

INTERACTIONS BETWEEN THE PARTICIPANTS OF A BUSINESS MODEL IN THE RETAIL MARKET OF OPTICAL MEDICAL DEVICES IN ROMANIA

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Abstract: The market of optical medical devices in Romania is dominated by the retail segment, and the necessary infrastructure in the field is in a best situation, there are a number of 2.05 ophthalmic clinics per 10,000 inhabitants, it is a large number compared to the other European countries. This market is estimated at around € 200 million and is constantly growing. Compared to the other European countries, the profile market in Romania is only at 20% of the potential level it can reach. 50% of the Romanian population is wearing glasses and 2% are wearing contact lenses, there is a remarkably high growth potential for the contact lens market. The relevant participants of a business model on the retail market of optical medical devices in Romania are: material suppliers, manufacturing company, distribution companies, marketing companies, ophthalmic medical practices and patients. There are several types of interactions between participants that take place through the following flows: material, financial and informational. Following the analysis of the participants and their interactions within the business model on the Romanian optical medical devices market, it results that the dominant factor in the business model is the manufacturing company, which coordinates the entire process of creating, delivering, and communicating value to the customer. At the same time, it turned out that the ophthalmologist could play a key role in the interaction between the company that supplies the optical medical devices and the end users who pay for these devices.

Keywords: business model, participants, retail market, interactions, optical medical devices.

1 INTRODUCTION

The Romanian market is an emerging market, in which changes can occur more easily

and quicker than in other markets, for example, in Western European countries.

One of the important factors in choosing this market is that the market of optical medical

devices in Romania includes groups of specific participants that significantly affect the functioning mechanism and the results of interactions within a business model.

One of the links in the value chain of a business model on the Romanian optical medical devices market, the ophthalmic medical office, has a significant impact on the value creation process for patients in the ophthalmic field, because in most cases, patients depend on the prescription prepared by the ophthalmologist for the choice of the optical medical device. This interaction between the ophthalmologist and the patient must be analyzed not only from a medical point of view but also from a commercial point of view, because in most cases, the patient in Romania pays for the prescribed optical medical device.

The Romanian market for optical medical devices is developing with a very large segment of end users.

This market segment has been very little approached from an academic point of view by researchers in this field in Romania.

2 PRESENTATION OF THE OPTICAL MEDICAL DEVICES MARKET IN ROMANIA

According to a study conducted in 2019 by OECD Health and published in the journal Healthcare & Life Sciences Review, Romania is at the bottom of the ranking of European (EU) countries in terms of expenditures allocated to public health. In 2019, Romania allocated a budget of 1000 euros per person (2.5% of GDP). The EU average was approx. 3000 euros per person and in the top of European countries is Norway, which has allocated approx. 4400 euros per person (see Figure 1).

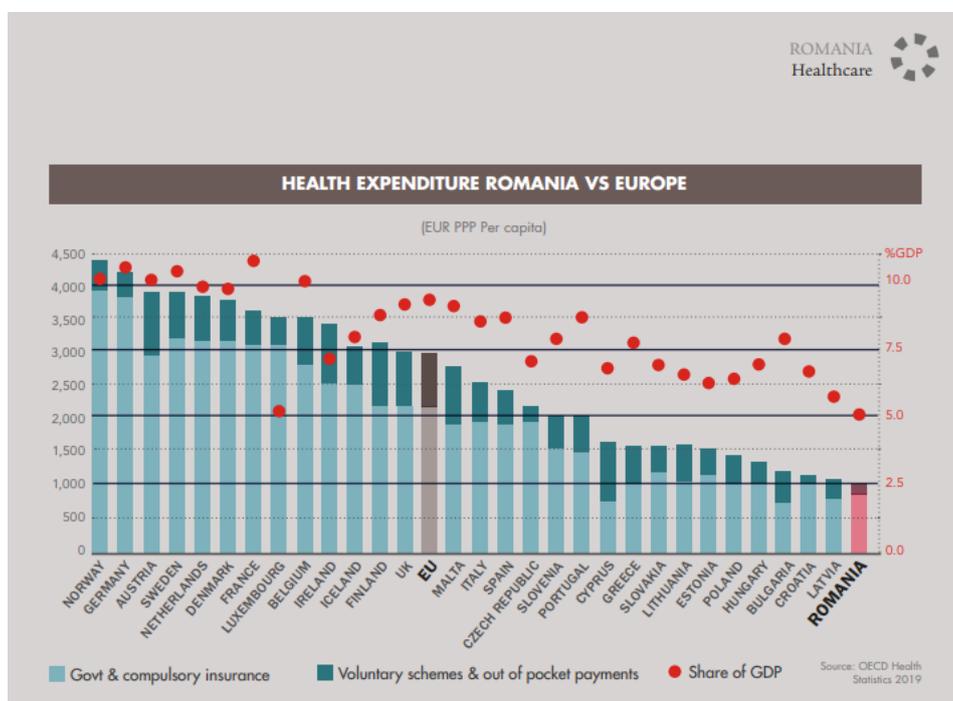


Figure 1. Expenditures allocated to public health by European states in 2019.
Source: Healthcare & Life Sciences Review

According to a statistic presented in 2017 by a Romanian company in the field of research and financial services, RisCo Business Intelligence, 45% of the Romanian population wore eyeglasses, a percentage close to the European average (48%). The highest percentage of the population of EU Member States, 85%, was in Slovakia and the lowest, 15%, in Croatia. Contact lenses are less used than eyeglasses and are mostly used for sports activities.

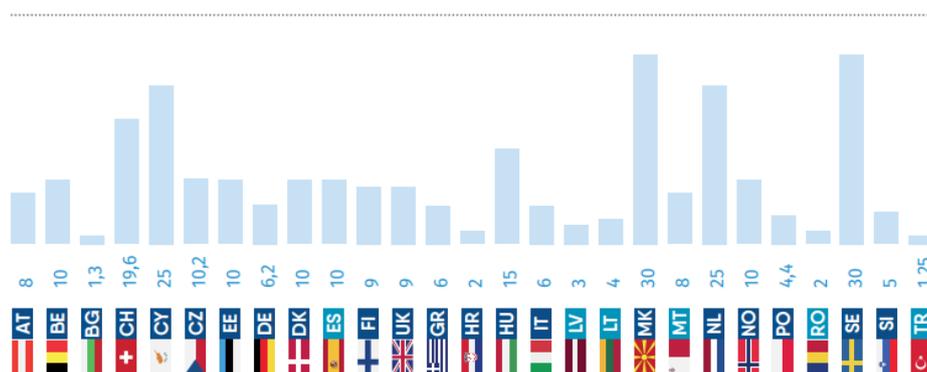
According to the latest social research study conducted at the level of European states, published in 2020 by the European Council of Optometry and Optics in ECOO-Blue Book-2020,

50% of the Romanian population wears glasses and 2% wears contact lenses (see Figure 2).

Free provision of health care services for the population in Romania is delivered from the funds allocated by the state, through the Health Insurance Houses.

According to the provisions of the National Health Insurance House (CNAS) in Romania, for the insured persons according to Law no. 95/2006 on health care reform, medical services that are not reimbursed from the Single National Health Insurance Fund are: "the value of materials necessary to correct **sight** and hearing."

People wear contact lenses (in percentage %)



How many people wear spectacles (in percentage %)

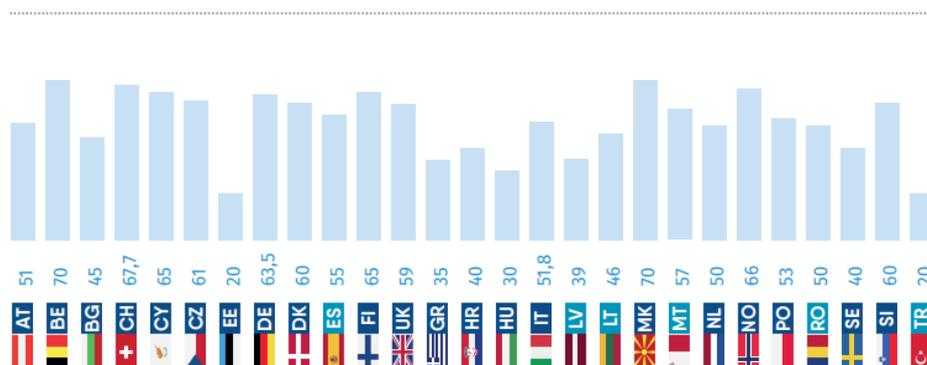


Figure 2. The situation of the population wearing glasses and contact lenses in European countries in 2020.

Source: ECOO-Blue Book-2020

According to the publication ECOO-Blue Book-2020, prepared annually by the European Council of Optometry and Optics, in Romania, for most young people, adults and the elderly, medical services for obtaining optical medical devices are paid from their own sources. Also, people who have low incomes or are unemployed are not exempt from payment. Exceptions are people who have disabilities, in this case they benefit from the general insurance granted by the state for disability and the medical service for the optical device is covered by this insurance.

Therefore, **the market of optical medical devices in Romania is represented by the retail segment**, which differentiates it from markets in other countries, where state funding is more consistent.

An additional argument in support of this conclusion is a statistic published by a world-renowned platform, *statista.com*, on the number of ophthalmic practices in European countries that provide paid medical services to patients. According to this statistic (see Figure 3), Romania is at the top of the ranking, 2.05 ophthalmic offices per 10,000 inhabitants, which means approximately 4,100 ophthalmic offices with retail sales to a population of approx. 20 million inhabitants.

According to the publication Healthcare & Life Sciences Review, the pharmaceutical market

in Romania, in 2019, was a total of 4,124 million euros.

The Romanian market for optical medical devices is estimated at approximately 200 million euros and is constantly growing. Compared to the other European countries, the profile market in Romania is only at 20% of the potential level it can reach.

The main companies relevant in terms of infrastructure and turnover specialized in the field of optical medical devices operating on the Romanian market are: Essilor Romania (part of the Essilor International Group), OPTIblu (operated by Optical Network), CLARFON SA (optic-medical.ro), NOAVIDET SRL (videt.ro), Optiplaza (optiplaza.ro), OptiCris (opticris.ro) and Lensa.ro. These companies are usually distribution partners of large companies producing optical medical devices worldwide (such as the Essilor International Group) but also offer processing services for optical medical devices and they produce various accessories for optical medical devices in Romania. These companies have also borrowed "lessons learned" from the commercial policy of manufacturing companies by opening, in addition to stores specializing in the sale of optical medical devices, medical offices in this field which are staffed with ophthalmologists who offer consultations to patients most often free of charge.

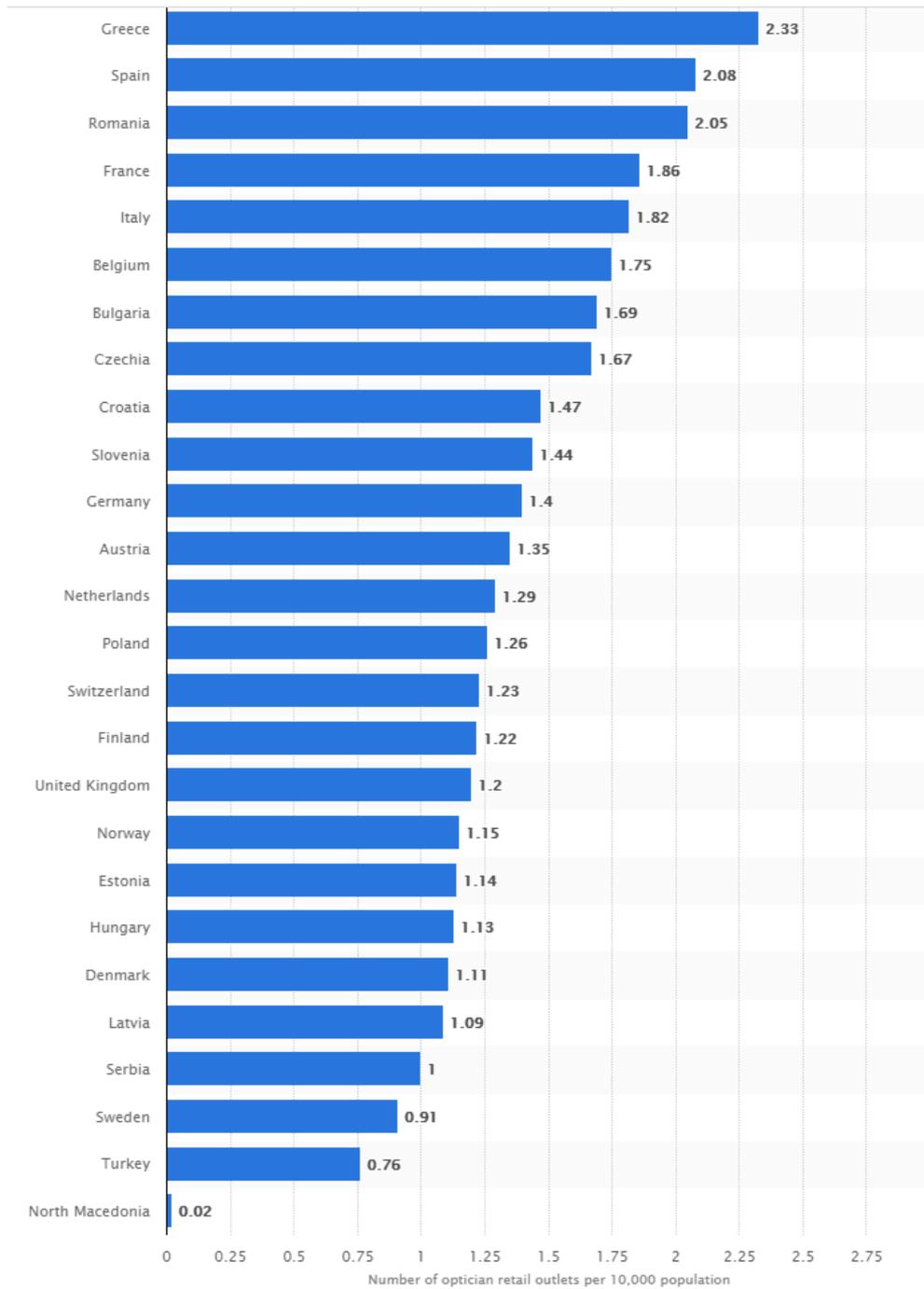


Figure 3. Situation of the number of optician outlets per 10,000 population in European countries in 2020.

Source: <https://www.statista.com>

3 INTERACTIONS BETWEEN THE PARTICIPANTS OF THE BUSINESS MODEL ON THE OPTICAL MEDICAL DEVICES MARKET IN ROMANIA

In general, a business model in the market for optical medical devices involves five components:

- the value proposition represents the products and services that are offered by the manufacturing company (simple, mixed, network of companies) directly to the customer and the customer is to appreciate their value;
- value creation means the transformation of resources (material, financial, etc.) of the producing company by using human and material potential, applying the methods of management and relationship with various entities into products or services that customers want to pay;
- value distribution is the means by which the manufacturing company establishes the interactions with a certain type of customer in order to provide value to it;
- value capture means the way in which the value proposition is transformed into a revenue stream and then the profit is captured after the company's expenses decrease;
- value communication means the delivery of the value proposition in the form of a message to target groups: customers, investors, partners, suppliers, etc.

The first contact of the end user (patient) with the product or service offered by the company occurs through the value proposition. The role of the end user in the business models of optical medical device manufacturers has a special implication because distribution chains are becoming more diversified and decentralized to allow more customization in the

production of these goods. Consequently, the end-user imposes the need to decentralize and diversify the organization of the distribution chain of the manufacturing company precisely because it pays for the value created and participates in the process of capturing value by the company.

Considering the fact that the end users of optical medical devices in Romania are financed in most cases from their own sources, the relevant participants of a business model on this (retail) market of optical medical devices in Romania are the material suppliers, the manufacturing company, the distribution companies, the marketing companies, the ophthalmic medical practices, and the patients (see Figure 4). The functioning of this market is also influenced by the government regulatory bodies, but their influence is more present for the market segment financed by the state through the National Health Insurance House.

To highlight the interactions between the participants of the business model on the optical medical devices market in Romania, it is important to describe the roles they each have.

The company producing optical medical devices is responsible for shaping market demand and controls the distribution of manufactured products. There are many foreign companies working in Romania in the field of optical medical devices, but they do not have a production location in Romania. Therefore, the activity of these companies is mainly focused on activities to promote products on the Romanian market through interaction with Romanian health professionals.

The key role of **suppliers** is to deliver to the producing company the raw material or semi-finished materials needed for the manufacturing process of optical medical devices.

The role of distribution companies on the optical medical devices market in Romania is to ensure the continuity of the presence of stocks of optical medical devices of the manufacturing company for ophthalmic offices or specialized

stores (their own stores or other partner companies' ones) in the field of glasses and contact lenses.

Patients are the end users of optical medical devices. They provide the manufacturing companies with information on the personal satisfaction of the purchased product which allows the quality of the manufactured products to be adjusted.

Because in Romania optical medical devices are distributed based on a medical prescription after performing an ophthalmological consultation, the role of the ophthalmologist is particularly important because it has the power to greatly influence the patient in choosing a particular optical medical device.

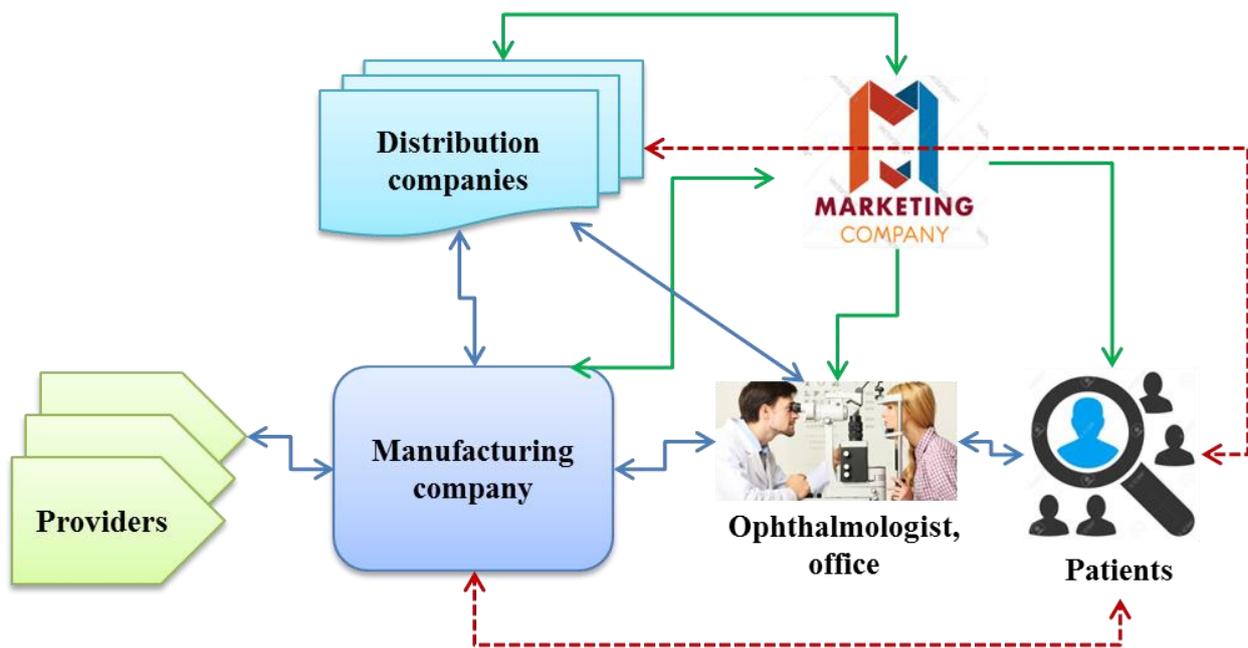


Figure 4. Value chain participants and the interactions between them within a business model on the retail market of optical medical devices in Romania

Marketing companies also play an important role in the value chain because they deal with the development of the promotional message of an optical medical device and develop a strategy to transmit this message to the target market segment (both end users and ophthalmologists). Marketing companies can be partners with the manufacturing company but also with the distribution company to offer its services to promote an optical medical device on the market.

This article addresses the retail market of optical medical devices and is relevant in the current specific conditions of the optical medical

devices market in Romania. The following flows take place in the interaction between the manufacturing company and suppliers: material, financial and informational (see Figure 5). In this interaction the flow of materials usually goes from the suppliers to the manufacturing company and the financial flow usually goes from the manufacturing company to the suppliers. The financial flow is characterized by a compensation to be paid by the manufacturing company for the raw materials and subassemblies received from suppliers.

Sometimes in this interaction reverse flows (recycling flows) can take place between the

manufacturing company and suppliers. In this case the flow of materials goes from the manufacturing company to suppliers in the form of defective optical medical devices intended to be recycled by suppliers and the financial flow goes from suppliers to the manufacturing company in the form of financial compensation

for recycled optical medical devices. Within this interaction there is also a mutual information flow that starts with the forecast of the demand for raw materials and materials up to customs and tax formalities that suppliers need (from abroad for example).

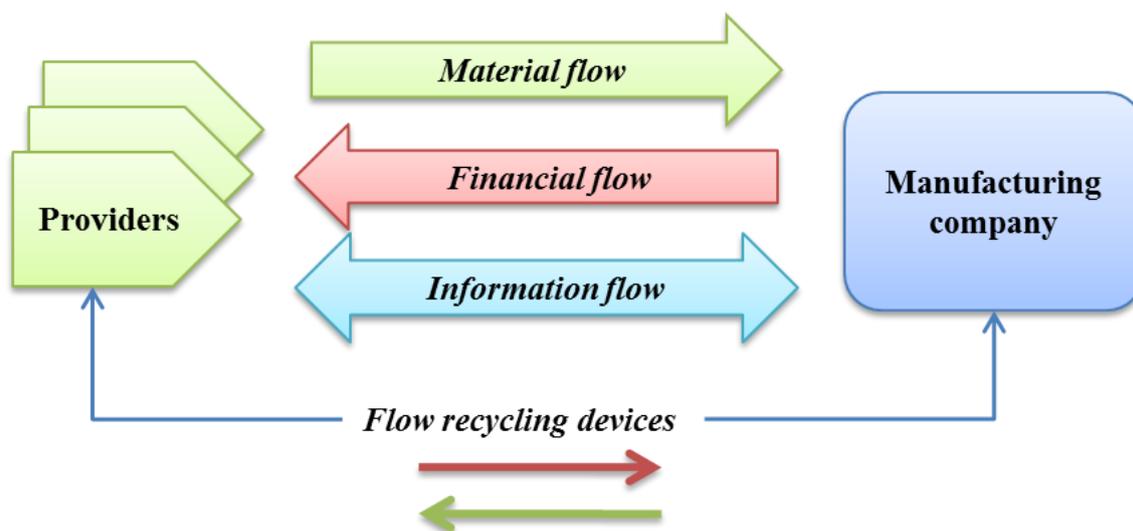


Figure 5. Interactions between material suppliers and the manufacturing company of optical medical devices in Romania

There are exchanges of information on the performance of contracts, confirmations, and notifications of change so that the materials are in the necessary order and at the right time in the next phase of the supply chain. Over-production or a lack of optical medical devices on the market may occur during the interaction between the manufacturer and the suppliers. To prevent such situations, the representatives of the management of the manufacturing company must carry out joint activities (formal coordination meetings regularly) with the representatives of the management of the supplying company to establish the adjustment and correction of the demand plan for raw materials and subassemblies of optical medical devices.

The interactions between the manufacturing company and the distribution company of optical medical devices are carried out to forecast the demand for these devices and to plan the necessary quantities of stocks in the distributor's warehouses. Within this interaction the following flows take place: supply, financial and information (see Figure 6). The material supply flow represents the supply of distribution companies with optical medical devices produced by the manufacturing company. The material flow can sometimes be the opposite from distributors to the manufacturer in case of return of defective or unsold optical medical devices due to "moral" wear (they are technologically and qualitatively outdated by other better performing devices

from other manufacturers). The financial flow from the manufacturer to the distributors is characterized by a payment (it may be a percentage of the volume of supply of goods) to the service of distribution or sale of optical

medical devices. And the reverse financial flow is characterized by the supply of the bank account of the manufacturer by distributors for capitalized optical medical devices (redistributed or sold).

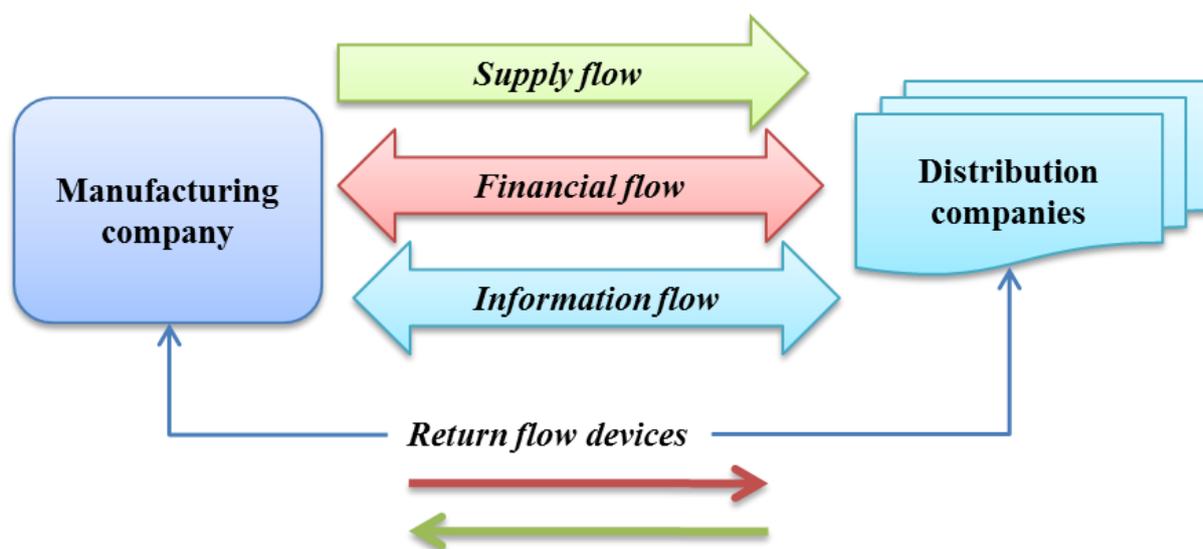


Figure 6. Interactions between the manufacturing company and the distribution companies of optical medical devices in Romania

Sometimes this mutual financial flow includes mutual financial compensation in case of risks of different types (occurring in the internal or external supply chain such as stock market disruptions, financial and foreign exchange market, crises of different types, natural disasters etc.). The reciprocal information flow (in both directions) refers to exchanges of information on the performance of contracts, confirmations, and notifications of change so that the supply chain to replenish stocks of optical medical devices is viable. At the same time, information is exchanged regarding the evolution of the market (trends, needs for certain specific devices, the situation of competition). The manufacturing company as part of the collaboration with distributors tries primarily to ensure the availability of optical

medical devices in the specialty stores of the distribution company to increase the number of end users loyal to the "brand" of the company. The collaboration relationship between the production company and the distribution company is usually a formal one run on a contractual basis with very well-established clauses. To ensure its success on the market, the distribution company has the interest to sell as many of the stocks of optical medical devices provided by the manufacturing company.

To achieve this goal, the distribution company hires a marketing company on a contractual basis to promote the optical medical devices of the manufacturing company in a target market. This market comprises end-users (wearers of glasses or contact lenses) and ophthalmologists who are interested in new,

medically effective, and affordable products of good quality. The manufacturing company also hires a marketing company on a contractual basis to promote the optical medical devices it produces to the same target market as an alternative channel for transmitting valuable communication to end users.

Figure 7 shows the flows that take place between the marketing company and the manufacturing company, the distribution companies, ophthalmologists and patients.

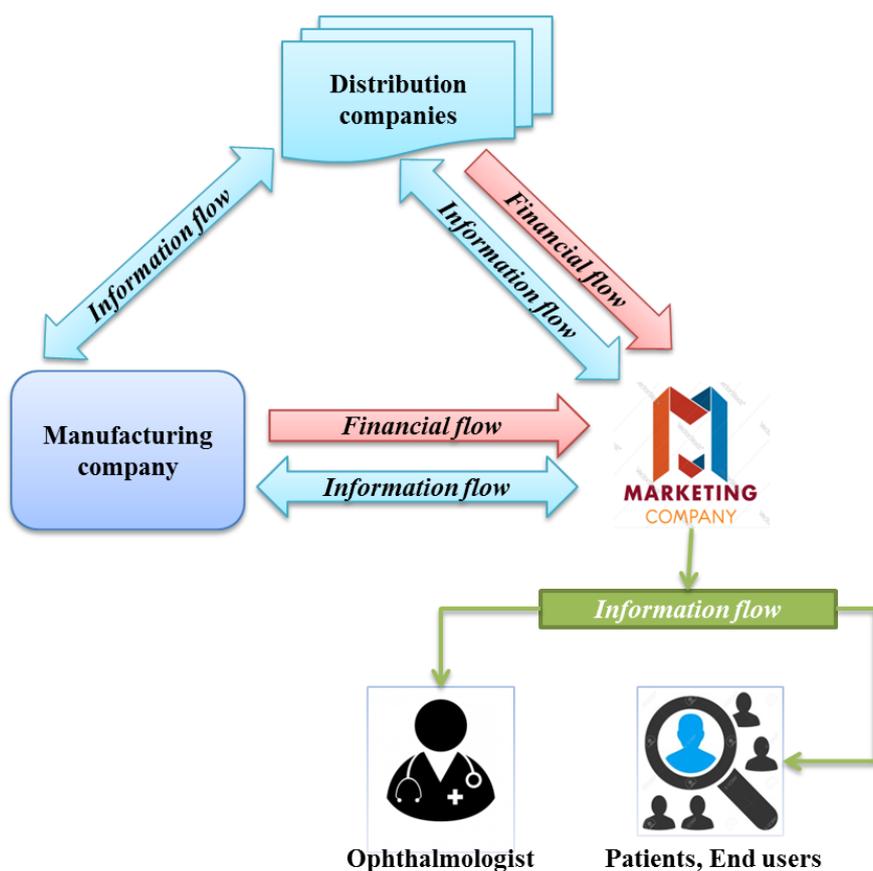


Figure 7. Interactions between the marketing company and the manufacturing company, distribution companies, ophthalmologists, and patients

The information flows between the manufacturing company or the distribution companies and the marketing company are reciprocal and include various formal arrangements (contracts, agreements), coordination meetings from the manufacturing company or distribution companies, respectively information (reports, presentations) by the

marketing company regarding the evolution of the target market (of optical medical devices in Romania) and of the results of the market survey regarding the promoted optical medical devices.

The financial flows between the manufacturing company or the distribution companies and the marketing company are unidirectional and are characterized by the

payment to the marketing company for the promotional services provided.

The information flows between the marketing company and the ophthalmologists or patients are unidirectional and are characterized by the communication of value transmitted to them. Value communication is translated into providing useful information in various forms (online, printed brochures, catalogs, demonstration videos) on optical medical devices (quality, technological performance, attractive price, related bonuses) as well as providing samples of medical devices optical instruments that are used to demonstrate technological quality and performance. The purpose of the value communication is to draw the attention of ophthalmologists and patients to the optical medical devices of the manufacturing company to persuade them to opt (ophthalmologist to prescribe and the patient to accept the prescription and pay) for these devices. Both the manufacturing company and the distribution company have their own stores specializing in optical medical devices. At this level there is a direct interaction between the manufacturing company and the distribution company and the end users (see FIG. 4). Thus, the manufacturing or distribution company can provide directly without intermediaries certain useful information for end users (especially those who already wear glasses or contact lenses and know certain technical aspects about what they need).

In the interaction of the manufacturing company with the ophthalmologists, the manufacturing companies primarily aim to organize a large number of educational activities to allow them to exchange views on issues arising from professional practice. In addition to the presence of an educational component, these events have a positive effect on the image of the manufacturing company. Many educational events (congresses, conferences) include lectures by famous professionals in the field who have achieved certain notable

performances that can be distributed in the form of "lessons learned" from practice.

The interactions between the manufacturing company and the medical optics offices with the sale of optical medical devices are manifested in the form of coordination of patient flows directed by the ophthalmologists for the purchase of optical medical devices of the manufacturing company. The sales representative of the manufacturing company provides information to the ophthalmologists about the locations where the company sells the products and about the types of optical medical devices available. It also provides information or even trains ophthalmologists on in-depth knowledge of the characteristics of manufactured medical optical devices resulting from scientific and experimental studies conducted by the manufacturing company. Manufacturing companies offer new technologies and carry out educational activities for health professionals to help them explore new approaches to ophthalmic medical therapy.

4 CONCLUSIONS

Following the collection of data and information obtained from the documentation of credible sources of information (national and international research institutes, national and international government institutions, specialized publications in the economic, financial, medical-ophthalmological, optometry industry) on the functioning of the market of optical medical devices in Romania and after their analysis, we present the following conclusions:

- the Romanian market in general is an emerging (developing) market.
- the market of optical medical devices in Romania is a component part of this market and is on a development trend with a major difference (over 50%) to be recovered compared to the potential it can reach.

- the market of optical medical devices in Romania is dominated by the retail segment and the necessary infrastructure in the field is in a very good situation (there is a very large number of ophthalmic medical offices per 10,000 inhabitants compared to other developed European countries such as Germany, The Netherlands or developing countries such as Poland, Hungary).
- approximately 50% of Romania's population wears glasses and the trend in this "digital age" is increasing.
- the provision of optical medical devices on the Romanian retail market is particularly good. There are many world-renowned companies present on the Romanian market, but also more recently established Romanian companies, but with a rapid growth rate according to turnover.

After analyzing the participants and their interactions in the business model on the optical medical devices market in Romania based on information collected from credible sources, we found that currently the manufacturing company is the dominant factor in the business model that coordinates the entire creation process, delivery, and communication of value to the customer. Most of the experts and representatives of the leadership of some famous companies in the field of optical medical devices in Romania send messages regarding the development of profile companies, the trend being an ascending one, the turnover increases from year to year. These messages are motivated by the fact that the potential of the Romanian profile market is huge, which leads to an increase in production and consumption.

In the interactions between the participants of the business model on the optical medical devices market, we identified that the ophthalmologist could play a key role in the interaction between the company that provides

optical medical devices and the end users who pay for these devices. The key role of the ophthalmologist is represented by his loyalty for certain optical medical devices, for a certain brand of the company and this loyalty being materialized by prescribing to the patient certain optical medical devices. This aspect can be verified through an in-depth practical study, taking direct interviews with ophthalmologists, and establishing questions that reveal the analysis of loyalty.

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