

Although there is no unified definition of such assets, following Eustace & Hay one may define IAs as non-material factors already contributing to the performance of companies or expected to generate some benefits in future. According to Edvinsson, IAs are resources that add value to the firm but are not visible in its balance sheets. Andriessen & Tissen distinguish five IA groups: 1) assets and endowments, 2) skills & tacit knowledge, 3) collective values and norms, 4) technology and explicit knowledge, 5) primary and management processes. One of the methods of quantifying the company's IAs is its intellectual capital, as proposed by Edvinsson and coworkers.

Main functions of intangible assets are knowledge creation and development, contributing to the company's value, being one of the major factors taken into account when investing, the source of additional income and a potential to generate competitive advantage. In the case of company valuation, the role of IA is also enormous. According to a recent Gartner report, by 2007, more than 90% of the value of the Global 2000 enterprises is created by their intangible intellectual assets, compared to 20% in 1978 and 70% in 1998. Heirman and Clarysse observed that speed of innovation among start-up firms depended on IAs (such as team experience or collaboration networks).

Barth et al. found that IA, in the form of R&D and advertising expenses, increase the likelihood of analysts' coverage of the firm, which makes such stocks more attractive to investors. One should also remember that IA data are complex and difficult to interpret for analysts. At the same time, many companies avoid disclosure of reliable information about their intangibles and official regulations may be needed to ensure issuance of honest IA data, to ensure full access of investors to high-quality balance sheets. 46)

About 50% of all investments of companies are made in the sphere of IAs. IAs also play an important role as income drivers for the companies and, as a result, they become drivers of economic growth and a source of wealth for the entire countries. For instance, the November 2002 McKinsey & Co. study found that while the 40 technology and innovation companies studied could add 10-20% to their operating income by better exploiting IA, only a small number even reached the 0.5% mark. One such underutilized IA (and, therefore, with weak impact on cash flow) is technology licensing by technology-rich companies.

Knowledge of the correct structure and list of intangibles is necessary for their identification and accounting within the companies and further valuation and usage. Sometimes, improvement in IA management (which is beneficial for the company's stakeholders) can be accomplished even with non-quantitative visualization of combinations of strategic targets, knowledge goals and value-adding potentials.

An exhaustive classification of intangible assets or a complete listing of intangible assets have not been developed yet. Several authors (e.g. Brooking, Sveiby, Edvinsson and Malone, Stewart, Roos et al.) tried to describe the structure of IA and to define their main components and the way it affects the market value. However, there is no consensus about the optimal IA structure. Another issue is the fact that meaningful, measurable intangible assets are continuously being created.

Sveiby divides intangible assets into internal (patents, concepts, licenses, administra

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STRUCTURE AND FUNCTIONS OF INTANGIBLE ASSETS IN THE KNOWLEDGE ECONOMY

When economies become to an increasing extent based on knowledge, technology, communications and information, an important trend observed is a shift from tangible to intangible value creation. The trend implies an increasing role of intangible assets (IAs) and of research effort devoted to their identification and valuation. Nonaka and Takeuchi (1995) suggest that only those companies that can create knowledge (in the form of intangible assets) can be successful in today's world.

tive system, organizational structure etc.) and external (brands, trademarks, relations with customers and suppliers etc.). According to Petty & Guthrie, intangible assets of the company include organizational and human capital (internal and external). Brooking singles out the following constituents of intangible assets: market assets, intellectual property assets, human-centered assets and infrastructure assets.

Some researchers, such as Mayo and Ahonen, provide a narrower definition of intangible assets. They claim that IA are constituted mainly by human capital that can be considered from three points of view: as the number of employees, as employees' personal properties and as work community. Perhaps, the best known approach to IA categorization and structuring is the "balanced scorecard" approach. According to it, IA comprise three main perspectives: internal processes perspective, customer perspective and learning and growth perspective. Kaplan and Norton expanded their analyses with the strategy map concept which can be further refined by distinguishing the top-down phase (IA identification process) and the bottom-up phase during which the relationships between IAs of the organization and its financial performance are established.

According to the definition by OECD, intellectual capital is the economic value of two categories of intangible assets of the company: organizational ("structural") capital and human capital. The macro approach uses the categorisation of intangibles proposed by Corrado et al.. They identify three main categories of intangible assets: economic competencies, innovative property and computerised information.

Despite all the contradictions and diversity of approaches, we consider the Reilly & Schweih's categorisation as the best one, although not optimal because it does not include all possible kinds of IAs. According to this approach, the structure of IAs includes ten categories, arranged by the similarity in their nature: marketing-related, technology-related, artistic-related, data process-related, engineering-related, customer-related, contract-related, human capital-related, location-related, and Internet-related.

Another category that is present in other approaches is worth adding here - goodwill- related intangible assets. This addition is reasonable due to the importance of goodwill (e.g., institutional goodwill, professional practice goodwill, personal goodwill, general value of the company as an ongoing entity etc.) in modern business because of its contribution to the positive reputation of the company, thus developing trust and creating better relationships with the customers. As business today is becoming increasingly relationships- based and acquires its value through building relationships, one can argue that goodwill should be one of the major components of IAs.

The main problem that exists in terms of IAs is the difference between general economic and management versus accounting approaches. Moreover, a single accounting approach to the structure of intangibles does not exist, as shown by the comparison of Generally Accepted Accounting Principles of the United States (US GAAP) and the International Financial Reporting Standards (IFRS). Another accounting classification has been developed by the International Federation of Accountants.

Considering the ways of optimization and improvement of the structure of IAs, the

following steps should be taken. First of all, the human capital-related dimension should be extended, comprising the qualifications, competencies, experience and motivation of employees (especially because they can be effectively measured and, therefore, their contributions can be evaluated quantitatively). Further, knowledge-related and organization-related dimensions should be added to the Reilly & Schweih's categories. The knowledge-related (or internal information-related) dimension should include systems of acquiring, storage and development of knowledge within the company and company's know-how in practices of retaining best people and stimulating knowledge-sharing. The organization-related dimensions should include organizational structure, communication systems, reengineering processes and organizational design as intangible assets contributing to the overall effectiveness of the company. Internet-related dimension can be extended to include Intranet systems of the company, and it should also comprise not only website design, but also all information acquired by the website, together with the clients' feedback (e.g. obtained through on-line questionnaires etc.).

Finally, an important step that should be taken is the unification of accounting and managerial approaches to the analysis of the structure of intangible assets. Such unification can be made possible by treating R&D, human and organizational capital that has been internally generated by the company as investment and incorporating it as a supplement to the company's balance sheets. At the same time, one should remember that making IAs fully functional and avoiding what has been called "intangible liabilities" requires maintaining and developing correct employer-employee relationships (Garcia-Parra et al. 2009).

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