PUTTING INTANGIBLE ASSETS MANAGEMENT TO WORK

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Abstract: The intention of this paper is to present the initial pilot test results of an integrated model for managing intangible resources called Intangible Assets Management. The method comprises three main phases: Qualitative Analysis or Evaluation; Quantitative Analysis or Valuation; Decision Making Support. Historically, business practitioners and scholars have tended to focus on methods based on qualitative analysis (See Andriessen’s “Making Sense of Intellectual Capital” (2004), Viedma’s “Intellectual Capital Benchmarking System” (2006), and Alwert, K.; Bornemann, M.; Will, M. (2007). However, the aim of this paper is to demonstrate the importance to managers of quantitative analysis, i.e., the valuation phase in administering intangible assets. Furthermore, by means of the valuation process, the method seeks to alert managers to the generalization that the best returns likely come from intangible resources; in this manner, we hope to contribute to a move away from the traditional management paradigm of focusing exclusively on tangible assets. Over the course of the qualitative analysis, or evaluation phase, Intangible Assets (IAs) are identified, mapped, and individually considered as a set of Sources of Added Value(SAV). Note, however, that each Intangible Asset also impacts the Underlying Asset (UA) that represents the financial results to the organization. Additionally, the paper describes the valuation phase, comprised of a library of methods to evaluate assets, including the Real Options Valuation (ROV) method. Since intangible assets present intrinsic future risks and uncertainties, the availability of the real options concept is the best way to manage such uncertainties. As a consequence, managers have the flexibility to deal with any scenario that might present itself vis-à-vis intangible assets (subject of a future paper). Although the method was developed for a major energy company, it can be implemented in any business unit, department or organization. After an in-depth description of the method, the preliminary results are discussed.

Keywords: Intellectual capital; intangible assets; valuation; real options; added value; organizational competencies; business processes.
Introduction

The main objective of this paper is to present, in general terms, the first pilot application of the method Intangible Assets Management in the area responsible for Health, Safety and Environment (HSE) policies within a large energy sector corporation. Based on this real case, procedures to identify and map the intangible assets of this organization will also be presented; such procedures are a part of the qualitative analysis/evaluation of intangibles. The following stage (evaluation of identified intangible assets) will be described in general terms; details will be presented in future work.

First, we briefly describe some examples of recent methods based on a similar conceptual base, but which did not regard valuation per se as the objective. Instead, this method seeks to respond to the demands of companies that want to see their intangible assets identified, mapped and, above all else, valued.

The importance of concepts will then be commented, including such concepts as organizational processes and skills through which the creation of value occurs within organizations. We also emphasize an integrated view of tangible/intangible assets, and of the importance of meeting the expectations of interested parties (stakeholders) as a way to accredit the valuation process.

Finally, we shall describe the procedure for implementing the pilot application of the method, using one of the identified assets for illustration purposes.

Conceptual Assumptions

To develop a model that has as its perspective the integrated view of all organizational resources, it is necessary to start with concepts that are both robust and accepted by the academic/business world. In studying the concept of organizational competencies, and in particular the core competencies, we noted that the integrated view of resources could be represented using the concept developed by Hamel and Prahalad (in Prahalad, et al., 2004). However, the original concept of these authors is not sufficiently rigorous to differentiate intangible assets from the other organizational resources. Therefore, based on the work done by Andriessen (2004) on the definition of core competencies, we have established certain criteria to ensure such rigor.

The reference criteria (core competencies) of the competitors of the organization under study are based on the concept of benchmarking. The organization must create value competitive with other organizations to ensure its medium and long term survival. Therefore, it must compare its own competencies with those of its competitors. One author who has heavily exploited this concept is Viedma (2006). The model developed here uses the concept of benchmarking in a way different to that used in the model developed by Viedma. However,
his work corroborates and confirms our conclusions about the importance of the concept.

Although the two methods are innovative, they still fail (at least in an integrated way) to account for two important concepts: organizational processes and organizational skills, both critical during the stage of identification and mapping of the intangible assets of any organization. On the other hand, the InCaS) (Intellectual Capital Statement) method, described by Alwert, K., Bornemann, M., and Will, M. (2007), partially fills this gap by highlighting business processes and knowledge processes. Academic and business communities consider this method a candidate for a universal standard. The European Economic Community, for one, has demonstrated its commitment to this happening.

Although the InCaS method represents an advance in the use of business/knowledge processes as a conceptual base, like the others, it does not address the process of valuation. Firms are increasingly feeling the need to implement a method for managing intangible assets that includes a way to appraise such assets, despite the difficulties in obtaining such an appraisal.

Based on these concepts and assumptions, and by combining organizational processes and competencies, a model was developed with the intent to establish a new paradigm, that of enabling managers to concentrate on intangible resources, and transcending the culture that assumes financial and physical assets are the main factors that produce value in the organization. Managers want more than to merely evaluate intangibles: they need tools to support their decision-making, i.e., to diagnose which intangibles have with highest probability of yielding economic benefits.

Processes, organizational competencies and creation of value.

Processes express, in a sense, the dynamics of the organization, dynamics that manifest themselves through organizational competencies. Therefore, competencies are closely linked to processes. While processes enable the flow of available resources, organizational competencies represent the activities that use the resources to create value.

We define Organizational Competence (Sequeira, C., Fernández; Borges; 2009) as a set of intangible assets, backed by tangible assets in a manner both interrelated and synergistic, with the potential to create value. The focus of the competence is the organization itself; however, the approach is comprehensive, i.e., it includes relationships with suppliers, partners, customers and other interested parties (stakeholders).

Organizational Competence is made up of two basic components: a) the component formed by the group of individuals who instantiate the competence, and who contribute with their skills, knowledge and attitudes; b) the component formed by the internal context, i.e., available technologies, work infrastructure, explicit knowledge, norms, values, management processes, etc. Factors relative
to the organization’s external environment also comprise part of this contextual component, fostering the development of organizational competencies to a greater or lesser degree.

Environment conducive to value creation

An organization’s resources are capable of creating value only in the appropriate context, i.e., one that enables the development and flow of such resources. The current consensus is that individuals are the main source capable of creating value (assured by investment in training/qualification of human resources) and in identifying and retaining talent.

Thus, knowledge assets, produced from investment in human resources, only create financial returns in conjunction with other types of assets. Such is the case with new processes, information systems, business management processes, appropriate management attitudes, etc. Without the proper context, intangible assets do not grow and quickly lose the potential to create value – more rapidly, even, than the depreciation of tangible assets. Therefore, another source of value creation is organizational structure, through investments in technologies that support new business models.

Creating the proper context for the development of intangible assets should be the main concern of the organization’s managers. They need to be aware of the internal dynamics as well as those surrounding the organization, i.e., the competitive environment in which the organization operates.

Integrated vision of tangible and intangible resources

In general, the flow of resources and allocation of activities must meet three demands of value, as shown in Figure 1:

• Create value for customers to keep them satisfied and loyal.
• Create results for internal stakeholders, to whom the organization answers directly. Internal stakeholders are the parties most directly involved, for example, officers, presidents or next higher level for whom the organization responds. (Stakeholders means the parties involved or who have an interest in an organization, company, corporation, including shareholders, employees, customers, suppliers, society, etc.)
• Create competitive value to ensure the medium and long-term survival of the organization.
This requires an integrated view of the application of tangible/intangible resources and constant optimization of activities through organizational processes and capabilities. For example, if the organization is creating value as a result of process efficiencies, such will be reflected in positive results for stakeholders and, perhaps, for customers. But this value may be insufficient to ensure the competitiveness of the organization, i.e., to create competitive value.

If managers restrict their energies to just one of those demands, the risk of failure and unbalanced results will be high. For example, cost reduction programs, from the singular perspective of generating immediate results for stakeholders, will be reported by managers as successful, if traditional models using income statements are used. But cost reductions can substantially reduce the value created for customers and obliterate competitive value, thereby making the organization vulnerable. This occurs when cost reductions assume intangible assets to be unimportant, that they do not need to be preserved.

Likewise, if managers take care of value creation only from the perspective of customers, without rewarding investment, the organization will have to face the internal stakeholders. Achieving equilibrium requires managers’ efforts to balance the application of resources and an ongoing assessment of the return on investments in intangible assets, including human resources training, talent retention, strengthening of the brand, new technologies,
etc., by comparing returns thus obtained with those from tangible assets. In this sense, the concept of organizational competencies portfolio management is an important tool to ensure that a balanced application of organizational resources. And the classification of intangible assets in categories such as operational, tactical and competitive value creators also helps to prioritize resources – precisely what the method seeks to implement.

The role of stakeholder expectations

As mentioned earlier, the goal of the Intangible Asset Management method is to provide a tool so managers can manage and administer the organization’s resources, focusing on assets classified as intangible.

In order to define the issue properly, organization means a group of people who develop products and services using tangible and intangible resources. Thus, an organization can refer to a business unit, a division, a department, a sector or the corporation as a whole.

The method considers processes and organizational competencies in synergy rather than in isolation. As described earlier, some management methods tend to focus only on processes or competencies. Another example is that of business process re-engineering that guides redesign efforts to reduce costs. While this may be necessary, it is not sufficient because it can lead the organization to destroy value by excluding important sources of added value.

Therefore, the method takes into account the expectations of stakeholders vis-à-vis a particular future scenario and the present situation of the organization as essential to start the qualitative analysis (which does not require the identification of intangible assets), as shown in Figure 2.
Description of Application Procedure - evaluation stage

The method was designed and specified by creating a simulator in Excel complemented by a simulator in a web environment. In this way, we ordered the steps the organization must follow to obtain the mapping of intangible assets and sources of added value. Figure 3 illustrates the method in eight steps:

1. Organizational Identity;
2. Contextual position;
3. Value expectations;
4. Value Creation
5. Mapping of Intangibles
6. Sources of value
7. Valuation and
8. Action Plan, Analyses and Reports

These eight steps are grouped into blocks (WP - WorkPackage) where the worksheet folders are identified that support the application of the method, for example, 2. Identification; 3. Contexts, and so forth.
During the first six steps (1-Organizational Identity to 6-Sources of value) the stages of organization appraisal are conducted. This is a qualitative analysis that starts with the statement and the value creation model, then proceeds through analysis of internal and external contexts, identification of stakeholders, stakeholder expectations, and critical success factors and actions necessary to meet these expectations.

At the end of this cause-and-effect sequence, the Intangible Assets (IAs) necessary to perform the necessary actions and to overcome the critical success factors are identified; the goal is to meet stakeholder expectations, always taking into considering the organization’s value creation model. These stages are supplemented by the mapping of the Sources of Added Value (SAV) related to each Intangible Asset, as shown in Figure 4.
Also during the valuation stages, complementary activities are carried out, including the classification of intangible assets into three categories: Operational, Tactical and Competitive, if considered operational, tactical or competitive, respectively, are so deemed, and in accordance with the creation of value. In order to define these categories, there is a set of twenty-seven questions, previously established and cross-referenced with the three categories. When answered, the questions generate a percentage indication that points to the category to which the asset is most closely related.

The value contribution level is also analyzed; it will facilitate the establishment of priorities during the management of intangibles jointly with the classification of intangible asset in one of five categories of Intellectual Capital, i.e., Human, Organizational, Relationship, Technology Domain and Environmental following the description in the Intangible Assets Management Report, IEPUC (2009).

As mentioned, the level of contribution of each intangible asset (previously identified and mapped) serves to prioritize the most important assets. The calculation of this level is performed based on responses to six questions considered essential to identifying core assets. These questions follow the same concept of core competence. The response results will indicate the level of contribution of the intangible asset. Following this procedure, we can prioritize
assets with greater potential to contribute and continue to the next steps of the qualitative assessment.

Here too, the potential contribution is identified of each source and its weighting (marginal, participatory, contributing, beacon, fundamental) in creating value for intangible asset to which it is associated. These weightings are self-explanatory: Marginal Source has a weighting of one, which is lower than the Fundamental source, whose weighting is five. Also defined is the impact of the intangible asset on organizational results through the most impacted financial indicators, the so-called Underlying Assets (UA), as shown in Figure 4. The description and the role of these indicators in the assessment process will be the subject of a future article.

The calculation of the potential contribution of each source is directly associated with the type of underlying asset to which the intangible asset, representing these sources, is correlated. For example, for the underlying asset whose indicator is CAPEX (CAPital EXpenditure), there are three specific questions to be answered: Prevents the causes of harm? Contributes to performance? and Ensures final quality? For each underlying asset, a specific set of questions is listed. These questions are described in the project Final Report, IEPUC (2009).

Pilot Application

The first workshop of the pilot application starts work to fill in the fields relative to Organizational Identification. Among these, the main fields considered for the analysis of intangibles are Declaration of Value, Value Creation Model, Primary Supplier, Secondary Supplier, Primary Customer and Secondary Customer.

The Declaration of Value and the Value Creation Model contribute to focus the work that results from the identification of Primary and Secondary Suppliers, Primary and Secondary Customers, and especially, in the identification of organizational stakeholders.

Among the primary and secondary customers identified during the workshop activities, corporate Upper Management and Business Units, classified as Primary Customers, were the stakeholders selected for analysis in the following steps of the method. In other words, the identification of their expectations, the factors considered critical to meet these expectations and the actions needed to overcome these critical factors.

It is important to note that, being a pilot application, stakeholders were not surveyed directly, and, therefore, the statements in the model are the expression of the perceptions of those present on the day of the workshop. The next step was to identify the assets needed to support the required actions.
Analysis of Contexts

The internal and external contexts are analyzed from the perspective of a set of dimensions. Organizational Competencies, Managerial Dynamics and Intangible Development Potential are the dimensions through which the internal context is evaluated. For each dimension, there is a set of related questions which, when answered, provide the degree of conformity vis-à-vis each dimension of the organization.

This degree of conformity, which varies from half to one-and-a-half, is called the resilience factor. It indicates the organization’s propensity to create intangible value. The dimension Managerial Dynamics had the highest resilience factor, while the dimension Intangible Development Potential presented the smallest factor for the internal context, with a total resilience factor of 1.28.

The external context is analyzed using the following dimensions: Customer Vision, Relationships, Sustainability, Institutional Politics, Regulation, Technology and Economy. Here, the dimension Economy had a factor below one, indicating that the organization is more vulnerable to the economic scenario. However, in the dimension Relationship, the organization is well positioned, meaning it has a high resilience factor thereby facilitating the creation of intangible value. The external context had a total resilience factor of 1.22. Thus, the organization is likely to create intangible value more as a result of the internal context than the external.

The dimensions of each context are also weighted according to their degree of influence. Factors range from Fundamental (weight 5) to Marginal (weight 1), passing down through Beacon (weight 4), Contributor (weight 3) and Participatory (weight 2). The dimensions of the internal context all have Fundamental weighting. While the external environment dimensions Regulation, Sustainability, Relationships with Suppliers and Partners, Customer Vision have Fundamental weighting, Economy and Technology have Beacon weighting and the dimension Political Institution has Contributor weighting.

The analysis of contexts gives a snapshot view of the organization. The dimensions that require more attention are Economy and Regulation. In analyzing the sub-dimensions that resulted in the factor of 0.92 in the Economy dimension, managers can, in the future, devise strategies to change this factor.

Categories of Intellectual Capital, Contribution Level and Existence of Intangible Assets

Intangible assets that have been identified as necessary to achieve actions are now classified as existing, non-existing or partially-existing. They are also categorized as Human, Organizational, Relational, Technological or Environmental in accordance with their profile and ranking in these categories.
The level of contribution, obtained through a set of questions, indicates the relative importance of each asset in the contribution of value to the organization. The contribution level helps prioritize the assets that deserve further investigation. In other words, when one has a reasonable set of assets, it is necessary to select the most important ones before proceeding to the next steps of the method. Intangible assets with a contribution level closest to five will be chosen over those with contribution level closer to zero.

The level of contribution is attributed according to the perception of the work group regarding the asset’s ability to create future value, and may, therefore, vary according to the proposed scenario as well as the evaluation of internal and external contexts.

Classification as Tactical, Operational or Competitive

One of the objectives of this pilot application was to select the most important assets and to follow the procedure until the valuation stage. As such, four assets were chosen to be analyzed in this pilot application. In this paper, we describe just one of these assets in the following steps. The classification of the asset as Tactical, Operational or Competitive also contributes to ranking the assets, within a set, in order to sort which are the most important. Usually, Competitive assets are prioritized when it is time to prioritize future strategies. But if organizational focus is on the present, then Tactical or Operational assets have stronger weighting. Everything depends on the current situation of the organization.

Identification of Sources of Added Value (SAV)

Figure 5 shows the Value Creation Map for the stakeholder: Upper Management. As well as the Value Statement and the Value Creation Model, on the map there appear the expectations, critical success factors, actions to meet expectations, actions to surpass critical success factors, intangible assets required to support the actions, and Value Added Sources of each asset.

Both Upper Management and Business Units had four expectations; however, only one was analyzed. In relation to each expectation, critical factors and corresponding actions were mapped.
Three intangible assets related to Upper Management were identified and mapped: Model for HSE processes and methodologies, with eight Value Added Sources; Technical/Up-to-date competence in HSE, with five Value Added Sources; and Management of relationship and information networks, with five Value Added Sources, as shown in Figure 5.

Analysis of SAV of Intangible Asset: “Model for HSE Processes and Methodologies”

As stated earlier, the results of just one of the assets will be presented. The Intangible Asset selected, “Model for HSE Processes and Methodologies,” is associated with the stakeholder Upper Management through the expectation “Foster excellence in corporate HSE performance.” After a detailed financial analysis of the impacts of this asset, it was concluded that the indicator of the underlying asset is CAPEX, as illustrated in Figure 6. This means that this asset creates value by releasing CAPEX, i.e., it helps to make resources available to be used in activities requiring investment. As an asset classified as “competitive,” the value created is directly aligned with future strategies.
The intangible asset has a potential of 63%; this means it has room for 37 percentage points of possible improvements in performance for creation of value.

There are eight sources that create value for this asset. One of them, “Valuation of Benefits” is considered to be a Contributor, with a weighting of three. Four are ranked as Fundamental.

Valuation and Decision Support

As mentioned, the description of valuation will be the subject of future papers. But, in order to understand the dynamics of the application procedure as a whole, right after the SAV-analysis of each asset, the information with respect to maintenance costs, projections of future value creation, investments required for growth of intangible assets, etc., are consolidated with the organizational managers. From there, the evaluation of source characteristics commences, mainly with regard to ways of creating value, and managing risks and uncertainties.

Based on the financial information, the value of the impact is calculated and entered into the Excel- and web-based simulators. The simulators then perform the respective valuation calculations. Here, two scenarios are considered, A and B. The difference between two scenarios comes from the combination of resilience
and volatility to produce the values of the two scenarios, as follows: The greater the resilience factor, the lower will be the volatility of values produced by the organization. And the lower the resilience, the greater volatility of these values. Thus, scenario A is calculated with greater volatility; scenario B is calculated with lower volatility.

Risks and uncertainties of intangible assets

Unlike Discounted Cash Flow (DCF), (Koller, T., Goedhart, M. Wessels, D., (2005)), the Real Options Analysis (ROA) method, (Copeland, T., Antikarov, V. (2001)) allows for an appraisal of strategic flexibility or ability to respond to future uncertainties, measuring the benefit of investment in such assets in financial terms. Similarly, the method allows us to measure the investment in such assets, indicating the level of risk or cost savings that can be expected. Using ROA requires the prior assessment of internal and external uncertainties, as well as uncertainties associated with the asset itself.

While SAVs are related resources and are capable of synergistically creating future value (future benefits) and present uncertainties and associated risks, Real Options provide a way to manage the uncertainties related to investments in assets. For example, capacities created by Human Resources practices and combinations thereof are options that can handle such uncertainties.

Real Options theory recommends that to manage uncertainties proactively (Bhattacharya, M., Wright, P. (2004) a venture must develop capabilities, i.e. combinations of resources and processes. In essence, these capabilities are options because they lower the cost of adjustments when changes occur, preserve value, and afford decision-making and operational flexibility. Options require additional investments (“Real Options Premium”) for which the returns are not immediately available. The costs entailed to create the option are irreversible, and must be evaluated in terms of the expected benefits.

And while valuation by discounted cash flow (DCF) does not afford decision-making and operational flexibility, it is complemented by Real Options Analysis. The one does not preclude the other. In fact, valuation starts out with the application of DCF.

To perform the valuation, a library of FCD and ROA tools is assumed; the most suitable ones are then selected for the case in hand. Although this library is dominated by specialized asset-valuation tools (facilitators), the method already includes the basic tools to carry out an initial assessment.

Conclusions

The method provides an organization’s executives with the ability to identify and map the most important intangible assets, through a sequence of
cause and effect, starting with stakeholder expectations and ending with an inventory of intangible assets and related sources of added value. Using this procedure, management can analyze in depth the processes and organizational competencies in search of intangible assets, as well as the impacts on financial results, as pointed to by the indicators most closely related to each asset. The concept of Sources of Added Value provides a way of managing intangible assets using the very resources that comprise such sources.

As such, the valuation procedure used by the method uses as inputs the financial numbers and information that are most intimately related to the organization and its performance. This contrasts with other methods that start with market value and, from there, proceed to a division and allocation of value to each of the organization’s intangible assets. Such is the result when a value is placed on the company brand. Thus, these methods do not provide managers with a solid and objective tool for management of their intangible assets.

In addition to identifying the most relevant intangible assets, this first pilot application also provided an opportunity to consolidate the information and data necessary for the valuation procedure to be fully analyzed in a future paper.

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