Abstract

Changes occurring in environment of organization require a new attitude toward the structure of its capital (taking human, structural, and intellectual capital into account) and toward the measurement of elements that are a major source of the development of its competitiveness and goodwill. Nonetheless, system of reporting does not follow these changes. The paper presents the notion of intellectual capital both employing narrower and wider perspectives as well as historical outline of the way in which the concept of intellectual capital was developed paying special attention to pioneering works connected with issues relating to measuring intellectual capital and classification of its structuralizing elements (the Konrad Group, K.E.Sveiby, L. Edvisson and M.S. Malone).

Introduction

In recent years, the functioning of many organizations has changed considerably. Hence, economic theories that hitherto described the economic reality turned out to be ineffective as they were formulated in conditions of stable environment, slight competition, as well as closed and isolated economies. Phenomena determining the direction of modern changes have made it necessary to seek new concepts that reflect changing environment accurately. Thus, the following questions arise: which concepts will cure problems that modern enterprises face? Where should one seek sources of competitive advantage? A developing theory of intellectual capital represents this trend.

This theory is a response of economic world to the process of transformation from industrial era based on using traditional production factors into Knowledge Era. Together with a concept of knowledge management, it is one of theories developed parallel and perfectly complementing one another as well as aiming at establishing new standards of managing in changing competitive conditions. At the same time, the concept of knowledge management was developed within organization and management science, and the concept of intellectual capital (an equivalent of the aforementioned one) has been developed in economics.

This paper presents the notion of intellectual capital and the outline of the history of intellectual capital concept. In order to fulfill the aforementioned objective, hitherto existing theoretical material taken from domestic and foreign literature on the issues raised was a major source of information.

The notion of intellectual capital

Although the notion of “intellectual capital” is found in economic theory since the 60’s of the 20th century, it has not been defined explicitly which results from the fact that it is characterized by indefinable and transitory nature. Besides, this notion is very often equated
Some authors consider intellectual capital a limited notion and regard it only a characteristic of an individual\(^1\) or equate it with knowledge directly. Such an approach considerably reduces the scope of analysis of factors favorable to the improvement of competitive advantage of an enterprise. The other approach to intellectual capital, i.e. employing a wider perspective, treats intellectual capital as a combination of (all kinds of) intangible assets of organization that allow for its functioning. Human capital is only an element of a set of non-material factors enabling enterprise to improve competitive advantage and make profits above the average.

According to Hudson (1993, 32), intellectual capital is a combination of the following four factors:
- genetic heritage,
- education,
- experience,
- attitude toward life and business.

Every individual is a unique combination of these four factors. All these elements form the competence of a human being (Mikuła 2002, 8). However, this combination also refers to organization treated as a community (Dobija 2002, 33) consisting of many particular individuals.

Urlich (1998, 15-28) believes that employees possessing proper skills and aspiring to achieve objectives established by organization are the greatest asset of a firm. Intellectual capital, i.e. one’s identification with a firm and competence of employees reflected in their way of thinking and working as well as way of creating employment policy and systems, is a major factor determining firm’s success. The author discussed proposes the following definition:

\[
\text{Intellectual capital} = \text{competence} \times \text{motivation}
\]

Highly competent but not motivated enough employees will not be able to carry out work the most effectively. In such a situation, it seems that less skilled workers will be employed in a firm. Hence, increase in intellectual capital consists in improving competence of employees and/or their motivation (Dobija 2000, 65).

Nahapiet and Ghosal (1998, 242-266) treat intellectual capital as knowledge and competence for acquiring this knowledge, i.e. a sum of knowledge acquired by people forming a particular community of enterprise. Olsson (1998) presents a similar approach and defines intellectual capital as knowledge and skills with which a particular individual enriches his/her job.

On the other hand, Steward (1991) defines intellectual capital as a sum of everything that everyone employed in enterprise knows and at the same time everything that determines competitive advantage of organization on the market.

Steward (1997, 31) also mentions basic elements of intellectual capital and believes that activity of any enterprise depends on patents, processes, skills possessed by managers, technologies, information about consumers and suppliers as well as experiences. Such a combination gives rise to intellectual capital. The author also specifies the notion of human capital and states that it encompasses everyone who thinks. Steward believes that machines work (very often more effectively than people) but are not capable of inventing anything, and money speaks but do not think. Innovations are the main objective of human capital – regard-

\(^1\) In this case, it seems more justified to equate human capital with intellectual capital.
less of what they refer to, namely a new product, service or improvement in the system of management.

Hudson (1993, 32) agrees with the definition proposed by Steward to some extent but also notices two problems from his thesis. First of all, Hudson wonders if a sum is defined accurately. He is of the opinion that intellectual capital of a firm is a sum of its particular components (elements), but asks the following questions: How to calculate this sum? Are the rules of arithmetic applied while adding up? What is the unit of measurement?

Edvisson and Malone (2001, 40) share the view held by Steward and define intellectual capital as organizational technology, knowledge, good relations with customers, relevant experience as well as all skills that enable a firm to win competitive advantage on the market. Skrzypek (1999, 5) employs a wider perspective while defining the issue discussed and believes that knowledge useful to a firm is a basis of intellectual capital. Still, she also includes communication, intuition, emotions and desires in the notion.

By contrast, definition provided by International Accountants Society treats intellectual capital as a total capital of enterprise including knowledge and broadens the scope of its elements. Apart from element mentioned by Steward, Edvisson and Malone, the aforementioned definition also encompasses agreements, information systems, administrative procedures, trade marks and effectiveness of processes (Fazlagic 2002, 89).

Bratnicki and Dyduch (2001, 270) describe intellectual capital as a sum of knowledge acquired by individuals forming community in enterprise and practical transformation of this knowledge into elements included in the goodwill. Hence, this capital activates other areas of goodwill creation.

G. and J. Ross (1997) also employ a wide perspective and regard intellectual capital as a sum of hidden assets of organization that have not been taken into consideration in its financial (balance) report. Furthermore, this sum includes both employees’ intellect and knowledge as well as everything that remains once they have left a firm. This approach has been popularized in Polish literature on the subject by Osbert-Pociecha and Karaś (1999, 49). According to the definition offered by Wiig (1997), intellectual capital consists of assets resulting from taking intellectual actions such as acquiring new knowledge (learning), coming up with inventions, and establishing precious relations with other people.

As stated by Brennan and Conell (2000, 209), differences between particular definitions of intellectual capital arise from various level of aggregation of its elements.

The concept of intellectual capital – historical outline

The notion of “intellectual capital” has been used for the first time by John Kenneth Galbraith in his letter to the outstanding Polish economist Michał Kalecki. He wondered whether Kalecki knew how much everyone owned to the contribution of his intellectual capital made during last decades (Hudson 1993, 15).

The creation of the so-called Konrad Group is considered a formal creation of the intellectual capital concept. This group was set up by seven prominent figures of Swedish economic world on November 12, 1987. The group aimed at devising a universal method of managing intangible assets of organization and methods for measuring what is nowadays described as intellectual capital and what determines competitive advantage. In this way, the group issued a challenge to traditional concepts.

“Konrad’s Report” was an effect of intensive work. It was published in 1989. The report pointed out drawbacks of traditional reporting and financial analysis. Taken industrial era into account, it was enough to collate several pieces of data on liquidity, activity, profitability or indebtedness in order to get a reliable view of situation of a particular enterprise and its position against competitors as well as obtain information used as a basis for making decisions.
The Konrad report showed that in changing conditions, the importance of financial indicators was declining and suggested that more weight should be attached to indicators and information other than financial (e.g. the fact that key employees have joined or left a firm). Finally, the report stressed the importance of knowledge and experience. The document discussed included over 30 indicators, other than financial ones, showing intellectual capital and introduced a classification that was adopted in the further research on issues relating to intellectual capital (Figure 1), namely
1. capital on the basis of which every enterprise functions that can be divided into the following two groups:
   traditional financial capital
   know-how capital
2. the notion of know-how capital was renamed into intellectual capital later on and divided into two elements, namely
   intellectual capital ascribed to individual – usually called "individual capital" and defined in the report as personal, individual and social skills, education, experience and other skills oriented to the outside, i.e. to customers of enterprise.
   Intellectual capital ascribed to organization – also called "structural capital" and defined in the report as the history and experience of the entire organization that can be found in textbooks, computer programs, tools and concepts developed in order to solve problems faced by customers.

In other words, structural capital is the total knowledge acquired belonging to a particular organization that exists regardless of employment fluctuation. Hence, it is the organization that owns structural capital, whereas individual capital is a property of particular members of organization. When a key employee leaves a firm, this firm loses all individual capital attributed to this employee and keeps only the part of this capital that have been retained as a part of structural capital. According to all the experts in this field, structural capital is more valuable in a long-term perspective than individual capital as far as organization’s survival and development is concerned.

Figure 1. Capital structure according to the Konrad Group

<table>
<thead>
<tr>
<th>TRADITIONAL FINANCIAL CAPITAL</th>
<th>KNOW-HOW CAPITAL</th>
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<tbody>
<tr>
<td>attributed to an individual</td>
<td>attributed to organization</td>
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Source: own compilation

Still, the first attempt to define intellectual capital and device means for measuring this capital was made at the turn of the 70’s and the 80’s by Sveiby (member of the Konrad Group). His economic activity was a success. Sveiby (1997, 10) believed that his success was a consequence of shifting the importance from traditional methods of management to a completely new approach which was a starting point of a new concept. Sveiby divided intangible assets into the following three groups (this division is still commonly adopted and accepted) (Figure 2):

2 Sveiby repurchased a storehouse “Affarsvarlden” that was headed for collapse and built a thriving publishing house E+T Frlag round it cf. (Strojny 2000, 17).
a. internal structure – (internal structural capital), i.e. patents, computer and administrative programs, organizational concept and culture; this structure is created by persons employed in enterprise which is the owner of this structure;
b. external structure – (external structural capital), i.e. relations with customers and suppliers, brands, reputation and firm’s image, may be a database containing information about customers; since it can be appropriated, it can also be subject to turnover;
c. human capital – is inextricably integrated with an individual (employee), his/her knowledge, experience, presence and possibilities of taking actions within enterprise; it cannot be appropriated but only leased.

Figure 2. Classification of intangible assets according to Sveiby

<table>
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<tr>
<th>INTANGIBLE ASSETS</th>
</tr>
</thead>
<tbody>
<tr>
<td>internal structure</td>
</tr>
<tr>
<td>external structure</td>
</tr>
<tr>
<td>human capital</td>
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</tbody>
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Source: own compilation

First attempt to measure intellectual capital was made in Swedish enterprises WM-Data and Skandia AFS at the turn of the 80’s and 90’s. In 1989, the first-mentioned firm published the annex to annual report concerning intellectual capital that the firm had. On the other hand, Skandia was the first firm in which a new position in organizational structure was created in 1991, namely intellectual capital manager. It was assumed by Leif Edvisson whose main objective was to improve and develop intellectual capital as a long-lasting value of major importance as well as introduce it in the balance of enterprise (Edvisson, Malone 1997). His report entitled “Visualizing Intellectual Capital” and published in 1994 triggered an avalanche of interest. About 500 entrepreneurs from all around the world contacted Edvisson (Strojny 1999, 7).

Skandia established objectives that intellectual capital was supposed to attain. The following actions were included into these objectives (Osbert-Pociecha, Karaś, 1999, 20):
• identifying, distinguishing and providing measurability of so-called soft assets,
• developing and directing intellectual capital via, among others, professional development and creation of network in the scope of information technology,
• increasing the value of intellectual capital via, among others, faster exchange of knowledge or increase in the pace of transfer (put on a commercial basis) of skills.

As a result, attempt was made to include intellectual capital in the balance of enterprise on the basis of the following three assumptions (Edvinsson, Malone, 2001, 39):

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3 A possibility to use intellectual capital effectively has become a center of attention of many firms (among others, ABB, Dow Chemicals, Merck, Hewlett Packard, Telia, Hughes Aircraft, The Canadian Imperial Bank of Commerce, Celemi, Ernst&Young, Posco, KPMG) and organizations responsible for establishing new economic standards and promoting them (Securities and Exchange Commission, OECD, World Bank as well as Accounting Standards Board and Financial Accounting Standard Board). Polish firms also identify such a need although the issues discussed are just in the initial stage of development. Innovative practices are adopted mainly in three sectors: advanced technology (telecommunication, information science, aviation, nuclear industry), as well as financial and business service (consulting firms). Cf. (Strojny, 2000, 17); (Dobija, 2002, 32).
1. Information concerning intellectual capital is additional and complementary but not secondary compared to financial information.

2. Intellectual capital is a non-financial capital and reflects a hidden gap between market value and the book value.

3. Intellectual capital is a kind of obligation (it is lent from interest groups, i.e. customers, employees, etc.) and not property (assets), and hence it must be treated as one’s own capital. According to principles of accounting, goodwill is a counterbalance to these obligations (Figure 3).

Figure 3. Intellectual capital reflected in the balance of enterprise

![Figure 3](image-url)

Source: (Edvinsson, Malone 2001, 40).

Intellectual capital (treated as a sum of human capital and structural capital) together with financial capital create a market value of enterprise (Figure 4).

Figure 4. Scheme showing the goodwill of „Skandia” firm

![Figure 4](image-url)

Source: (Edvinsson, 1997).
Conclusion

It seems that during the coming years, management will become more interested in new sources of competitive advantage that could be gained by a modern business entity, i.e. intellectual capital and intangible assets.

As far as the literature on the subject is concerned, demands are made that more adequate systems of reflecting the potential of enterprise should be applied in the era of knowledge-based economy. Traditional financial reports cover only the value of material and financial resources of a firm which is completely divorced from market value and makes strategic decision-making process more risky as financial data represents only a part of real goodwill.

Thus, the management of enterprise ought to have a set of measures and indicators complementing the financial sphere and in this way conveying the character of modern management of resources accumulated within enterprise (dominated by information and knowledge). Modern system of measurement should involve as wide spectrum of factors creating the value as possible.

Bibliography:

15. Olsson B., (1998), Staff Training and Further Development in Place of Redundancies: A