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**BEHAVIORAL DETERMINANTS OF THE BUSINESS
MODEL IN THE FINANCIAL STATEMENT –
ON THE EXAMPLE OF SELECTED INDUSTRIES**

**BEHAWIORALNE DETERMINANTY MODELU
BIZNESU W SPRAWOZDANIU FINANSOWYM –
NA PRZYKŁADZIE WYBRANYCH SEKTORÓW**

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Summary: The business model is a new subject in accounting research. It results from a variety of factors occurring in a business environment, but also from the impact of behavioral factors influencing the decision-making process of an individual. Research goal: to identify the scope of disclosures about the business model in financial statements and the impact of behavioral factors on reporting on the business model. Research conclusions: The scope of disclosures about the business model in financial reports, their structure and presentation are significantly diversified. It makes it difficult to identify behavioral factors in this area. There is also lack of disclosures on the impact of business model on accepted accounting solutions in entities.

Keywords: business model, accounting, financial report, behavioral determinants.

Streszczenie: Model biznesu stanowi nową tematykę w badaniach rachunkowości. Jest on wynikiem wpływów otoczenia, ale także działania czynników behawioralnych, oddziałujących na proces decyzyjny człowieka. Cel badawczy: rozpoznanie zakresu ujawnień na temat modelu biznesowego w sprawozdaniu finansowym oraz wpływu czynników behawioralnych na raportowanie w zakresie modelu biznesu. Wnioski badawcze: zakres ujawnień o modelu biznesu w raportach finansowych firm, ich struktura i prezentacja są znacznie zróżnicowane. Utrudnia to identyfikację czynników behawioralnych w tym zakresie. Brak jest także ujawniania wpływu tego modelu na przyjęte rozwiązania rachunkowości jednostek.

Słowa kluczowe: model biznesu, rachunkowość, sprawozdanie finansowe, determinanty behawioralne.

1. Introduction

The choice of a business model (BM) in modern economic reality is an essential factor determining the financial success of an enterprise. In the theory and practice of management, the issue of BM has been present for a long time. A new area of research into this subject focuses on the relationship with the accounting system, in particular the issue of reflecting business models and their transformations in the financial and management reporting of an organization. The impact of business models on methods and accepted accounting principles has also been examined by researchers.

The shaping of business models is the result of the impact of many factors, among which the most often mentioned are those from the business environment. However, one should not overlook the fact that shaping business models is also the effect of the decision-making process implemented by individual. This causes that the process is also susceptible to the impact of behavioral factors. An interesting research question seems to be whether behavioral factors also influence the scope of disclosures in the BM in the financial statements. Against the background of the presented context, the authors formulated a scientific goal to identify the scope of disclosures in the business model in the financial statements and the impact of behavioral factors on reporting in the business model. The issue of disclosures in shaping the BM is particularly important for further research into the evolution of the accounting system, including integrated reporting.

In order to achieve the indicated goal, the methods of the literature studies and case studies were used. In order to answer the research question regarding the impact of behavioral factors on reporting disclosures in the BM, an analysis of financial reports and other documents published by selected companies, mainly implemented strategic activities, was carried out.

2. Business model as a research innovation in accounting

The business model is not an innovation in the theory and practice of management. In principle, we are dealing with a certain notion in the conceptual scheme of how the organization operates to achieve the goals set for it, obtain revenues or create a different value for specific stakeholders (customers). Moreover, it does not matter if the organization operates for commercial or other purposes. At the same time, the concept of the BM in the literature is very scattered. Various definitions of the BM and multi-criteria classifications of business models are quoted (e.g. [Andreini, Bettinelli 2017]). The most prevalent definitions of a BM taken from the most impactful works, displayed in chronological order, are presented in Table 1.

What is common to all presented definitions is that they present the way the organization operate in order to achieve certain goals. Classifications of business models are, like the above definitions, diverse [Lambert 2015]. There is no consistency here. Some classifications include 4 types: focused distributor models, portal models,

Table 1. Selected business model definitions

Author	Definition
P. Timmers [1998]	Business model provides an architecture for the product, service and information flows, including a description of various business actors and their roles, and the description of potential benefits for those various actors and a description of the sources of revenues.
D.J. Teece [2010]	Business model defines the manner by which the enterprise delivers value to customers, entices customers to pay for value, and converts these payments to profit.
A. Osterwalder, Y. Pigneur [2010]	Business model describes the rationale of how an organization creates, delivers and captures value.
T. Clark, A. Osterwalder, Y. Pigneur [2013]	Business model is the way in which the organization secures its financial survival.
International Integrated Reporting Council [IIRC 2013]	The organization's chosen system of transforming inputs, through its business activities, into outputs and outcomes that aims to fulfill the organization's strategic purposes and create value over the short, medium and long term.

Source: own study.

producer models and infrastructure provider models ([Applegate 2001], as cited by: [Lambert 2015]), or: archetype of a model in the form of: producer, distributor, owner and intermediary [Michalak 2016]. Other 7, 8 or even 14 types of business models: portal, e-tailor, content provider, transaction broker, market creator, service provider and community provider ([Laudon, Traver 2003], as cited by: [Lambert 2015]). Another classification includes the division into solution-shop and focused factory/manufacturing, as well as the indirect – hybrid model [Cook et al. 2014].

The BM also emphasizes the process nature of the organization. It indicates and describes the path of product creation and its distribution to the customer. In any case, the guiding principle is the creation of value.

The business model consists of three interdependent components ([Bossidy, Charan 2010], as cited by: [Jaworzyńska 2015]):

- external conditions (industry, general description of the business environment, customer base, root causes analysis),
- internal conditions (strategy, operations, people, organization),
- financial goals (profit margin, cash flow, revenues, return on investments).

Dynamic changes in the business environment cause that business models used by enterprises change. The reason for this is the inability to directly influence the change of the environment, and therefore the need to adapt their own business models to external conditions [Clark et al. 2013].

Recently, the interest in the issues of business models also features in research into the accounting system [ICAEW 2010; Disle et al. 2016; Thornton 2012; Lassini et al. 2015; Sorrentino, Smarra 2015; Kozarkiewicz 2016; Michalak 2016; Szewieczek 2017].

The interest in this subject also applies to the regulatory sphere. A significant proportion of respondents answering the Discussion Paper “on the Conceptual Framework for Financial Reporting,” indicated that IASB should define or provide further clarification on the BM concept in the Conceptual Framework [Sorrentino, Smarra 2015].

This is related, *inter alia*, to the fact that among the elements of the BM¹, two of them are revenues and costs, which are directly reflected in the reporting information created in the accounting system. Moreover, there are increasingly widespread aspirations of industry organizations for entities to disclose their business models in their reporting data [ICAEW 2010]. If we assume that the BM consists partly of elements that are also the subject of accounting, and there is a tendency to disclose it in the entities’ reports, it can be presumed that changes in the business model affecting changes in the structure of revenues, costs, strategies will affect changes in the valuation and presentation rules adopted by the entity for some balance sheet and residual items. As a result, the information contained in the financial reports of these enterprises will change.

As a result, it can be concluded that the BM affected the financial accounting and its results – financial reports, as well as management accounting, and non-financial reporting.

The BM influences the selection of adopted measures of assets that are being used or created within firms (historical cost, replacement cost, fair value, market price, own bases of measurement). These measures are then justified under the financial reporting. At the same time, it should be noted that measures that better reflect the value in the presentation of the BM are market measures, current (fair value, replacement cost), and not historical ones. This is due to the significant dynamics of the environment and the following changes in the approaches to the valuation of firms’ resources.

Other areas of impact of the business model on accounting solutions include cost allocation and revenue recognition. In different firms and different sectors it may be closely linked to the way how BM is interpreted [ICAEW 2010].

The business model “provides a link between the issues raised by the theory of the firm and the financial reporting of individual firms” [ICAEW 2010]. As it has been stated [ICAEW 2010; Thornton 2012], it is difficult to link the theory of the firm and accounting measurement, but exactly the business model plays a role of relating the two each other, as well as to link other aspects of accounting, e.g. transfer pricing, objectives of financial reporting, corporate governance role of financial reporting.

The analysis of current IFRS records indicates that the elements of the BM are poorly reflected in the content of standards [Disle et al. 2016]. In contrast, as

¹ Elements of the business model are presented in the literature in various ways. For example, Business Model Canvas includes 9 items – cost structure, revenue structure, partners, key resources, key activities, proposed value, customer relationships, distribution channels and market segment. Some studies indicate 8, others 4 or even 3 elements. In each case, however, the areas related to finance – income, costs, or profit margin and cash flows – are mentioned.

research shows, it is necessary to undertake actions aimed at disclosing value creation processes in firms' reporting, as current solutions critically assess the ability to represent organization's business model [Lassini et al. 2015]. Their findings showed no significant relations between a BM of a company and its accounting choices. But at the same time this can reinforce the criticism of the possibilities of the current state of financial reporting to disclose information about the business model – simply the current reporting is not adapted to these needs.

Inconsistency and dispersion of business models among organizations, diversification of activities and products offered, as well as operating strategies, cause the principle of sectoral data comparability to fail between the subsequent years, imbalance value of sectoral indicators and their norms for individual sectors. This makes it difficult to carry out analyzes and formulate conclusions, while at the same time diminishing the role of sectoral specialization adopted to formulate these conclusions. As a result, the differences between the reporting values between sectors are blurring.

Also, IASB and IIRC decided that corporate reporting should evolve towards communication about BM and value creation, which should be reflected in the Integrated Report [IASB and IIRC 2013]. The evolution of the scope of disclosures should be directed towards sources of increasing cash flows, description of the relationship between inflows and outflows of cash and the company activity system [Lassini et al. 2015].

3. The influence of behavioral factors on the shaping of the business model and reporting disclosures

The behavioral trend has arisen in economics in response to the concept of a rational "homo economicus" (proposed by J.S. Mill). This representative of neoclassical economists in his work "Utilitarianism" propagated the idea of human happiness consisting in avoiding suffering and experiencing pleasure, which was to testify to a useful life. He analyzed utility in the context of justice, requiring everyone to receive what they deserved [Sulik-Górecka, Strojek-Filus 2017a]. The forefather of the behavioral trend was H.A. Simon [Simon 1955], who undermined the rationality of a person, believed by neoclassical economists. According to him, in making decisions, a person is guided by the desire to choose a variant that will be the most satisfying for them, but not necessarily optimal. Factors affecting decision making include emotions, feelings and even personality traits.

The behavioral trend was also developed in the financial discipline, e.g. in relation to the operation of financial markets [Sulik-Górecka, Strojek-Filus 2015] as well as in accounting and reporting. In the literature on behavioral accounting, the impact of behavioral factors on the formation of the accounting system and financial reporting was also analyzed [Atanasovski 2013; Diamond, Verrecchia 1991; Bushman, Smith 2001; Blitzer 2015; Zheng 2010].

The main accounting areas in which the impact of behavioral factors was examined include the formulation of accounting policies, choice of cost accounting and cost accounting variants, selection of methods for the valuation of assets and liabilities, as well as the scope of estimates.

A separate area that is significantly affected by behavioral factors is obligatory financial statements. Constantly changing regulations in International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS) as well as, to a lesser extent, in the Accounting Act allow for making choices regarding information presented in subsequent elements of the financial statements, which affects the usefulness of information to users.

The main behavioral factors affecting accounting and reporting may be classified into the following areas [Sulik-Górecka, Strojek-Filus 2017b]:

- corporate governance model,
- personal interests of board members and supervisory board,
- employee incentive system,
- behavioral traits of key managers
- behavioral traits of key customers,
- financial audit quality,
- organizational structure of an economic entity,
- environment of economic entity,
- situation of economic entity,
- legal regulations.

Reporting disclosures regarding business models depend on various types of behavioral factors. The most important behavioral factor affecting the reporting of business models is legal regulations. An equally important factor is the environment of economic entity, which seems to be confirmed by research presented further in the paper. Certain elements of shaping the business model, describing the way in which the organization creates value and derives profits from value [Osterwalder, Pigneur 2010] included in the financial statements result directly from the balance sheet principles.

An important behavioral factor is the personal interests of management board and the supervisory board members. According to J. Leisenring et al. [2012], business model disclosures are based on the intention of management to use, transfer or otherwise dispose of assets or liabilities.

Although the literature offers proposals of further development of enterprise's annual report with prospective information (including plans and objectives), a risk report and a report on intangible assets [Marcinkowska 2004], currently the biggest amount of information can be found in the activity report. In various areas, companies present data on the structure of products sold or services rendered, information on sales markets and sources of supply. One can also find information on key internal processes carried out in the entity and relations with the environment [Karwowski 2016].

4. Behavioral reasons for reporting disclosures on the business model – a case study

Dynamic changes in the environment, the growing importance of new media and sudden technological changes cause that organizations evolve, changing their business models, diversifying revenues, expanding the range of products, diversifying customers, markets and even forms of revenue (business locations). Stakeholders of financial statements, stockholders and shareholders feel the need for full information regarding the strategy of the companies in which shares and stocks they decided to invest capital. Therefore, the question arises as to how much the scope of reporting disclosures allows shareholders to receive full information about the business activities carried out and what is the impact of behavioral factors on these activities and disclosure. The following is a case study of two capital groups listed on the Warsaw Stock Exchange: PKN Orlen and Tauron.

The companies that make up the PKN ORLEN Group focus on the acquisition, processing, distribution and sale of oil and gas, petrochemical and refinery products. Fuel sales are made largely through its own, the largest in Central and Eastern Europe, network of around 2800 service stations (market share in Poland is about 34% and about 1780 service stations, including about 450 as part of the franchise network, in the Czech Republic 20%, in Germany 6%, in Lithuania 5%). In accordance with the adopted strategy for 2017–2021, the PKN ORLEN Group “will focus on strengthening the market position, customer orientation.” Among the three main priorities of the group’s development (Downstream, Retail and Extractive), the Retail segment expanded the retail offer (introducing new products and services, including financial services) to service stations, creating unique shopping experience and increasing customer satisfaction, support for modern technologies and advanced data analytics [PKN ORLEN 2016].

Bearing in mind the adopted strategy of the PKN ORLEN Group (despite the presented different position of PKN ORLEN) and the prohibition on Sunday trading introduced in Poland from 2018, it should be noted that new opportunities are opening up to change the business model of the organization’s operations.

Using own resources and, above all, a large number of retail outlets, it is planned to increase the activity in the area of wholesale and retail trade. This is also confirmed by the change in the company’s Articles of Association made in February 2018, providing for trade (including mainly wholesale – but for its own network of franchisees) of food products (including meat, dairy, vegetables, bread, etc.), household appliances/electronics, clothing and footwear, manufactured products and many others.

The provisions of the Act on Restricting Trade on Sundays and Public Holidays [Ustawa z 10 stycznia 2018] do not apply to petrol stations, regardless of their size. Although the Group does not confirm the adoption of a development strategy in the area of trade with the indicated changes in law, it is impossible to avoid the conclusions about the special benefit that results from the newly adopted law.

Among the mentioned behavioral factors of the introduced changes, it is possible to indicate in this place: legal regulation, but also the environment of economic entity, as well as the organizational structure of an economic entity, emphasized by the possibility of using already very extensive own retail network. It is an advantage over other entities and limitation of future adaptation costs to new business opportunities.

As a result of changes in the business model, the entity is moving towards a shop solution, and hence the diversification of activities, taking into account the potential of using the market position, competitive advantage in the light of legal restrictions, as well as optimizing the value creation chain by using its own supply chain and distribution channels. One should also not forget about the expected increase in the level of sales of the basic product (fuel), purchased at the time of another sale, so-called Sunday sale.

The business model is reflected in the reporting data, although its identification based solely on financial data contained in the annual report (e.g. consolidated report for 2016) is not fully possible. The document does not clearly describe the subject of the business model in a separate manner. The review of the report's content indicates the main three segments of business for management and operational purposes, which is also justified by the content of IFRS 8 Operating Segments. Within these segments (especially the retailing), full information about its internal structure was not included. Some guidelines on the transformation of this model can be found in the Management Board's report in the part concerning investment plans (section 4.4).

The transformation of the business model towards a greater focus on detail and the elimination of intermediaries will change the structure of assets. This change will depend on the logistic solutions adopted, although it will certainly increase the value of inventories of goods and perhaps the adopted principles of their valuation. At the same time, it is unlikely to create new reporting categories, as the retailing will be developed rather than newly launched. Currently, the studied group values goods at historical cost (purchase price), and their expenditures in the weighted average prices.

The change of the business model in the retail area will also cause changes in the structure of actual result categories:

- increase in revenues from the sale of goods other than fuels,
- increase in revenues from fuel sales,
- increase in the value of inventory,
- increase in the costs of selling goods (possibly storage costs, or intermediary costs, and the costs of technological handling services),
- increase in the cost of write-downs updating the value of goods (especially food with a short shelf life),

Unfortunately, in the current form of data reporting these changes will not be subject to separate presentation, hence it will not be possible to make conclusions on the change in the business model. It will also be difficult to assess the level of margin realized on the sale of fuels and on other sales as well as to assess block gross margins within the retail segment, and to calculate sectoral financial ratios.

Another analysis concerns the Tauron Group – a leader in the energy industry. The Group changed the business model from 1 May 2016 to one that allows the elimination of duplicated activities and internal competition; gaining benefits resulting from the synergy and scale of operations, focusing on clients, being driven by the Group's values, as well as reducing bureaucracy in decision-making processes and using the knowledge and qualifications of the Group's employees. The basis was the transition to process management which led to a change in the organizational structure from vertical to horizontal. The Corporate Center, Business Areas and Shared Service Centers were distinguished. In the media information, the management board emphasized the significant contribution to the transformation of the business model of the behavioral factor, which is the organizational culture. During several months of work, 78 representatives of companies from various areas, including human resources management, risk, mining rescue, strategy, sales, customer service, as well as members of the social council, new values of organizational culture were defined based on partnership, development and courage [*Tauron zmienia...* 2016]. Since 2012, the Group has been preparing social reports on Sustainable Development presenting achievements in such areas as energy security, customer orientation, environmental protection, approach to employees, and socioeconomic management impact. As part of the consolidated financial statements, the Group presents data regarding operating segments in accordance with IFRS 8 Operating Segments. The information relates to the organization and management of the Group, which are broken down into segments, taking into account the type of products and services offered. Each of the segments, which are Extraction, Generation, Distribution, Sales, is a strategic business unit serving different markets. The financial report includes detailed data on revenues, costs, assets and liabilities in the cross-section of individual segments and in the activity report the information was expanded to include strategic goals and initiatives, as well as forecasts for each segment.

Information about the new business model can be found in the Management Board Report for 2016. The implementation of the new operational model is described in a separate section on the Business Model of the Tauron Group. Five priority process streams have been identified, around which the TAURON Capital Group's operations will focus, i.e. Strategy, Finance, Asset Management and Development, Customer as well as Corporate Governance and Support. The Management Board decided to increase the emphasis on cross-cutting issues, which, in its opinion, may enable the Group to gain a competitive advantage in the future. The Board of Management report directly stated that the TAURON Capital Group will develop the Sales Area and customer service, introducing consistent, high standards of customer service in every area of the value chain and the development of modern and integrated sales and customer service channels.

The report on the activities of the Management Board also contains extensive information on the Strategy of the Capital Group for the years 2016–2025 defining four priority directions of innovative and R&D activity:

- The customer and their needs.
- Intelligent network services.
- Distributed generation.
- Low-emission manufacturing technologies.

The strategy is the response of the TAURON Capital Group to the challenges posed by the business environment and customer expectations. Greater awareness and expectations of the customer towards a comprehensive, personalized offer of additional services and products were noticed. The strategy was also influenced by legal solutions supporting the reduction of low emissions (e.g. electric heating, system heating) and European Union regulations concerning the single energy market. In many places in the Report, the Tauron Group's involvement in pro-environmental energy solutions was stressed, which indicates a strong influence of behavioral traits on the Management Board. The Management Board activity report also contains information on the Human Resource Management Policy, in which the objective is to build a cohesive organizational culture based on corporate values (the aforementioned partnership, development and courage) and innovation. The Management Board in the report proves the implementation of the principle of effective learning by developing employees through learning in practice as well as the detailed number of training hours calculated. Employees' participation in creating strategy and developing value is also emphasized.

5. Discussion

The business model defines how the organization creates value for the customer and at the same time builds the value for itself, realizing different adopted goals. The literature research and audits of financial statements as well as other information on two large Polish capital groups confirmed positively that the business model appears in the financial statements. Despite this, the approach to this issue, the scope of disclosures, the manner of data presentation are inconsistent and indeterminate.

The example of the audited reports revealed two extreme approaches. In second case, the issues related to the business model were clearly identified in the additional information, in the first case only the expert on this subject could selectively find some elements in the financial report. In each of the analyzed cases, the impact of changes in the business model on accounting solutions, including the valuation principles, revenues and rules for their recognition, qualification and entry in the financial statements, as well as the principles of accounting and cost calculation were not referred to.

The transparency of the financial statements was also not achieved due to the inclusion of additional information about the business model, treating this subject rather as an element of the description of strategic and restructuring activities, and not the perspective of value creation. The financial statements do not make it possible to read intentions regarding changes in the business model, so it is difficult to conclude

on the behavioral factors affecting the reporting of the business model and the strength of their impact. However, based on the inference, it was possible among the indicated possible behavioral factors in the examined cases to indicate major four components, i.e. behavioral traits of key managers, an organizational structure, environment of economic entity and legal regulations.

Despite the inconveniences and shortcomings indicated, it is possible to formulate a proposal on increasing the scope of information about the business model in financial reporting and related changes in company's accounting. The strength of these changes will depend on their standardization in the integrated reporting or national law. However, considerable systematization of this issue is required, both from the definitional and classification perspective, as well as in the context of links with the accounting system of business entities. Further research in this field will be continued by the authors.

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