

THE KEY ELEMENTS OF A BUSINESS MODEL ON THE OPTICAL MEDICAL DEVICES MARKET IN ROMANIA

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Abstract: Today, business model research is becoming more and more popular in both academic and professional communities. The need to research business models is due to the need of the business environment for new sources of growth and consolidation of competitiveness in a dynamic market. While the definition of the business model concept has been among the priority tasks of the leading researchers in the field, the definitions have been the subject of much debate and a generally accepted definition has not yet emerged. In Romania there are few materials (articles and books) developed by Romanian researchers in academia on the issue of business models. To understand the essence of the business model concept, we will approach the definitions developed by well-known authors in the field of theoretical research and we will seek to identify the key elements of the business model. Based on these we will formulate an optimal definition for a business model. Deepening the research of published business models makes it possible to evaluate them and identify a direction for improvement in a specific area, the market of optical medical devices in Romania.

Keywords: business model, market, key elements, definition, optical medical devices

1 INTRODUCTION

The concept of business model began to be studied at the academic level after 1998 and experienced a dynamic of rapid development until 2010 when many papers were published in the field. After 2010, the concept of innovating the business model emerged and its research has become a concern for research schools around the world (both in the West and in other

parts of the world, in emerging economies). At present, business model research is becoming more and more popular in both academic and professional communities.

The term "business models" is often used in the business community. Businesspeople talk about how their business is organized to make money. Business models have a different meaning. They refer to analytical frameworks and tools that are used in strategic planning. A

brief presentation on understanding a business model would be as follows: If we face a problem, we try to answer the question "Where are we now?" At this stage we understand the problem and the causes that generated it. Then we ask another question: "Where do we want to go?" At this stage, we will set goals that will solve our problem. Finally, we ask ourselves, "But how do we get there?" Thus, we will look for solutions: what we will do, who will do it, what resources we need and how long this stage will last. (Hague, 2019).

Business models give us a sense of confidence in business that comes from knowing where we are and where we can go. Just as we need a map for a mountain trip, so we need a business model to start a business.

A first in-depth definition of the business model was developed in 1998: "The business model is the architecture of products, services and information flows, including a description of the different economic actors and their roles, potential benefits and sources of income." (Timmers, 1998).

Managers who want to outperform their competitors in the long run need to focus on: (1) choosing the right business model for the current circumstances; (2) implementing their business model in an excellent way; (3) continuous development and consolidation of the company's capacity dynamics; (4) The company must be able to change the business model effectively and in a timely manner when an opportunity or threat arises. (DaSilva et al., 2014).

"The business model is a description of the roles and relationships of a company's manufacturers, customers, partners, and suppliers that identify major product flows, information, money, and major benefits for participants." (Weill, and Vitale, 2001).

"A business model describes the content, structure and governance of transactions designed to create value by exploiting e-business opportunities." (Amit, and Zott, 2001).

"The business model deals with the process of creating and delivering value to the customer, in which several companies that interact in the market participate. This process becomes a source of revenue generation for all participants included in it and demonstrates an existing structure of companies that interact in the market. At the same time, business models may differ depending on the cost or value allocation mechanism that is created jointly by companies that interact in the marketplace." (Tretyak, and Klimanov, 2016).

For the business model, innovation and sustainability are like oxygen for people. Without the power of new ideas and long-term and stable visions, it is difficult to live and develop. Experts believe that innovation means successful offers, recently launched on the market. Innovations were initially related to products and services and can now refer to processes, organizational structures, or entire business models.

Therefore, an innovation of the business model is a significant change in the characteristics of a company that better meets the needs of customers than the original business model, through new forms or combinations of the components mentioned above. "Business model innovations can be fully developed, resulting in a completely new business model or business models that can be partially developed." (Geissdoerfer, Vladimirova, and Evans, 2018).

2 RESEARCH METHODOLOGY

2.1 Methodology

From the point of view of the research methodology used, the following paragraphs present all the criteria used in selecting the relevant articles for this study. The number of criteria used is 7 and their relevance for this study of the literature is detailed below.

1. Database: Search the international academic databases Web of Science and

SCOPUS, which are chosen because they offer a wider selection of articles and multiple possibilities to access data. The Google Scholars academic search engine was also accessed.

2. Year of publication: For this study, the research of publications related to business model was carried out for the reference period 1998 - 2018.

3. Type of publications: To obtain the most relevant results, only works published in books and magazines specialized in the field were selected.

4. Keywords used: The search was performed by concrete queries: "business model *", respectively "business model innovation *".

5. Selected topics: Variants of selected topics Business and Management.

6. Availability of publications: All available publications in the two databases were selected for this study.

7. Language: The language in which the selected articles were written is English. Both English and Russian (for relevant articles published in Russian) were used in the Google Scholars search engine.

2.2 Analysis and Results

Following the search in the international academic databases, the results obtained were as follows: in the Web of Science database there were 3419 publications from abroad and in the SCOPUS database there were 5451 publications from abroad for business models.

Following the concrete searches on the site www.scholar.google.com and www.scholar.google.ru resulted 383 publications (articles in specialized magazines and books), elaborated by foreign authors.

Depending on the number of citations of the articles, the most relevant articles were selected. The definitions of the business model developed by the authors of the articles were studied.

Table 1 lists the authors and titles of articles or books published in the field of business models in chronological order.

Table 1. Relevant studies on business model research in the literature

Authors	Title of article or book
Timmers, 1998	"Business models for electronic markets"
Mahadevan, 2000	"Business models for Internet-based e-commerce: An anatomy"
Hamel, 2000	"Leading the Revolution"
Rappa, 2000	"Business models on the web: managing the digital enterprise"
Weill, and Vitale, 2001	"Place to space: Migrating to e-business models"
Afuah, and Tucci, 2001	"Internet business models and strategies: Text and cases"
Amit, and Zott, 2001	"Value creation in e-business"
Tapscott, 2001	"Rethinking strategy in a networked world: Or why Michael Porter is wrong about the Internet"
Chesbrough, and Rosenbloom, 2002	"The Role of the Business Model in Capturing Value from Innovation: Evidence from Xerox Corporation's Technology Spin-off Companies"
Magretta, 2002	"Why Business Models Matter"
Hedman, and Kalling, 2003	"The Business Model Concept: Theoretical Underpinnings and Empirical Illustrations"
Yip, 2004	"Using strategy to change your business model"

Morris et al., 2005	"The Entrepreneur's Business Model: Toward a Unified Perspective"
Shafer, Smith, and Linder, 2005	"The Power of Business Models"
Chesbrough et al., 2006	"Business models for technology in the developing world: The role of non-governmental organizations"
Johnson et al., 2008	"Reinventing Your Business Model"
Zott, and Amit, 2008	"The Fit between Product Market Strategy and Business Model: Implications for Firm Performance"
Teece, 2010	"Business Models, Business Strategy and Innovation"
Casadeu-Masanell, and Ricart, 2010	"Competitiveness: Business model reconfiguration for innovation and internationalization"
Demil, and Lecocq, 2010	"Business Model Evolution: In Search of Dynamic Consistency"
Osterwalder, and Pigneur, 2010	"Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers"
Baden-Fuller, and Morgan, 2010	"Business Models as Models"
George, and Bock, 2011	"The business model in practice and its implications for entrepreneurship research"
Sorescu et al., 2011	"Innovations in Retail Business Models"
Nielsen, and Lund, 2012	"An introduction to business models"

Fielt, 2013	"Conceptualising business models: Definitions, frameworks and classifications"
Barilenko, Berdnikov, and Havel, 2013	"Analytical tools for the development and monitoring of promising business models for small and medium-sized companies"
Tretyak, and Klimanov, 2016	"A new approach to business model analysis"
Geissdoerfer, Vladimirova, and Evan, 2018	"Sustainable Business Model Innovation: A Review"

For a clearer understanding of the essence of existing business model definitions, Table 2 presents the result of a semantic analysis by the author of the article on business model definitions.

This analysis confirms the emergence of the value chain (proposing, creating, delivering, and capturing value) in the study of business models consisting of different market participants. The value component plays a key role because it often appears in definitions to explain the essence of the business model.

Table 2. Keywords in business model definitions

Keywords	Mention frequency words in definitions
Business	40
Value	34
Company	30
Structure, Arhitecture	15
Action, Activity	14

Income, Revenue	14
Client, End User	12
Value creation	10
Value delivery	10
Costs, Expenses	10
Strategy	9
Cooperation, Relation	8
Transaction, Flow	8
Value chain	6
Products, Services	6
Value proposition	4
Value capture	2

The value created in the business model is a key element in understanding this concept. Many authors elaborate the definition of the business model around the value created within it. For example, several authors (Teece, 2010; Shafer et al., 2005; Fiel, 2013; Osterwalder, and Pigneur, 2010; Chesbrough et al., 2006; George, and Bock, 2011) pay close attention to the need for to create value considering the interests of all participants in the business model to achieve equilibrium (representatives of networks of multinational companies, customers, society, the external environment).

Many authors present the essence of the business model by mentioning the different components or constituent parts of which they are composed. In many cases these issues are presented by different business consultants using their experience in analyzing business models as well as developing recommendations for their improvement.

One of the most well-known approaches (Osterwalder, and Pigneur, 2010) for determining the components of the business model is “The Business Model Canvas” which includes 9 components: value proposition, customer groups, customer relations, distribution channels, key resources, key activities, key partners, revenue streams and cost structure.

Another author (Hamel, 2000) defined the components of the business model under a different scheme: basic strategy, strategic resources of the company, customer profile, value chain.

The authors (Chesbrough, and Rosenbloom, 2002) state that the business model consists of a structure that controls the value creation process with the following components: value proposition, value chain structure, position in the value chain, market segment, competitive strategy, structure costs and profit.

Teece's 2010 study examines the following components of the business model: consumer advantage in using the product, target market segments, technologies and properties of the product or service, revenue streams, and value generation mechanisms.

3 SIMILARITIES AND DIFFERENCES OF OPINION IDENTIFIED BY THE AUTHOR REGARDING THE BUSINESS MODEL

There are many opinions of research that have similarities (consensus) but also differences in the definition of the business model. Following an in-depth theoretical analysis of the definitions developed by the researchers (mentioned in Table 1) regarding the business model, some common aspects were identified as follows:

- Many studies by authors are based on empirical methods (e.g., case study of individual companies).
- Most research studies have been conducted by authors in the US and Europe and very few in the East. There is an explanation:

most business models are related to companies specific to the market economy (which dominates the market worldwide). At the same time, there have been and still are business models in centralized economies.

- The most cited works on business models are generally dedicated to developed economies and much less to developing economies such as the Romanian economy.

At the same time, analyzing theoretically the definitions of business models, the following differences of opinion were identified:

- ✓ There is a significant diversity of approaches indicating a lack of consensus among researchers about the significance of business models.

- ✓ There is a confusion in terminology because the business model, strategy, business concept, revenue model and business model are often used interchangeably, and the business model has been called architecture, design, model, plan, and method.

- ✓ There is also some confusion regarding the company as an entity. There are business model definitions that refer to the entity level as a company and other definitions of authors (Weill, and Vitale, 2001; Chesbrough, and Rosenbloom, 2002; Tapscott, 2001) that refer to the entity level as a network of companies.

- ✓ Some authors (Amit, and Zott, 2001) position the business model as a level of analysis located between the company and the network of companies, other authors (Morris, et al., 2005) do not make an explicit reference on the level of the organizational entity and most authors include both levels of analysis in conceptualizing the business model.

- ✓ Some definitions are influenced by the specific context in which the business model concept is used. Some authors (Amit, and Zott, 2001) focus on value creation in e-business and describe the business model as a project of the content of the transaction, structure and governance transactions and other authors (Chesbrough, and Rosenbloom, 2002) focus on

technological innovation and positions the business model as a mediator between the development of technology and the creation of economic value.

- ✓ Some definitions of the authors (Teece, 2010; Shafer, et al., 2005; Felt, 2013; Osterwalder, and Pigneur, 2010; Chesbrough et al., 2006) are formulated around the value logic regarding the conditions of creation, delivery and or value capture.

- ✓ The definitions of the concept vary from the perspective in which the business model represents only the logic behind the revenue generation process (Rappa, 2010) until the main elements are not only the processes but also the actors involved (Timmers, 1998).

- ✓ Some authors (Afuah, and Tucci, 2001; Mahadevan, 2000; Teece, 2010; Rappa, 2010) present consensus on how the company generates revenue by using ideas, resources and technology and other authors (Shafer, et al., 2005; Osterwalder, and Pigneur, 2010) show consensus on how the company generates value.

- ✓ One of the divergences in these definitions is the attempt to differentiate the business model as a term from a more generic notion, of strategy. Some authors (Casadesus-Masanell, and Ricart, 2010) stated that "a company's business model reflects its strategy" and added that "in essence, the strategy coincides with the business model, so an external observer can know the company's strategy, looking at its business model". Similarly, another author (Magretta, 2002) used a metaphor to explain what a business model means and suggested that business models are essentially "stories" that explain how companies work. While the business model helps to analyze the testing and validation of a firm's strategic choice, several researchers (Morris et al., 2005; Yip, 2004) have argued that business models are not the same as strategy.

However, it is obvious that in many definitions of the business model there are statements that value is not only something that

is produced but also something that changes and is consumed. Many researchers (Afuah, and Tucci, 2001; Teece, 2010; Baden-Fuller, and Morgan, 2010; Chesbrough et al., 2006; Johnson et al., 2008) continue to recognize the central place of business models of value creation, value delivery, and value capture to a company's customers.

4 BUSINESS MODEL ON THE OPTICAL MEDICAL DEVICES MARKET IN ROMANIA

The Romanian market is an emerging market in which changes can occur in an easier and faster way than other markets. The Romanian market for optical medical devices includes groups of specific participants significantly affecting the functioning mechanism and the results of interactions within a business model. There are the following participants in the optical medical device market : optical medical device manufacturing and distribution companies, suppliers of raw materials and subassemblies for optical medical devices, end users (patients) of optical medical devices, ophthalmologists, optometrists, specialist retailers, and marketing companies. Information, financial and logistical flows take place between these actors.

The optical medical devices market in Romania is developing with a very large segment of end users (wearers of glasses and contact lenses). According to the latest social research study conducted at the level of European countries, published in 2020 by the European Council of Optometry and Optics in ECOO-Blue Book-2020, 50% of the Romanian population is wearing glasses and 2% is wearing contact lenses.

The Romanian market for optical medical devices is dominated by the retail segment. The companies that manufacture and distribute optical medical devices come mostly from the private sector. Most manufacturing companies

are subsidiaries of networks of optical medical device manufacturing companies headquartered abroad.

Distribution companies come from a variety of backgrounds : some of the distribution companies come from the domestic private sector and the other part comes from the foreign private sector in the form of independent companies or part of international networks of distribution companies of optical medical devices.

Raw material suppliers are companies that generally come from the private external environment.

Marketing companies are present on the market of optical medical devices in Romania, both abroad and locally.

Ophthalmic clinics and patients come from the local environment.

Therefore, the participants in the market of optical medical devices come both from the local environment and from abroad. The companies are mostly privately owned and are found both in the form of independent companies and part of a network of companies specializing in the production and distribution of optical medical devices.

Generally a business model in the market for optical medical devices involves five components (Rayna, and Striukova, 2016):

✓ The value proposition that represents the products and services that are offered by the manufacturing company (simple, mixed, network of companies) directly to the end user and the latter is to appreciate their value.

✓ The value creation which means transforming the resources (material, financial) of the manufacturing company by using the human and material potential by applying the methods of management and relationship with various entities into products or services that end users want to pay.

✓ The value distribution is the means by which the manufacturing company establishes

interactions with a certain segment of end users in order to provide value to them.

✓ The value capture means the way in which the value proposition is transformed into a revenue stream and then the profit is captured, after deducting the company's expenses.

✓ The value communication means delivering the value proposition in the form of a message to the target groups: end users, investors, partners, suppliers.

For the Romanian optical medical devices market, this model corresponds to the specific conditions in Romania.

5 CONCLUSIONS

Different authors have tried to define a business model and its complexity in different ways. However, there is no general description accepted by the scientific literature as the official definition of the concept.

Although the concept is studied and researched extensively around the globe, many business model researchers try to formulate their own definition of business models without considering the research of their predecessors in the field. This further widens the gap between the authors' positions because another significant part indicates the need to highlight common conclusions on understanding the essence of the business model. Because of this inconsistency in business model definitions, many authors try to enrich the content of the definition with various explanations, resources, and processes that they believe are part of the business model.

To sum up, to understand the essence of the concept of a business model and how it works based on all the opinions of researchers who have developed definitions of the business model we can summarize that the optimal definition for a business model. The definition is as follows: *"the business model of the company or network of companies is a conceptual tool that defines the way in which it creates, delivers,*

captures value and provides an architecture of the delivered product or service, distribution and communication channels used, the transactions carried out, the flow of information including a description of the participants involved in the business, their roles, the potential benefits for the stakeholders and the revenue scheme".

The study of business models is primarily associated with the concept of creating value for the end user through interactions between participants in the value chain (suppliers, manufacturers, distributors). In the current conditions of the Romanian market economy, the business model exceeds the limits of a single company, the value chain being extended to the level of company networks.

Business models are not recipes or scientific models, but they can play any of these different roles for different companies and for different purposes.

Deepening the research of published business models makes it possible to evaluate them and identify a direction for improvement in a specific area, the market of optical medical devices in Romania.

6 BIBLIOGRAPHY

6.1 Periodicals

- Amit, R., and Zott, C. 2001. "Value creation in e-business." *Strategic Management Journal*, 22(6-7), 493-520.
- Baden-Fuller, Charles, and Mary S. Morgan. 2010. "Business Models as Models." *Long Range Planning* 43 (2-3): 156-171.
- Barilenko, V.M., Berdnikov, V.V., Havel O.Y. și Kerimova C.V. 2013. „Analytical tools for the development and monitoring of promising business models for small and medium-sized companies”, *RISK Journal* 4 (2013), 246-254 / Бариленко В. И., Бердников В. В., Гавель О. Ю., Керимова Ч. В. Аналитические инструменты разработки и мониторинга перспективных бизнес-моделей компаний малого и среднего бизнеса, *РИСК*. № 4/2013. С. 246-254. Available

- on
<https://cyberleninka.ru/article/n/analiticheskoe-obosnovanie-perspektivnyh-biznes-modeley-kompaniy-malogo-biznesa>, accessed on December 2021, 21.
- Casadesus-Masanell, R., Ricart, J. E. 2010. "Competitiveness: Business model reconfiguration for innovation and internationalization." *Management Research: Journal of the Ibero-american Academy of Management*, 8 (2): 123-149.
- Chesbrough, Henry et Rosenbloom, R.S. 2002. "The Role of the Business Model in Capturing Value from Innovation: Evidence from Xerox Corporation's Technology Spin-off Companies." *Industrial and Corporate Change* 11 (3): 529-555.
- Chesbrough, H., Ahern, S., Finn, M., and Guerraz, S. 2006. "Business models for technology in the developing world: The role of non-governmental organizations." *California Management Review*, 48: 48-61.
- DaSilva, Carlos M., and Peter Trkman. 2014. "Business Model: What It Is and What It Is Not." *Long Range Planning* 47 (6): 379-389
- Demil, Benoît, and Xavier Lecocq. 2010. "Business Model Evolution: In Search of Dynamic Consistency." *Long Range Planning* 43 (2-3): 227-246.
- Fielt, Erwin. 2013. "Conceptualising business models: Definitions, frameworks and classifications." *Journal of Business Models* 1 (1): 85-105.
- Geissdoerfer, Martin, Doroteya Vladimirova, and Steve Evans. 2018. "Sustainable Business Model Innovation: A Review." *Journal of Cleaner Production* 198 (October): 401-416.
- George, G., Bock, A.J. 2011. "The business model in practice and its implications for entrepreneurship research." *Entrepreneurship Theory and Practice*, 35: 83-111.
- Hedman, Jonas, and Thomas Kalling. 2003. "The Business Model Concept: Theoretical Underpinnings and Empirical Illustrations." *European Journal of Information Systems* 12 (1): 49-59.
- Johnson, Mark W, Clayton M Christensen, and Henning Kagermann. 2008. "Reinventing Your Business Model." *Harvard Business Review*: 1-12.
- Magretta, J. 2002. "Why Business Models Matter." *Harvard Business Review*, 80 (5): 3-8.
- Mahadevan, B. 2000. "Business models for Internet-based e-commerce: An anatomy." *California Management Review*, 42 (4): 55-69.
- Morris, Michael, Minet Schindehutte, and Jeffrey Allen. 2005. "The Entrepreneur's Business Model: Toward a Unified Perspective." *Journal of Business Research* 58 (6): 726-735.
- Nielsen, Christian and Lund Morten. 2012. "An introduction to business models." Available on https://www.researchgate.net/publication/273634452_An_Introduction_to_Business_Models/link/55076bd10cf2d7a2812553f7/download, accessed on December 2021, 21.
- Rappa, M. 2010. "Business models on the web: managing the digital enterprise". Available on <http://digitalenterprise.org/models/models.html>, accessed on December 2021, 21.
- Rayna, T., and Striukova, L. 2016. "From rapid prototyping to home fabrication: How 3D printing is changing business model innovation." *Technological Forecasting and Social Change* 102: 214-224
- Shafer, Scott M., H. Jeff Smith, and Jane C. Linder. 2005. "The Power of Business Models." *Business Horizons* 48 (3): 199-207.
- Sorescu, Alina, Ruud T. Frambach, Jagdip Singh, Arvind Rangaswamy, and Cheryl Bridges. 2011. "Innovations in Retail Business Models." *Journal of Retailing* 87S (1): S3-S16.
- Tapscott, D. 2001. "Rethinking strategy in a networked world: Or why Michael Porter is wrong about the Internet." *Strategy and Business*, 24: 1-8.
- Teece, David J. 2010. "Business Models, Business Strategy and Innovation." *Long Range Planning* 43 (2-3): 172-94.
- Timmers P. 1998. "Business models for electronic markets." *Electronic Markets* 8 (2): 3-8.
- Tretyak Olga A., Klimanov Denis E. 2016. „A new approach to business model analysis.“, *Management Russian Journal*, 1/14, 115-130 / Третьяк О. А., Климанов Д. Е., Новый подход к

- анализу бизнес-моделей. *Российский журнал менеджмента* Том 14, № 1. Available on <https://cyberleninka.ru/article/n/novyy-podhod-k-analizu-biznes-modeley>, accessed on December 2021, 21.
- Yip, G. 2004. "Using strategy to change your business model." *Business Strategy Review*, 15(2): 17-24.
- Zott, Christoph, and Raphael Amit. 2008. "The Fit between Product Market Strategy and Business Model: Implications for Firm Performance." *Strategic Management Journal* 29 (1): 1–26.
- Hamel, Gary. 2000. *Leading the Revolution*. USA: Boston Mass Harvard Business School Press, 353 pages, pp. 10-34.
- Osterwalder, Al., and Pigneur Y. 2010. *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. USA: Hoboken, NJ Wiley, 288 pages, pp. 4-44.
- Weill, P., and Vitale, M. R. 2001. *Place to space: Migrating to e-business models*. Boston: Harvard Business School Press, pp. 35-63.

6.2 Books

- Hague, Paul N. 2019. *The Business Models Handbook. Templates, theory and case studies*. USA: Kogan Page Limited, 337 pages, pp. 22-34, 30-36.