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Melania Bąk

Wrocław University of Economics
Faculty of Economics, Management and Tourism
Department of Finance and Accounting
melania.bak@ue.wroc.pl

COPYRIGHTS AND HUMAN CAPITAL AS THE DETERMINANTS OF ACCOUNTING DEVELOPMENT

Summary: The practical application of accounting, its focus on practical goals, as well as the origins and development of accounting 'from common knowledge to scientific knowledge' represent the main prerequisites allowing to define accounting as a practical science. Its development depends on many factors including intangible assets (e.g., copyrights, human resources and human capital). The purpose of the article is to analyse the role played by the broadly approached intangible assets in the process of accounting development as a practical science, both in its scientific and practical dimension, based on the case of copyrights and human capital. Authors' entitlements in the form of personal copyrights protect them and also create a scientific personality and human capital in the scientific/accounting environment. Both copyrights and human capital establish the identity of accounting, its image and reputation.

Keywords: accounting as a practical science, intangible assets disclosed and undisclosed, copyrights, human capital.

JEL Classification: M41.

Introduction

An important determinant, influencing the development of accounting in knowledge-based economy, takes the form of intangible assets, the significance of which has still not been sufficiently analysed and used (both in scientific and practical terms) in the accounting of enterprises and for accounting as a practical science.

Intangible assets remain extensively diversified, which is reflected in the accounting approach to e.g., their disclosure. Intangible assets, subject to legal

regulations are presented in the accounting records, whereas their large part is excluded from the possibility of disclosure in accounting reports owing to their specific characteristics. However, due to the fact that their impact on the functioning of accounting in both scientific and practical dimension remains very important (possibility of their application in economic entities), thus mutual relationships between all intangible assets and other factors having impact on the development of accounting should be investigated.

In the subject literature, especially at the time of nationwide discussion on the science of accounting [Karmańska (red.), 2013], many opinions are expressed regarding the scientific approach to accounting and the factors which create it. The most frequently encountered terms are as follows: accounting as an economic science, the science of accounting, mete-analysis study of accounting, accounting as a social science, accounting as an applied/practical science. The assumption has been adopted in this article that accounting is a practical science the development of which is determined, e.g., by intangible assets both disclosed and undisclosed in the accounting system. Presenting the determinants of accounting development is crucial from the perspective of showing accounting as an actively functioning discipline in both theoretical and practical space, which is continuously evolving and reacts to the signals and needs coming from the scientific environment and various economic units.

The purpose of the article is to analyse the role played by the broadly approached intangible assets (resources) in the process of accounting development as a practical science, both in its scientific and practical dimension, based on the case of copyrights and human capital. The analysis of accounting development, from the perspective of a human being (his/her creative ideas and energy accumulated for action) involved in its evolution may constitute yet another dimension exploring the past, present and future of accounting in the changing environment. The creation and dissemination of scientific knowledge, including its practical applications developed by researchers/academic teachers is possible through their human capital and copyrights. In the times of knowledge-based economy other intangible assets creating the practical dimension of accounting (e.g., customer relations) are also essential in order to meet information needs of stakeholders, to develop competitive advantage based on image and reputation. The analysis of subject literature and the author's considerations in scientific and practical perspective based on deduction method were applied in the article.

1. Accounting as a practical science

Science is considered the type of human knowledge which describes the reality and owes its cognitive status predominantly to the applied methods and terminology. Science covers common knowledge and scientific knowledge[1]. Comprehensive understanding of what science actually represents requires taking into account its following aspects [Heller, 1992, pp. 10-11; Such & Szcześniak, 2006, pp. 9-10]: scientific knowledge (different from common knowledge and other kinds of human knowledge); research and development activities; the method for investigating reality, i.e., research methods; scholars and scientists (scientific community); research and development institutions implementing scientific achievements; scientific awareness.

Accounting is a science because the distinctive characteristics of science are also within its domain. It has its own methodology and terminology, it was created as common knowledge (accompanied the development of humanity in satisfying its information and control oriented needs), which was gradually transformed into a scientific knowledge. The scientific environment of accounting is co-created by: scientists, academic teachers and practitioners (e.g., accountants); the functioning research and development institutions (e.g., universities, accounting associations); organised international and national scientific conferences allowing the exchange of scientific ideas in the field of accounting; developed scientific publications promoting the knowledge of accounting; research areas identified for the future.

The development of scientific knowledge in accounting is confirmed by the actual status of: research work, conceptual work and methodological work. In the case of accounting as a practical science, the interdependence between the scientific dimension and the practical one is essential, which by presenting its current information needs to some extent defines new trends in accounting and partly constitutes the basis for applying the existing and new scientific output.

The possibility for practical application of accounting, its focus on the practical purpose and the creation and development of accounting from common

[1] Common knowledge, the so-called common-sense knowledge, represents the oldest type of human knowledge. It refers to the reality directly related to a man focusing on what is useful for him. Common knowledge presents facts, but does not explain them. Common knowledge does not result from deliberate application of some research method, but represents a by-product of practical human activity. Scientific knowledge not only describes, but also aims at explaining phenomena. It is of theoretical nature. It studies not only the observable characteristics of things, phenomena, but reaches towards deeper mechanisms, reasons of phenomena and laws they are subject to. Science submits all its segments to a specific scientific method by repetitive checking of the established results [Wachowicz, 2016].

knowledge to scientific knowledge, and vice versa, represent major prerequisites allowing the identification of accounting as a practical science. Accounting as a practical science[2] is focused on the practical goal – primarily the provision of information. Therefore, in many definitions of accounting the idea of accounting as information system remains present. The practice of accounting takes the form of an accounting system functioning in economic entities and human activities resulting from the needs of economic life within the framework of this system. The practice of accounting is mainly influenced by [Kamela-Sowińska, 2007, p. 135]: the development of civilisation, the functioning economic system, globalisation, integration, intensified competitiveness, the development of capital markets, the impact of enterprise operations on social and environmental aspects, internationalisation of the exchange of goods/services, raising foreign capital as well as human activity and the related information needs. Thus, the accounting practice revolves around the information needs of stakeholders. In turn, accounting is mainly based on the theory[3] understood as the systematised knowledge about the functioning of accounting, consisting of paradigms, descriptive and explanatory models, principles, rules and methods for procedures related to the object and purpose of accounting.

Having analysed the long history of accounting [Wachowicz, 2016, pp. 43-92] one can infer that it originated as a result of people's information needs, was developed based on practice (e.g., informal notes in any form about one's own assets, receipts and expenditures). The pre-theoretical period of accounting took place until the 18th century when the accounting practice was dominant. Double-entry (merchant) accounting was formed till the 15th century. In the period from the 16th till the 18th century the so-called common knowledge prevailed and the first legal regulations were developed, based on which the accounting policy was established. It was not until the 19th century when the scientific background of accounting was developed. The perception of accounting as a science can be observed as late as the second half of the 19th century [Szychta, 2015, p. 11], since before it was recognised as a form of craft, human activity or performing certain operations. The first half of the 20th century is considered the time of particular development of accounting as a science. Unfortunately, the 21st centu-

[2] Aristotle's division of sciences: 1) theoretical sciences (physics, mathematics, logic, philosophy), 2) practical sciences (ethics, economics, politics), 3) creative sciences (poetry, rhetoric, art) [Lipnicki, br.].

[3] According to K. Karpiński [2006, pp. 256-257], the theory is defined as: 1) a systematised (logically or objectively) system of terms, 2) a set of directives guiding research, 3) a simplified description (defined as a model), 4) a set of general and detailed sentences systematised by logical or objective relationships.

ry is the time of stagnation for the development of accounting theory and the hegemony of accounting policy in the form of increased standardisation of accounting principles and the reported information needs by different groups of stakeholders.

Accounting aims at describing economic reality by means of e.g., subject oriented method (refers to a separate organisational unit) and balance sheet method (refers to the duality of economic phenomena description and maintaining balance sheet equilibrium). Accounting is co-created by practice and science, which constitute two mutually supplementary parts defining the essence of accounting. "Accounting as a science is an economic discipline within which theoreticians measure and analyse the status of capital changes and other economic parameters, characterising an economic situation and periodic results of an organizational unit using a solid set of principles, with the non-negotiable and dominant principle of duality. The measurement of economic parameters, i.e. determining their value is performed in a prospective and retrospective perspective, using a unit of capital measurement and the measurement results are communicated to those interested by means of standard reporting forms" [Dobija & Jędrzejczyk, 2011, p. 14].

Accounting is a science due to its methodology and an applied science as it is goal oriented [Jarugowa, 1991, pp. 12-13]. It has its own theories based on scientific methodology and its encoded language [Kasperowicz, 2015]. These theories find, on the one hand, practical realisation and, on the other, are developed as a generalisation of practical procedures. The term 'accounting' should be approached in two ways [Szychta, 2015, p. 16], as: 1) practical activity (practice of accounting), i.e., purposeful, specific type of activity and procedures performed in economic entity, and 2) scientific knowledge, representing a social, applied science included in the field of economic sciences.

In the early period of accounting evolution it was considered an economic science [Hellich, 2006, p. 99], closely related to business activity, hence the term 'applied science' [Sawicki, 2013, p. 221]. The recent years have shown that the scope of accounting has been extended by a social dimension[4]. M. Dobija emphasises that the designation of socio-economic accounting is the system of knowledge covering traditional accounting extended by the social dimension [Dobija, 1997, p. 30]. However, attention should be paid to the concerns ex-

[4] Accounting is considered a social science because it participates in the study of the structure and function of the history of society, its culture and developmental patterns. Accounting is a socially organized activity, it investigates the relationships and events of a social nature and creates information used by the public for activities resulting in social impacts.

pressed by A. Kamela-Sowińska [2013, pp. 309-310] about adopting the negative characteristics of social sciences by accounting, which primarily refers to: the politicisation of accounting, absence of the sufficient range of instruments to describe the reality, social recipients of a financial statement, formal inclusion in the field of social sciences.

To sum up, accounting[5] can be classified as a science because it offers the following attributes [Wielgórska-Leszczyńska, 2013, pp. 178-179]: it has its own theories, its history presenting the status of accounting in different countries and its development over different periods of time, a well-established measurement of values (in monetary units) based on principles and concepts (incl. changes occurring in economic environment), methods and rules for presenting and explaining business processes, universal terminology describing economic events based on the principle of duality, it is an information system providing useful, reliable, comparable and clear information. Moreover, accounting is a specific discipline of economic sciences as the only one to obtain a normative dimension. Its regulations, in the modern world, do not deal with the detailed solutions and accounting techniques, but the principles of the conceptual accounting system, i.e. measure and communicate financial information to different users of economic reality. M. Dobija [2010, p. 26] presents an opinion that accounting is a scientific discipline, i.e. the discipline belonging to science, characterised by a well-thought-out system of theory and practice.

2. Intangible assets in accounting – classification and characteristics

The emergence and development of accounting is mainly determined by: human activity/functioning and the existing information needs, which were subject to significant transformations over the centuries. Initially, the information originating from the first forms of accounting referred to the status of settlements, cash receipts or contributed equity. Currently, stakeholders (both external

[5] In the United States accounting is referred to as an independent scientific discipline, probably due to the emphasis on the significant role of accounting and its theoretical output. In Poland accounting belongs to economic sciences, whereas in Germany to management science. The diversity in the classification of accounting among scientific disciplines in particular countries results from different awareness and approaches as well as the legislation referring to accounting and its theoretical output. The discussion about accounting as a scientific discipline was initiated in the United States of America and in Western Europe. The famous thesis, voiced by J.S. Demski [2006] at the congress organised by the American Accounting Association in August 2006, stating that today's accounting is not a scientific discipline resulted in an international discussion focused on this problem.

and internal) require very different information needs, often extending beyond the accounting system framework. The broadly approached intangible assets (and their intellectual capital) are the example of information extension in the accounting system. In the era of knowledge-based economy the information on intangible assets, often limited to the acquired proprietary copyrights (disclosed in accounting) is insufficient. Information needs focus on knowledge[6] (intangible assets undisclosed in accounting), the application of which allows to set free the ingrained energy (intellectual capital) to achieve competitive advantage as well as financial and business success. Table 1 presents (for comparison purposes) the essence and characteristics of intangible assets both disclosed and undisclosed in the accounting system. Intangible assets, which are not subject to accounting rules and standards, as well as the balance sheet law regulations can neither be presented nor disclosed in accounting. They should be interpreted as knowledge-based intangible assets, which remain the source of future profits for an enterprise influencing its market value creation. In turn, intangible assets disclosed in accounting are regulated by balance sheet law, and in particular their scope, valuation and presentation form. They represent the component which co-create balance value of an enterprise. Even those these assets differ from each other it can be inferred that they co-dependent (e.g., human resources and their capital participate in development work) and co-create an economic entity's wealth.

Table 1. Comparative characteristics of intangible assets disclosed and undisclosed in accounting

Scope	Intangible assets disclosed in accounting	Intangible assets undisclosed in accounting
1	*2*	*3*
Regulations	International standards, EU directives, Accounting Act [dated 29th September 1994]	The rules of market economy, economics
Accounting dimension	Scientific Practical: primarily the accounting policy applied in enterprises	Practical Scientific (human capital) Creativity and volunteering in meeting stakeholders' information needs
Approach to accounting	Disclosed in accounting	Undisclosed in accounting
Information type	Financial information	Non-financial information

[6] Knowledge is, increasingly frequently, perceived as the component of enterprise assets. Knowledge can be defined as 'useful information', which allows taking up correct decisions and making significant input in creative thinking processes occurring in an enterprise [Dworak, 2012, p. 18]. Knowledge is referred to as wealth and power. According to S. Kwiatkowski [2001, p. 245], "knowledge represents information and experience allowing adaptation to environment and development".

Table 1 cont.

1	*2*	*3*
Valuation	Historical value (purchase price, manufacturing cost)	Fair value (market price)
Value adjustment	Mainly depreciation and impairment	Determining value increase/decrease taking market factors into account
Disclosure form	Financial reporting	Voluntary reporting (only partly mandatory)
Relationship with the accounting terminology	Subject to balance sheet method, accounting rules and coding (account records)	Not subject to accounting methods and rules. The information presented in reports are taken from accounting (accounting records)
Impact	Balance sheet value of an enterprise	Market value of an enterprise
Scope	Open catalogue, but with specific examples (e.g., according to the Accounting Act): Acquired proprietary rights: − copyrights, related copyrights, licences, concessions, − rights to inventions, patents, trademarks, utility model, decorative patterns, − *know-how*, i.e. the right to use knowledge in industrial, commercial, scientific or organisational fields. Acquired goodwill. Costs of completed R&D work	Open catalogue with various examples adequate for a particular entity. Proposed examples: − relationships with customers, − image and reputation, − brand, − identity, − organisational culture, − human resources and human capital, − innovations
Source of origin	Acquired (except the costs of completed development work)	Created on one's own
Characteristics	Assets of useful life longer than one year. Controlled by an entity. Assets presenting a reliably defined value. Created as a result of past events, which shall bring future economic benefits to an entity	They are knowledge-based, without any physical form. They are not fully identifiable. They are unique for each enterprise (Itami & Roeh, 1987). They originate from diverse categories of different nature and are mostly divisible. They have the ability to create cause and effect relationships between themselves and material assets. They are a source of future benefits. They represent a growing gap between an enterprise market value and its balance sheet value
Nature of capital	They have their source of financing in the form of equity and foreign capital	The capital (energy) they present is of intellectual nature, which if appropriately used (released) in the future allows achieving benefits
Orientation	Result oriented, making a profit	Market oriented, achieving the best position on the market among competition
Advantages	Specified actions in relation to purchased intangible assets	Extension (supplement) of financial information. Information credibility improvement. Reducing uncertainty regarding an enterprise future. More accurate definition of an enterprise market value. Creativity among employees

Table 1 cont.

1	*2*	*3*
Disadvantages	No references to self-generated components affecting future financial results (e.g., brand)	Bias and manipulation for one's own valuation and disclosure benefits. Stimulating unethical behaviour among employees. No information about intangible assets reduces, e.g., the possibilities for raising capital. Possibility of using the information by competition. Reducing competitive advantage as a result of disclosing trade secrets

Intangible assets disclosed in accounting should be primarily associated with the functioning of accounting in an economic entity. Intangible assets undisclosed in accounting can refer not only to enterprise activities (e.g., its image development), but also to accounting from the scientific perspective (e.g., human capital contributes to publishing scientific studies, whose authors are subject to copyright protection, ensuring the evolution of accounting).

The acquired intangible assets (such as copyrights) disclosed in the company's accounting records, in accordance with the legal regulations, do not provide major contribution to the development of accounting, however, they represent one of the assets' components, which ensures running business activities in an enterprise. From the perspective of accounting development as a practical science copyrights are of particular importance (at the disposal of the scientific accounting environment and its practical application), as well as human capital (knowledge, experience, skills of scientists and practitioners). The possibility to take advantage of the accounting scientific output worked out over the centuries by individuals creates the identity, brand, image and reputation of accounting[7]. It also allows establishing correct relationships with stakeholders and investigate new research areas to develop innovative accounting instruments in order to meet modern needs of both scientific and practice oriented environment.

3. Copyright and human capital as the factors creating the development of accounting in a scientific and practical dimension

Copyright and human capital play a particular role in the development of accounting as a practical science, since they are inextricably combined with a human being and his/her intellectual activity. The development of accounting

[7] More about this problem in the study [Bąk, 2015, pp. 45-54].

in scientific dimension is co-created by various creative studies (products of human mind), which are currently protected by copyright. Copyright means granting an author of a piece of work the exclusive right to reproduce, adapt and distribute copies [Zaborowska, 2009, p. 23]. In accordance with Polish legislation[8], the subject matter of copyright remains every manifestation of creative activity of an individual nature, specified in form, regardless of its value, allocation or manner of expression (work). The synthetic characteristics of copyright are presented in Table 2.

Table 2. Copyright characteristics – selected problems

Copyright – historical outline
Its origins and development were influenced by: cultural conditions (e.g., in China, ancient Greece and Rome), legal conditions (e.g., Jewish law, Islamic law), social conditions, privileges for printers, booksellers and authors. The origins of copyright derive from print privileges. The protection of copyright was developed at the end of the 19th century in France. The development of copyright idea is divided into four major periods: − privileges (14th-18th century), − national legislation (1710-1886), − internationalisation of copyright (1886-1994), − globalisation (since 1994). The term 'copyright' was used for the first time by Augustin Charles Renouard in1838 and 1839 to replace the existing phrase 'literary and artistic property'
Copyright – functioning systems
The continental system distinguishes two models of copyright content construction: − dualistic model (France, Italy, Poland) – separation of two independent copyrights: proprietary and personal copyrights, − monistic model (Germany) – personal and proprietary copyrights are referred to as the components of a uniform, non-transferrable right of the creator. A separate Anglo-Saxon copyright system (USA, Australia) approaches copyrights as a group of proprietary copyrights aimed at protecting interests of the creator and ensuring the development of science and art. Copyright in the United States facilitates the recovery of damages in a lawsuit for copyright infringement
International standards in copyright law
1886 Berne Convention for the Protection of Literary and Artistic Works – the first international agreement on respecting copyright between sovereign countries. 1952 Universal Copyright Convention adopted in Geneva – developed by UNESCO, was to offer an alternative to the Berne Convention. Its aim was to ensure multilateral protection of copyright without the need of joining the Berne Convention. It follows the principle of mutual respect for copyright and prohibits discrimination against foreign authors 1996 The World Intellectual Property Organization (IPO) Treaty on copyright (UN specialised agency) deals with the coordination and regulation of intellectual property protection and the provision of legal and technological assistance. The objective of the organisation is to extend the knowledge on the protection of intellectual property rights on an international arena and to ensure administrative cooperation in the enforcement of intellectual property rights and copyrights.

Source: Based on: [Górnicki, 2013; Traktat światowej organizacji własności intelektualnej, 1996; www 1].

[8] The Act of February 4, 1994 on copyright and related rights, Journal of Laws 1994, No. 24, item 83, uniform text Journal of Laws 2016, item 666.

The dualistic model functioning in Poland distinguishes the following types of copyright: personal and proprietary (Table 3). Having considered the essence of these copyrights from the perspective of accounting development, both the authors of individual works and accounting as a science should be taken into account. Personal copyright, on the one hand, protects and, on the other, creates the author of the work (his/her scientific personality and intellectual capital in the environment), since when functioning within the framework of a given scientific discipline he/she remains its integral part and acts for its benefit. The essence of proprietary copyright allows disseminating a piece of work in the environment by an authorised person. As a result a wider group of addressees is offered an opportunity to get acquainted with the creative output of individual authors, who can stimulate others to perform creative work for the benefit of further development of accounting science and its practical application.

Table 3. Copyright – personal and proprietary

Copyright	
Personal	They protect unrestricted over time and irrevocable or non-transferable author's relationship to the work, and in particular the right to: 1) authorship of the work; 2) mark the work with one's own name or nickname or to share it anonymously; 3) inviolability of the work's content, form and its fair use; 4) decide about the first release of the piece of work to the audience; 5) supervise methods of the work provision. They are permanently associated with the author and have an unlimited duration. They can be approached as special personal rights of the universal civil law. The right to work authorship (sometimes referred to as the right to work fatherhood) is a fundamental personal right of the creator. It primarily protects him/her against the attribution of authorship by unauthorised persons
Proprietary	It grants the exclusive right to use and dispose of the work in all exploitation fields and to receive remuneration for its usage. The scope of proprietary copyrights provides that the creator has an exclusive right to use the work in all fields of its exploitation. In accordance with the copyright rule the work can only be used or disposed of by an authorized person. The authorised person is the copyright holder in the first place. Such person (or other entity) may then grant rights to others to use the work under a license agreement or an agreement transferring copyrights to the work. Proprietary copyrights expire most often after 70 years from the death of an author

Source: The Act of February 4, 1994 on copyright and related rights, Journal of Laws 1994, No. 24, item 83, uniform text Journal of Laws 2016, item 666.

Enterprises acquiring proprietary copyrights in accordance with balance sheet law achieve economic benefits in the course of running their business and disclose them as intangible assets in the entity's balance sheet. Similarly, one can assume that the copyrights of individual creators (scientists) in accounting can be considered as intangible assets in accounting which allow achieving future benefits in terms of scientific and practical development, such as e.g., establishing the identity, brand, reputation and image of accounting.

Copyrights do not protect discoveries, ideas, procedures, methods and principles of operation, mathematical concepts, but the way they are expressed. For example, Luca Pacioli published in 1494 the work entitled *Tractatus XI de Computis et Scripturis, Summa de Arithmetica, Geometria, Proportioni et Proportionalita* [Pacioli, 2007], to which personal copyrights may be claimed, due to his own reflections presented in it (as a theoretical generalisation), his creative work based on the universally functioning principle of double accounting, developed and used by Italian merchants and bankers. In accordance with the legislation in force the same principle of double accounting is not copyrighted. Furthermore, the analysis of accounting history allows concluding that a single author of this particular rule has not been identified. It is assumed that it was created over the centuries as a result of practical work which involved many creative minds. As to the way of expressing it, one must keep in mind that specific methods, principles, concepts have their authors, and if in the newly created work the average "John Smith" describes, for example, E. Schmalenbach's dynamic balance sheet theory claiming that he created it, such behaviour should be branded and considered unethical.

Researchers/academic teachers as authors of scientific studies (e.g., books, articles) are covered by a non-transferable personal copyright. In turn, the proprietary copyright (concerning the dissemination of work) refers to their granting a licence (e.g., to a publishing house, university) based on the 'Author's statement' to use the work with the right to sublicense in the country and abroad, in whole or in part, and also to make all or part of the work available to the third parties. The statement also specifies e.g., the fields of the work exploitation the proprietary copyrights of which were transferred free of charge to the publisher.

The copyright law protects only the form (e.g., the text of the accounting manual, which can be considered as a literary work), rather than the news, information, statements and discoveries in a given field of study. Therefore, one of the more difficult problems to determine is deciding whether the 'manifestation of creative activity of an individual nature' did occur, because only such work is subject to protection. Not every printed word is a copyright protected work (e.g., science books usually contain a lot of theorems, scientific truths and not much creative contribution).

The issue of copyright protection is particularly related to the reprehensible act of misappropriation of another person's work (or its part) by disseminating it under one's own name (unchanged or modified), which is referred to as plagia-

rism[9]. Plagiarism is an intellectual theft, identifying, proving and punishing which is especially important for preserving the 'truth and integrity in science' (including accounting approached as a practical science). Plagiarism should disqualify an author completely or partially from the participation in scientific environment. Every research worker should respect the ethics and care for the credibility and integrity of his/her scientific achievements in the name of common good, i.e. accounting as a science. For this reason it is also important to use a citation correctly in the text of an article or a book. A citation, in the understanding of copyright, occurs only when a fragment of someone else's work is incorporated into the personally created work. Incorporation should be reduced to 'extracts of the work' or entire 'small works'. A citation should be recognisable. It should be marked in the way which allows a reader to be aware when he/she reads the text by the author using the citation and when with the cited text. Using a citation is justified when it serves clarification, critical analysis or teaching.

In the event of copyright infringement under the existing legislation, an author may require that such action be discontinued, he/she may demand a public statement in appropriate form and content, claim the infringement effects removal, claim cash compensation or payment of an appropriate sum of money for the specific social purpose defined by the creator.

Academic teachers are subject to three types of liability in the event of copyright infringement: disciplinary, criminal and civil liability. From the perspective of accounting as science the disciplinary liability is important and the course of copyright protection procedure in the academic environment, if an academic teacher violated the duties or dignity of this profession. The disciplinary proceedings representative initiates explanatory proceedings ex officio[10] if an academic teacher is accused of committing the act of copyright misappropriation or misrepresentation as to the authorship of the entire or part of another person's work. Plagiarism liability provided for in the Higher Education Act [dated 27th July 2005] has the most extensive and severe character in relation to academic

[9] Plagiarism always represents an act of personal copyright violation (the right to disclose authorship), it does not always have to involve copyright infringement (the right to receive remuneration).

[10] The disciplinary proceedings representative initiates an investigation in accordance with Higher Education Act dated 27th July 2005 (Journal of Laws of 2016, item 1842) and the Regulations by the Minister of Science and Higher Education dated 17th October 2014 on the detailed preliminary investigation and disciplinary proceedings with respect to academic teachers and the manner of disciplinary penalties execution and expungement (Journal of Laws of 2014, item 1430).

teachers. It can result in the termination of employment and annulment of the title of professor, PhD or habilitated doctor by the competent authority. In addition, an academic teacher bears a disciplinary responsibility based on which he/she can be penalised and the disciplinary commission for academic teachers can apply one of the following disciplinary actions against him/her: warning, reprimand, reprimand with deprivation of the right to execute managerial functions at a university for the period of up to five years, deprivation of the right to perform the profession of academic teacher permanently or temporarily. The analysis of plagiarism cases among university teachers shows that the most frequently applied disciplinary punishment in case of plagiarism is the penalty of a reprimand.

Promoting copyright protection and raising awareness of these rights importance for the author in scientific/academic circles, but also for accounting as a science, is absolutely crucial. In the age of computerisation and the Internet it is easy to commit plagiarism, but it is also easier to detect it and initiate the process of reaching the truth. Reliability and credibility required from accounting practitioners responsible for company accounting should also remain the domain of scientists/academic teachers in their creative work. In the atmosphere of mutual respect for copyright, new/great works are created, which determine the development of accounting in both scientific and practical dimension.

A research worker whose study was plagiarised can claim his/her personal copyright in the scientific environment. However, based on the literature review it can be stated that this is not an easy process to carry out and it is not always finalised with the victim's satisfaction. It often happens that such cases are deliberately outdated or discontinued (indolence in their clarification) due to their minor harm (which is interpreted by the commission as unintentional and unconscious act). Several other shortcomings of this process can be listed, e.g. [Sieńczyło-Chlabicz, 2010, p. 141]: no stigmatisation of plagiarist behaviour, including ostracism from the academic community; lack of strong response to plagiarism from both academic environment and university authorities; required introduction of certain legislative changes regarding explanatory and disciplinary proceedings against academic teachers (e.g., appointing a committee with relevant competencies in a particular scientific field/discipline, exact specification and adherence to timeliness, elimination of high discretion of disciplinary proceedings representatives and disciplinary commissions in adjudicating disciplinary penalties; developing uniform rules determining the adjudication of particular disciplinary penalties). To sum up, ineffective personal copyright protection procedures, covering academic teachers in higher education institutions,

have negative impact on the quality of science, mutual interpersonal relationships in academic community and constitute a form of tacit consent to professional ethics non-compliance.

Copyrights protect authors and create their scientific individualism and human capital in the scientific/accounting community. Personal copyrights are inextricably linked to a person/author of the piece of work and his/her human capital, which consists of acquired knowledge, learned skills and gained experience as well as personal predispositions. Human capital represents the energy contained in people acting and creating for the benefit of accounting. Each 'accounting individual' (a scientist, an academic teacher, an educator, a practitioner) develops his/her individual capital, however, they all contribute to human capital in accounting, which decides about its strength and quality.

Human capital has always played a decisive role in the development of accounting, however, the awareness of its existence was noticed and appreciated relatively late, not until the end of the 20th century. An increasing interest in human capital was observed when it was identified as one of the major components of intellectual capital in an enterprise. In the opinion of M. Dobija & M. Jędrzejczyk [2011, p. 7]: "[...] accounting as the work of human intellect has existed since the dawn of civilisation and was the essence of economic thought necessary to solve the problem of collective work aimed at increasing social productive capacity for persistence and survival". Table 4 presents the characteristics of human capital taking into account the selected issues.

Table 4. The characteristics of human capital – selected problems

Problems	Characteristics
1	*2*
The origins of human capital theory	Based on research and studies by T.W. Schultz, G.S. Becker and J. Mincer, carried out independently [Kunasz, 2004, p. 435]. Developed in the 60s of the 20th century. According to the assumptions, human capital was introduced to economics as the most important factor of production, decisive for the development of enterprise, national economy and the world
Views on human capital	Examples by Domański [1993] and Kunasz [2004, pp. 433-442]: T. Schultz claimed that major part of consumption can be regarded as investment in human capital, as e.g., expenditure on education and healthcare and also gaining experience at work. A. Smith was of the opinion that the capital embodied in a human being is one of the components of fixed capital, alongside machines, production tools, utility buildings, agricultural investments. Health, knowledge and acquired skills were considered personal property of a human being, and the latter as the property of the society. W. Petty, as first, defined a human being as a resource which can be invested in. He highlighted the inexhaustible nature and potential development of human resources, emphasising the role of qualifications, ambition, self-esteem, fulfilment of desires, and improvement of social position

Table 4 cont.

1	*2*
A human being and his capital	Human capita is a part of a human being and can be accumulated by investing in oneself. Approaching a human being in the theory of economics is of dual nature [Domański, 1993, p. 28]: 1) a human being is approached as capital generating profit, 2) capital covers skills, abilities, knowledge, energy and health accumulated in a human being resulting from specific outlays. Human capital represents value both for an employee and for an economic entity that benefits from this capital under certain conditions
Human capital in accounting	The interpretation is based on the principle of dualism (Human resources = Human capital) and the essence of the nature of capital. According to M. Dobija & D. Dobija [2003, p. 24]: "[...] capital is essentially the material-based energy". Thus, human capital is the energy accumulated in people, which is set free in the course of their work and serves achieving economic benefits in the future. Human capital consists of physical human capital, capital from professional education, capital from experience, intellectual capital [Dobija, 2005, p. 216]
Human capital in an enterprise	Human capital is the main component of intellectual capital in an enterprise. L. Edvidsson and M.S. Malone [2001, p. 17] believe that human capital is the combined knowledge, skills, innovation and ability of individual employees to perform their tasks efficiently. Human capital (in particular the one featuring creativity) guarantees economic growth, enterprise development and greater competitiveness. It is the source of innovation and know-how in an enterprise

T.W. Schultz pays attention, in his studies, to investments in human capital, which represent direct expenditure on education and health and internal migration, in order to benefit from better working conditions [Schultz, 2014, p. 93]. The theory of human capital implies that a human being is the most valuable asset of enterprise resources and the creator of knowledge needed in the times of market economy and competitiveness. T.W. Schultz believed that every man has inborn and acquired skills, whereas human capital should be approached in terms of qualities acquired by population presenting value, which can be strengthened by appropriate investments [Schultz, 1981, p. 97]. Human capital theory refers to employees as assets rather than a source of costs. It highlights the role of investing in employees, which returns to an individual in the form of benefits or creating a certain value for it. Therefore, human capital represents value for a worker him/herself and also for an individual who benefits from this capital under certain conditions. The role of human capital is emphasised primarily in the processes of economic growth and competitiveness.

The problems of human capital in Polish accounting have been investigated for years by M. Dobija and D. Dobija [Dobija, 2005, pp. 203-228]. M. Dobija [1998, p. 71] claims that "A human being who can be employed has his/her own value, independent of an organisation, thus contributing to the stream of its profits", which is crucial from the point of view of an employee's importance for an enterprise, and from the perspective of the discussion presented in this article the importance of human resources is significant for accounting.

Human capital is the major determinant which influences the development of accounting, whereas outstanding scientists and accounting practitioners can be compared to accounting creators[11]. Human capital in accounting has the power to shape its identity (uniqueness, identification), reputation (e.g., fulfilment of expectations, ethical behaviour), image (e.g., reliability), innovation (e.g., creativity, novelty), organisational culture (e.g., organizational structure) and relations with stakeholders. Owing to human capital accounting was established, endured various epochs and is still guarding the developed scientific and practical output, while 'accounting people' and their capital represent the wealth of accounting. It is impossible to list all the people who contributed to the development of accounting. In the history of accounting practitioners are most commonly nameless, which does not mean unimportant. They are the ones who guarantee the continuity of accounting in an enterprise and most often identify new needs/goals for its evolution. Among the world's researchers, who have made a significant contribution to the development of accounting the following can be distinguished, e.g.: L. Pacioli, B. Cotrugli, J. Cerboni, J. Savary, H.V. Simon, J.F. Schar, A. Marchal, E. Schmalenbach, R. Mattessich, R.S. Kaplan, R. Cooper, Y. Ijiri. In case of Polish accounting the significant contribution was made by, e.g.: T. Lulek, W. Malc, T. Peche, B. Siwoń, S. Skrzywan, E. Burzym, K. Sawicki, W. Brzezin, A. Jarugowa, M. Dobija, J. Gierusz, A. Karmańska, M. Gmytasiewicz, A. Szychta, Z. Luty. Each of the aforementioned individuals has created his/her own, unique capital, still 'working' for the science and practice of accounting, which remains an inspiration for further creative action.

The development of accounting is possible owing to an individual human capital influenced by, e.g.: motivation (professional and private), desire for prestige and career promotion, well thought over investments/expenses (e.g. training, upgrading qualifications), creativity in action [Blaug, 1976, pp. 827-855]. In case of practitioners (e.g., accountants) their capital is primarily ingrained in practical knowledge and its application skills, whereas for scientists/academic teachers scientific knowledge, creativity and openness in creative thinking are crucial. The conditions in working environment, workplace atmosphere and targets set by a supervisor are also important.

The following attributes co-create human capital in different proportions for an individual (depending on personality traits, external and internal factors): education, reputation and image in the environment, practice/experience, knowledge and creativity in thinking and acting, talent, skills, involvement, hard

[11] More about this problem in the study [Bąk, 2014, pp. 271-285].

work, ingenuity, cooperation, moral virtues (e.g., honesty, integrity, credibility, reliability, kindness, selflessness), noble virtues (e.g., politeness, prudence, tolerance, tactfulness). The quality of human capital and its structure, consisting of the listed features, also depend on the specific nature of the performed profession. Using human capital in accounting is connected with performing many different activities by the 'accounting people' (the examples are presented in Table 5), which may be either creative or reproductive.

Table 5. Human capital used in accounting as a practical science

Human capital in accounting approached as practical science	
Subjective structure taking into account human factor	Examples of using human capital
Scientists/research workers	Conducting research in accounting. Creative analysis of accounting problems. Developing scientific publications in accounting. Organising scientific conferences and exchange of opinions in the scientific community
Academic teachers/educators	Delivering authorial lectures covering accounting problems at universities. Teaching classes/workshops in accounting. Conducting one-time and periodic trainings for accounting practitioners (updating and expanding knowledge)
Accountants/accounting staff	Bookkeeping in accordance with balance sheet law. Account assignment and recording accounting operations. Preparing financial statements, internal reports, tax returns. Cooperation with financial institutions
Accounting executives	Making strategic and operational financial and accounting decisions in the area of financial and managerial accounting. Establishing mutual relationships between employees at different levels
Statutory auditors	Audit and review of financial statements for compliance with accounting principles (policy) and reliability in disclosing property and financial situation and also the financial result of an audited entity. Provision of other certification services, e.g., audit at the establishment of a joint-stock company and share capital increase
Auditors	Assessment and verification of accounting issues, taking into account business, operational and financial risks and the entity's environment. Consultancy and improvement in keeping an entity's accounts

Over the centuries the evolution of accounting was possible owing to human activity, and its main purpose was to satisfy the information needs about the owned wealth and its changes. Therefore, human capital participates in a variety of processes in an enterprise (e.g., purchase transactions, production, sales, research) whose material and financial consequences are included in the accounting system. Creativity in human thinking and acting is particularly important for the development of accounting because it is crucial for the development/ /modification of appropriate instrumentation for accounting purposes as well as its implementation and application in the accounting practice.

Summing up the reflections on intangible assets, determining the development of accounting approached as a practical science, it can be concluded that their role is frequently ignored/underestimated, particularly with regard to copyright protection of and human capital. There is a mutual dependence between copyrights and human capital. Both quality and creativity of human capital (knowledge, skills, etc.) involved in the development of accounting can be manifested, e.g., in the form of preparing creative scientific studies subject to copyright in accordance with appropriate legal regulations. Copyright, in turn, should protect the creators, their ingenuity/originality, which allows developing their personality and scientific position in the accounting community.

Intangible assets are particularly important in the development of accounting as a practical science. The scientific output of accounting and its practical application in an enterprise, developed over the centuries, have created the identity of accounting, its image and reputation. The possibility to use appropriate accounting tools (e.g., asset valuation methods, information disclosure forms) in an enterprise allow constructing the accounting brand, relationships with stakeholders (e.g., clients). Human resources and their capital play an important role in the mutual relationships between intangible assets. Human capital creates accounting in the scientific and practical sphere, taking into account signals coming from the internal environment (e.g., management objectives) and the external one (e.g., knowledge-based requirements of market economy). The quality and value of human capital in accounting is primarily derived from knowledge, skills and creativity of people involved in the functioning of accounting.

No possibility to present certain intangible assets in the accounting records and to disclose them in the financial report of an enterprise accounting system (Table 1) is a challenge for the modern generation of accountants, especially scientists. Therefore, it is important to support the development of creative human capital and to protect, by copyrights, the innovative solutions in terms of interpretation, valuation, presentation and disclosure of these assets in the accounting system.

Conclusions

The following conclusions can be drawn based on the subject literature review and the author's analysis of scientific and practical nature: 1) accounting is a practical science, as confirmed by its attributes characteristic for both science

and practice, 2) the development of accounting is determined by various factors, among which an important (although often underestimated) role is played by the broadly approached intangible assets, for which the fundamental differentiation criterion can be distinguished: disclosed and undisclosed in the accounting system. These intangible assets are created by scientific and practical dimension of accounting, 3) both personal copyrights and proprietary copyrights are important for the development of accounting. Personal copyrights should protect authors and their relationship to a piece of work and co-create an author's scientific personality, contributing to human capital strengthening. In turn, proprietary copyrights most often passed on to the third parties offer an opportunity to disseminate the work (e.g., scientific knowledge) in accounting environment, 4) human resources in accounting (scientists, academic teachers, practitioners) present human capital made up of knowledge, skills, experience and personal predispositions. Human capital creates identity, image and reputation of not just a specific person, but also of accounting, 5) for the development of accounting as a practical science, plagiarism (so-called intellectual theft) represents a particularly negative phenomenon thus detecting, proving and punishing it is crucial to preserve integrity and reliability in science, 6) mutual cause and effect relationships occur between individual intangible assets allowing thorough exploration of accounting development in the modern world (e.g., personal copyrights vs. human capital, accounting identity and academic output by individual authors of scientific works), 7) copyright protection and taking proper advantage of human capital are fundamental for the reliable and fair scientific activity.

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