of a trial in an organization using this methodology constitutes a limitation.

The measurement problem is not referred to explicitly, but it constitutes one of the greatest challenges in the research scope of the issue of intangibles. Follow-up research will need to address this in order to develop control devices. Further studies will be able to analyze resources imputation techniques for the different

activities, as well as activities imputation techniques for the strategy defined by the organization.

The paper refers to the implicit endogenous characteristic in intangible elements and the relation between these and tangible elements. It will be opportune in future research to analyze these relationships and their influence on the control management process.

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APPENDIX I

**Intangible evaluation models / methodologies**

(author's elaboration, based on Amaral and Pedro (2004), "O Capital Conhecimento – Modelos de Avaliação de Activos Intangíveis", Universidade Católica Editora and other papers cited in the bibliography)

Authors/Literature	Model / Method	Synthetic description of the Model / Method
Brooking, A. (1996), "Intellectual Capital, Core Assets for the Third Milenium", International Thomson Business Press.	Brooking's Model	Suggests that intellectual capital is comprised of four types of assets: (1) market assets, (2) intellectual property assets, (3) human-centered assets, and (4) infrastructure assets
		It relates the necessity of knowing each asset and its function on the process, to determine the value
		After the assets being identified, they must be organized in groups
		The objectives must be defined and classified in performance terms
		It considers the auditor importance in the process
		Result: Graphical vision on target of the indices of assets situation, relatively to the ideal indicators defined by the firm
Kaplan R. and Norton, D. (1996), "Balanced Scorecard, Translating Strategy into Action", HBS Press.	Balanced Scorecard	Destinated system to measure the performance and the strategical alignment of the firm
		Based dimensions: (i) Learning and Growth, (ii) Internal Processes, (iii) Customers and (IV) Financial
		The model integrates financial and non financial indicators
		It establishes connection between the key performance indicators and the strategy of the firm
		Indicators Classification: (i) growth indicators, (ii) renewal indicators, (iii) efficiency indicators and (IV) stability indicators
		The key performance indexes are defined through a debate from the strategy defined by the management
		Result: Performance level indicators and strategical alignment
Edvinsson, L. and Malone, M.S. (1997), "Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Roots", Harper Business, NY.	Skandia Navigator	The authors define the Intellectual Capital as the set of the dimensions (i) focus on the customer, (ii) focus on the process, (iii) focus on the renewal and development. The human dimension is in the center of the same focus
		The model incorporates the financial focus, being excluded from Intellectual Capital dimension.
		The model application implies the indicators selection to cover the different focus.
		To be possible the comparison between companies and sectors, Edvinsson suggests an universal equation of intellectual capital, being this the result of the multiplication between the intellectual capital value in monetary units and the coefficient efficiency use of this capital
		Calculation: assets average efficiency, multiplying this coefficient for the values invested
		Result: Intellectual Capital Value in monetary units

Authors/Literature	Model / Method	Synthetic description of the Model / Method
Stewart, T. (1997), "Intellectual Capital: The New Wealth of Organizations", Doubleday, Currency.	Navigator	Sources of Intellectual Capital: (i) Human capital, (ii) Structural Capital and (iii) Customer Capital
		A set of measures for each one of the dimensions is proposed
		Graphical radar representation suggested, allowing to analyze where the company is and where it must arrive, in the direction of the improvement
Allee, V. (1997), "The Knowledge Evolution: Expanding Organizational Intelligence", Butterworth-Heinemann.	Knowledge Performance Model	It suggests that the measures must be defined with the specific objectives of the firm s
		Survey guided for the company and the environment
		Its qualitatively evaluates the positioning in each model's level, considering as levels: (i) data, (ii) information, (iii) knowledge, (IV) meaning, (v) philosophy, (vi) wisdom e (vii) union
		Result: Firm Performance Opinion
Cap Gemini	Maturity Model	From survey guided to knowledge management processes, the strategy and the critical key factors of success, the results are presented in a matrix that crosses the capture and conversion, the distribution and use of knowledge
		The positioning in different levels allows the construction of a graphical image on the knowledge firm positioning
Sveiby, K. (1997), "The New Organizational Wealth: Managing & Measuring Knowledge-Based Assets", Berret-Koehler Publishers, Inc.	Intangible Asstes Monitor	Adding to book value, the intabgibles value, we can calculate the market value
		Intangible assets: (i) external structure, (ii) internal structure and (iii) individual ability
		Three basic concerns are considered: (i) growth, (ii) renewal/innovation, (iii) efficiency/utilization and risk/ stability
		The model crosses the basic concerns with the three types of intangible assets
		The indicators are calculated, compared the value through the time and calculated the percentile variation of these same indicators
		All the indicators must be calculated objectively, being presented examples of indicators; some relevant information is considered by financial accounting system
Knowledge Advisory Services, KPMG, Netherlands (1997)	KPMG Value Explorer	Core competences model based to identify what it is more relevant in the organization
		Dimensions: (i) the robustness, i.e. the vulnerability level of the knowledge to leave from an organization, (ii) the sustainability, i.e. imitation level, (iii) the potentiality, i.e. the capacity to generate chances, (IV) the competitiveness, i.e. until it is the most competitive face to the remains players and (v) the value creation, i.e. the capacity to create value perceived to the customer
		Stages: (i) intellectual capital variable identification, through the core competences, (ii) attribute scoring for the related variable by dimension, (iii) financially evaluate the results associates by competence, (IV) develop an improvement planning a recommendations set and (v) to report to the management

Authors/Literature	Model / Method	Synthetic description of the Model / Method
<p>Wilkins (1997), "Understanding and Valuing Knowledge Assets: Overview and Method", Expert Systems With Applications, Vol. 13, No 1, pp. 55-72.</p>	<p>Knowledge Asset Value</p>	<p>It considers that the captive knowledge values the result of the sum of the costs based on the value and the value created, for all processes where the resource is used</p>
		<p>Production process focus</p>
		<p>The production is divided in activities, such as it happens Activity Based Costing method</p>
		<p>In the determination of the asset value, the following questions are considered: (i) which the added value of the activity for the product, (ii) which the cost of the resource for activity, (iii) how much the added value that can be consigned to knowledge asset and (IV) which the cost that can be consigned to the knowledge asset</p>
		<p>In the added value concept, the author relates the customer as a central element of the process</p>
		<p>The activities are the central element of the suggested method</p>
		<p>It must be determined (i) the assets related with intensive knowledge capital, (ii) for each activity the set of resources consumed in production, (iii) which the resources related with the knowledge assets and list them, (IV) for each activity the set of produced products and (v) the cost of each resource for product</p>
<p>The author relates the procedures to take to the resources for product determination</p>		
<p>O'Dell, C. <i>et al.</i> (1998), "If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice", Free Press.</p>	<p>Knowledge Management Assessment Tool (KMAT), developed by American Productivity &amp; Quality Center and Artur Andersen</p>	<p>Questions developed for the groups: (i) knowledge management process, (ii) knowledge management leadership, (iii) knowledge management culture, (IV) management of knowledge technology and (v) knowledge management measurement</p>
		<p>The questions are guided for the company and the environment</p>
		<p>The answers are quantified</p>
		<p>Result: Opinion on aspects related to the knowledge</p>
<p>Strassman, P. (1999), "Information Productivity: Assessing Information Management Costs of U.S. Corporations", Information Economics Press</p>	<p>Management Value Added</p>	<p>Knowledge Capital = Management value added/Capital Price</p>
		<p>The Management Value Added is calculated from the financial statements, deducting the factors cost in a normal remuneration tax</p>
		<p>Result: Management value added in monetary units, actualized by knowledge capital price</p>
<p>Standfield, K. (2002), "Intangible Management: Tools for Solving the Accounting and Management Crisis", Academic Press, Elsevier Science.</p>	<p>Extensive Market-to-Book</p>	<p>Real value = Tangible Capital + [ Capital Carried through Knowledge + Knowledge Capital Erosion + Sustainable Competitive Advantages]</p>
	<p>Starts from book value to the associated investor market value, to the attainable market value and to the real market value</p>	
	<p>Knowledge Revenue Market Value (KRMV Benchmark)</p>	<p>It defends that there is a multiplying effect between the book value and the market value</p>
	<p>It allows to estimate the effect of a knowledge alteration on returns, market value and securities value</p> <p>Result: Market Value/Knowledge Capital, allowing a firms comparison</p>	



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**Resumo**

Este trabalho analisa a importância do controlo de gestão sobre os intangíveis considerando a sua contribuição para a criação de valor na entidade. São discutidos alguns dos modelos e metodologias de avaliação de intangíveis, tendo em consideração a sua utilidade e é apresentada uma sugestão de metodologia, que considera os objectivos do controlo de gestão, bem como a sua aplicabilidade.

**Palavras Chave:** Controlo de Intangíveis; Controlo de Capital Intelectual; Gestão de Intangíveis.

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