Constructivist and Analytical Approach to Intellectual Capital

Antanas Anskaitis¹, Vaidotas Bareišis¹, Zigmantas Lydeka²

¹ ISM Vadybos ir ekonomikos universitetas
Ožeškių g. 18, LT-44254, Kaunas

² Vytauto Didžiojo universitetas
K. Donelaicio g. 58, LT-44248, Kaunas

Intellectual capital as a concept is only as much useful for the theory and practice of management as it helps explaining the differences or to create value addition to the performance of organization. Multiple studies have been carried out on this account, a series of them was developed employing original framework by Bontis (1998). Their methodological findings and encountered controversies in the actual results enable us to advance the model further, to extend its applicability as well as analytical rigorousness and to suggest new aspects for the framework of our study to be carried out in the pan-Baltic region. In order to reinforce the case for the model explaining the performance of the organization by the construct of intellectual capital we begin with the constructivist approach to the problem and then continue with the analytical model.

Social constructivism approach emphasizes the importance of culture and context in understanding what occurs in society and constructing knowledge based on this understanding. Contrary to the physical science where understanding about the object does not change its behavior or characteristics, impact of the subject’s expectations or belief about the object could be huge in social science. Competitive environment and constant changes create constant demand for changing management theories and once applied correctly, they facilitate the value creation in the organization both through the differentiation as well as through receptiveness to the changes in organizational environment. During the last decade, intellectual capital became one of such theories, explaining value creation for the organization through deconstructing of its three sub-domains – human capital, structural capital and relational capital.

Findings from the pilot study of intellectual capital done by N. Bontis (1998) have set several lasting implications for the future research which are evaluated, analyzed and also compared to the later studies done by other authors in this article. The findings have reinforced the argument about the contextual (industry-specific) nature of relationship between the intellectual capital and the performance of the organization as well as benchmarking against industry norms. Therefore this paper should serve as a roadmap for further applications and advancements of the current model explaining why and how the phenomena of intellectual capital is a successful social construct holistically explaining the differences and shifts in the performance of the organization.

Keywords: intellectual capital, performance, constructivist view, analytical model.

Introduction

This article is based on the presentation done in the workshop on visualizing, measuring and managing intangibles and intellectual capital, in Italy, Ferrara, on the 18th–20th of October, 2005.

In the recent decade the popularity and breadth of the notion of intellectual capital has been continuously taking this emerging theory to the extremes where it claims to become a dominant paradigm in the management science, embedding multiple disciplines of management. Intellectual capital has established itself among most widely accepted management constructs. Its holistic approach emphasizes the dimensions of knowledge employed and activated in the organization as well as the impact of the knowledge-based activities on the performance of the organization. Conceptually the theory of intellectual capital is a modification of a knowledge-based theory of an organization, successfully introduced and explored by Demsetz (1991), Brown and Duguid (1991), Kogut and Zander (1992). In our paper we share a more reserved approach of Grant (1997) that “the emerging knowledge-based view of the organization is not a theory of the organization in any formal sense. It is more a set of ideas about the existence and nature of the organization that emphasize the role of knowledge.” Let us argue that intellectual capital did not produce a new paradigm, but merely it is successfully integrating knowledge-related aspects of existing theories and putting it into the management perspective.

However it should be noted that the dialectical strength and progress in the field of intellectual capital studies did not create similarly strong resonance in the management practice. The research to-date has successfully advanced the conceptualization of intellectual capital, strengthened arguments for the knowledge-based view of the organization, and introduced the building blocks connecting the abstract notion of intellectual capital with the practice of management.

Therefore the main aim of this article is to analyze how intellectual capital explains and facilitates the value creation process in the organization through analytical and constructivist approach.

We hypothesize that there could be two reasons for such phenomena:
• first, following the constructivist approach, the commitment and articulation of a new phenomenon creates additional value to the performance of the organization through the commitment and coherence of actions of those involved in the value creation process within a particular organization;
• secondly, there could be objective reasons why a fresh emphasis on theoretically justified domains of the knowledge-base of the organization provides a platform for re-discovered object and method of management and thus new source of value creation.

In this paper we start with the constructivist argument and continue by reviewing and reinforcing the model originally developed by Bontis (1998) to justify its appropriateness and to refine its rigorousness as well as extend of its application. The paper shall lay a theoretical basis for a new research on a larger sample of respondents in the pan-Baltic environment. It is our intention to extend the model with a loyalty dimension as one of the major antecedents impacting the sustainability of all building blocks of intellectual capital.

The object of this paper is intellectual capital.

The methodology of the research – analysis of scientific approaches to intellectual capital and comparative analysis of empirical researches in the field of intellectual capital.

Commitment to the theory as a catalyst of the performance of the organization – constructivist approach

As argued by Grant (1997), scientific management and total quality management were two the most important contributions to management practice during the last century. Even though both theories are so much different in terms of methods, processes and even nature for the decision making, at their own peak of popularity they have contributed to the quality of management practice and thus the value creation and performance of the organizations. The reason for this being the fact that Taylor’s scientific management, where separation of labor between workers, responsible for operational tasks, and managers, responsible for decision making, was totally new at that time, just like the emphasis on the quality of the product and process in total quality management theory several decades later.

The development of management ideas is essential for effectively interpreting and intervening in contemporary business (Clarke and Clegg, 2000). Furthermore it is even essential that the emerging management ideas correspond to the rapid and constant changes in the external environment of a contemporary organization. The theory of total quality management most probably would not be successful in the early twentieth century; just like the basic ideas of scientific management do not possess sufficient nowadays to be a successful organization.

We introduce here a social constructivism approach which emphasizes the importance of culture and context in understanding what occurs in society and constructing knowledge based on this understanding (Kukla, 2000). Contrary to the physical science where understanding about the object does not change its behavior or characteristics, impact of the subject’s expectations or belief about the object could be huge in social science. A new theory not necessarily has to be veracious in order to make an influence on the behavior of the subject. Therefore “the future of social and organizational systems cannot be predicted, because the growth of knowledge will itself impact on the future of such systems. And the growth of knowledge cannot be predicted because knowledge is used to develop new knowledge in ingenious ways.” (Popper, 1972)

The increasing number and sophistication of paradigms make greater intellectual demands upon managers where they need to be understood rather than ignored. This accelerating change in thinking is fuelled by the transformation of technology, markets, products and processes. If these new ideas are accepted, they gradually become reality and practice of management. At the same time, new ideas could become a core focus of the organization motivating and recruiting its employees for a better performance not because for the idea itself but for the belief into something new. As concluded by Benson (1977), Astley and Van de Ven (1983) “by giving accounts of organizational phenomena, theory helps to give objectivity to the practices to which it refers”. Furthermore, Ritzer (1980) rightly suggests that “multiple paradigm sciences like organization theory fulfill essentially political functions, as the proponents of each paradigm are engaged in political efforts to gain dominance within the discipline as a means of imposing their own conceptions of reality on the practical events of social life”.

Constant innovation is necessary for survival not only for single organization but for the entire management theory as such. “Business that may have only recently recovered from restructuring, down-sizing, business-process re-engineering and other shock therapy, are faced with the fact that creativity, innovation and the accumulation of intellectual capital are the positive routes to business success” - confident Clarke and Clegg (2000).

During recent years academic literature analyzed the role of knowledge in different aspects of the organization. Grant summarizes these streams, including “the resource analysis of the organization (Barney 1986, 1991, Prahalad and Hamel 1990, Grant 1991), epistemology (including contributions from Polani 1962, Hayek 1945) and organizational learning (Levitt and March 1988, Huber 1991).” Current focus on the role of knowledge as the main factor of production, proves that its time for intellectual capital if not to drive the change of the very paradigm, then at least to shift it.

On the application side late nineties – beginning of this decade have been marked by much more intensive application of the research in knowledge management while a broader and more holistic concept of intellectual capital did not produce a comparable enthusiasm among practitioners.

It should be noted however that the commitment to the new social construct alone is not sufficient – context and timing should be appropriate. Competitive environment and constant changes create constant demand for changing management theories and once applied correctly, they fa-
cilitate the value creation in the organization both through the differentiation as well as through receptiveness to the changes in organizational environment.

**Impact of the intellectual capital on the performance of the organization – analytical approach**

We shall present below the findings of earlier studies which have conceptualized and empirically tested the viability of the very concept of intellectual capital and its sub-domains – human capital, structural capital and relationship capital as well provided some evidence about the correlation of those with the performance of organization.

Our particular emphasis in this part of the paper shall be in exploring these findings and to answer the following questions:

1. What are the actual drivers behind the impact of the intellectual capital on the performance of the organization and whether they have been sufficiently visualized?

2. Which of the conceptual sub-domains of the intellectual capital prevails in determining the performance of the organization and what are extended managerial dimensions which could possibly integrate these dominating drivers into one phenomena (using the example of the notion of loyalty)?

**Earlier research about the impact of intellectual capital on the performance of an organization**

In 1998 following the recently emerged debate on knowledge-based assets of the organization, Bontis has first proposed a comprehensive framework together with one supporting pilot study which should “help both academics and practitioners more readily understand the components of intellectual capital and its impact on business performance”. The construct of intellectual capital in this and subsequent studies has been conceptually divided into three sub-domains – human capital, structural capital (also referred to as organizational capital – Edvinsson and Malone, 1997, Youndt and Snell, 2004) and relational (also referred to as customer – Bontis or social capital – Adler and Kwon, 2002) capital. The three sub-domains together group the entire knowledge base of the organization in accordance with its nature and knowledge-bearing entity – individual, organizational, cross-organizational. It is important to underline the convergence of concepts brought by the model since it deconstructs earlier variety of broadly and loosely defined notions into the range of basic elements taken from the basic activities and realities surrounding the practice of management.

The immediate findings from the pilot study of Bontis in 1998 have set several lasting implications for the future research. The model has been repeatedly applied on new data samples and by that it has sustained a scientific requirement of repeatability. It has also reinforced the argument about the contextual (industry-specific) nature of relationship between the intellectual capital and the performance of the organization. In respect of the measurement it has promoted “longitudal examination of intellectual capital metrics as well as benchmarking against industry norms” rather than trying to establish in absolute terms what it is all worth which has been and still is a challenging quest for those engaged in the studies of the measurement and reporting of intangibles.

**Summary of the earlier studies of the impact of IC on the performance of an organization**

<table>
<thead>
<tr>
<th>Direction of correlation</th>
<th>Bontis, 1998</th>
<th>Bontis et al., 2000 / Non-service</th>
<th>Bontis et al., 2000 / service</th>
<th>Chen et al., 2004</th>
<th>Youndt and Snell, 2004</th>
<th>Average benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>HC-&gt;RC</td>
<td>0.499</td>
<td>0.799</td>
<td>0.798</td>
<td>0.383</td>
<td>-</td>
<td>0.629</td>
</tr>
<tr>
<td>HC-&gt;SC</td>
<td>0.492</td>
<td>0.525</td>
<td>0.304</td>
<td>0.748</td>
<td>-</td>
<td>0.517</td>
</tr>
<tr>
<td>HC-&gt;P</td>
<td>-</td>
<td>0.678</td>
<td>0.678</td>
<td>0.211</td>
<td>-</td>
<td>0.445</td>
</tr>
<tr>
<td>RC-&gt;SC</td>
<td>0.197</td>
<td>0.441</td>
<td>0.496</td>
<td>0.858</td>
<td>-</td>
<td>0.498</td>
</tr>
<tr>
<td>RC-&gt;P</td>
<td>0.639</td>
<td>-</td>
<td>0.708</td>
<td>0.396</td>
<td>-</td>
<td>0.611</td>
</tr>
<tr>
<td>SC-&gt;P</td>
<td>0.508</td>
<td>0.105</td>
<td>0.262</td>
<td>0.733</td>
<td>0.189</td>
<td>0.359</td>
</tr>
</tbody>
</table>

| Number of respondents    | 64          | 64                              | 43                          | 31              | 208                    | 82              |
| Industry                 | Various     | Non-service                     | Service                     | High-tech enterprises | Various            | -               |
| Country/region           | Canada      | Malaysia                        | Malaysia                    | China           | USA                    | -               |
| Nature of respondents    | MBA students for their employers | MBA students for their employers | MBA students for their employers | Entrepreneur, general manager or top executive | Executives (usually CEO and president) | -               |
| Questionnaire used       | Bontis      | Bontis                          | Bontis                      | Chen            | Youndt, Snell (modified Bontis) | -               |

In a later study by Bontis, Chua Chong Keow, Richardson (2000) which was addressing a new sample of data from Malaysian companies the following theoretical advancements have been emphasized:

- The perceived measures of performance can be a reasonable substitute for objective measures of performance (Dess and Robinson, 1984) and have significant correlation with objective measures of fi-
nancial performance (Hansen and Wernerfelt, 1989);
• The service and non-service contextuality in respect of the strength of underlying regression analysis as well as some universally consistent correlations, such as the impact of the customer capital on the structural capital of the organization were practically demonstrated by grouping the respondents by industry.

The very model was theoretically extended in the later research to include new input dimensions for intellectual capital, like for example in a study of Youndt and Snell (2004). The authors have successfully introduced the analysis of how human resource configurations (such as buy – make dilemma in respect of human capital, egalitarian and cooperative configurations in respect of social capital and information technology, documentation configurations in respect of organization or structural capital) correlate with the performance by utilizing the intellectual capital as “a mediating construct” between the two.

The following conclusions could be made from the summary provided in Table:

• Rather wide variations of the correlation between the structural capital and the performance (from 0.105 to 0.733) suggest that either the visualization of the components of the structural capital is insufficiently developed, or the nature of the structural capital of the organization is highly intimate and contextual. This finding provides serious empirically justified implication for further research in the area of structural capital and its disclosure;

• Particularly strong impact of relational capital on the performance of the organization has been also emphasized by majority of the previous researchers and this comparative overview of their findings reinforces the overriding importance of the customer intimacy highlighted by hypothesis of Youndt and Snell (2004) that “social capital between their organizations and their customers aids in identifying idiosyncratic customer needs as well as facilitates the development of novel solutions to address these needs”;

• In all studies the strongest average correlation has been found between the human capital and relational capital. This implies that the knowledge and skill embedded in the human capital of the organization is a strong driver of its relations to external actors. It is therefore worth studying deeper aspects to this relationship, for example through the notion of loyalty, common to both sub-domains of intellectual capital. We explore this example in more detail later in our paper.

• Comparatively low number of respondents suggests that the base of respondents should be expanded not only in order to provide broader basis for statistical analysis but also to enable grouping the respondents into various analytically homogenous sets (e.g. by industry, size, ownership type, region, etc.)

The authors of previous studies have developed convincing recommendations for advancing further research. Here is the list of the major findings:

• the use of a convenience sample is a strong criticism against these data because of the appropriateness and representativeness of the respondents (Bontis, 1998);
• to elicit responses directly from a wide variety of organizations that include both manufacturing and service industries (Bontis, 1998);
• utilize model specifications which would not require paths into structural capital (diamond and simplistic specification) (Bontis, 1998);
• a need for a larger sample drawn from various countries and organizations (Bontis et al. 2000);
• introduction of new sequences (other organizational activities) facilitating the development of IC, further than just HR activities (Youndt and Snell 2004);
• move beyond the independent analysis of each of the three sub-domains of intellectual capital to examine the effects of their coexistence and a need for more research to clarify the make-up of these variables as well as determine their relative independence (Youndt and Snell, 2004);
• a need to revise the performance metrics used (Youndt and Snell, 2004).

All in all it is obvious that the method is now successfully tested and by activating the findings from the pilot studies reviewed we may not only get rid of methodological weaknesses of the model but also extend its applicability and rigor.

Another important source of advancement in the field is produced by integrating the best aspects of alternative models developed by other schools of thought. Among those schools which have most notably advanced the management of intellectual capital and measurement of its impact on the performance of an organization is the one, which has enjoyed a rather broad practical application has been evolving around the notion of the balanced scorecard. Its conceptual framework is addressing basically the same dimensions of the knowledge domains, in more practical terms however. The Balance Scorecard (BSC) (Kaplan and Norton, 1992) extends traditional tangible/measurable in traditional financial terms perspective of the organization with the three additional layers – clients (comparable to relational or customer capital), internal and business processes (comparable to structural capital) and learning and growth (comparable to human capital). The theory was further extended to put the balance scorecard at the heart of the strategic management of a organization, through strategy mapping (Kaplan and Norton, 2000). We have drawn some of our recommendation for the design of our future research from the experiences and conceptualization sourcing from the concept of the balanced scorecard.

These learning points are summarized into a set of recommendations and intentions regarding the broader directions as well as methodological particularities of the future research in the concluding subchapter.

Conclusions and further research intentions

Let us conclude the paper with the main outlines of the research to be conducted by the authors as a result of the refined features of the model presented in our study above.
Since we rely on a fundamental model developed and applied by the previous authors, the value added by our research shall also come through additional validation and advancement of the basic methodologies employed in the model. The following aspects should be addressed:

1. **Visualizing and deconstructing the concepts**

   More elaborate definitions of the items included into each of the sub-domains shall be introduced into the questionnaires. Verbal definitions should be supported with visual examples, anecdotes or illustrations. Additional items, for example, identified in the intellectual capital report formats, may be considered for the introduction into the questionnaire.

2. **Data collection, questionnaire, access to and selection of respondents**

   In order to be able to benchmark the findings of the study conducted on the pan-Baltic context against the findings of the previous authors; our initial sample should include the executive MBA students from the leading business schools in all three countries representing their employers. The results from this initial sample should be used as a basis for the benchmarking feature to be enabled in the second stage of the data collection. This stage should be carried-out via specially designated web-site accessible to the registered respondents only. Registration should be facilitated by the direct contact list and the respondents are to be motivated to take part in the study by providing them with a benchmark (e.g. against the industry average) report after the completion of the second stage of data collection (approx. 1 month). The third stage should be open for a wider public and subject to statistical qualification of the response should immediately return automated benchmark report after the submission of questionnaire.

   The questionnaire in all three cases should be organized in a systematic rather than random distribution of questions (i.e. grouped by the sub-domain) and each of the items should be illustrated with a definition, anecdote or illustration.

3. **Analytical samples**

   The analysis, benchmarking and reporting should include at least the following dimensions: industry, ownership-type, size, country of operations. Apart from the findings of the studies presented above, we also follow the argument by Dess et al., 1990 that "researchers should be more explicit in delineating critical structural characteristics of industries or should stratify research samples by industry".

4. **Performance measurements**

   Performance measurements should consist of both perceived assessment of the respondents and also of the actual indicators of the performance of the company represented by that respondent.

   This paper therefore should serve as a roadmap for further application and advancement of the model explaining why and how the phenomena of intellectual capital is a successful social construct holistically explaining the differences and shifts in the performance of the organization.

**References**


Antanas Anskaitis, Vaidotas Bareišis, Zigmas Lydeka

Ekonomininkų kapi talo naudojimas veiklai organizacijose: ataskaita

Teisė atsakingos organizacijos

Autorius

2010

KONSTRUKTYVISTINIS IR ANALITINIS POŽIŪRIS Į INTELEKTINĮ KAPITALĄ

Santrauka

Šis straipsnis parengtas autoriaus skaito ataskaito parbaudintieji renginių „Visualizing, measuring and managing intangibles and intellectual capital“ ir „Organizational Learning and Learning Organization Symposium“ 1996. metų seminarinėse konferencijose. Pastarajį dėmesinį tekstą autoriaus pasiūlė Vaidotas Bareišis, tačiau jis buvo perkeltas į lietuvių kalbą ir pasiūlytas išleistis ateityje. Antanas Anskaitis


Antanas Anskaitis, Vaidotas Bareišis, Zigmas Lydeka

KONSTRUKTYVISTINIS IR ANALITINIS POŽIŪRIS Į INTELEKTINĮ KAPITALĄ

Santrauka

Šis straipsnis parengtas autoriaus skaito ataskaito parbaudintieji renginių „Visualizing, measuring and managing intangibles and intellectual capital“ ir „Organizational Learning and Learning Organization Symposium“ 1996. metų seminarinėse konferencijose. Pastarajį dėmesinį tekstą autoriaus pasiūlė Vaidotas Bareišis, tačiau jis buvo perkeltas į lietuvių kalbą ir pasiūlytas išleistis ateityje. Antanas Anskaitis