

THE IMPACT OF CRM SYSTEM USE ON COMPANIES' CUSTOMER UNDERSTANDING: THE CASE OF THE RUSSIAN OPHTHALMOLOGY MARKET

UTJECAJ KORIŠTENJA CRM SUSTAVA PODUZEĆA NA RAZUMIJEVANJE POTROŠAČA: SLUČAJ RUSKOG OFTALMOLOŠKOG TRŽIŠTA

TRŽIŠTE

UDK 658.89:615.012>(470+571)
Preliminary communication
Prethodno priopćenje

Denis Klimanov

Postgraduate student, Strategic Marketing Department
National Research University Higher School of Economics
Kirpichnaya st, 33, Moscow, 105187, RUSSIA
Mobile: ++7 916 316 2391
E-mail: klimanov_denis@inbox.ru

Ekaterina Frolkina

Postgraduate student, Project Management Department
National Research University Higher School of Economics
Kirpichnaya st, 33, Moscow, 105187, RUSSIA
Mobile: ++7 916 932 8005
E-mail: Ekaterina.frolkina@gmail.com

Key words:

customer relationship management, CRM system, pharmaceutical company, customer loyalty

Ključne riječi:

CRM, CRM sustav, farmaceutska poduzeća, lojalnost potrošača

ABSTRACT

As the customer relationship management process comes to play an increasingly important role in business success, a number of authors are attempting to evaluate the impact of various CRM process components on the quality of company interaction with customers and, ultimately, on company performance. This paper explores the impact of CRM systems on the quality of companies' customer understanding. This understanding is measured in the context of an international pharmaceutical company in

SAŽETAK

S obzirom na rastuću važnost uloge upravljanja odnosima s potrošačima (CRM) za uspjeh poslovanja, brojni autori pokušavaju ocijeniti utjecaj različitih dijelova CRM procesa na kvalitetu interakcije poduzeća s potrošačima i konačno na rezultat poslovanja poduzeća. Rad istražuje utjecaj CRM sustava na kvalitetu razumijevanja potrošača od strane poduzeća. Razumijevanje se mjeri u kontekstu međunarodnog farmaceutskog poduzeća na ruskom tržištu. Terensko istraživanje temelji se na kvantitativnim podaci-

the Russian market. The field research is based on quantitative data from online questionnaires and telephone interviews. The sample consists of 64 company representatives and 217 ophthalmologists. The authors developed and tested a model of physician loyalty drivers and studied employees' perceptions of the CRM system. The findings of this paper demonstrate that, despite the fact that a CRM system is actively used and perceived as a crucial part of the customer relationship management process within the company, understanding of key customer loyalty drivers needs to be significantly improved. The paper contributes to existing theory by evaluating the link between the use of CRM applications and customer relationship performance as well as by developing a physician prescription loyalty influencers framework in the context of the Russian pharmaceutical market. This research could be used by other pharmaceutical companies as well in order to understand the influence of their CRM applications on customer loyalty and also to identify the drivers of physicians' prescriptions.

ma prikupljenim putem *online* upitnika i telefonskih intervjua. Uzorak obuhvaća 64 predstavnika poduzeća i 217 oftalmologa. Autori su razvili i testirali model lojalnosti liječnika i istražili percepcije zaposlenika farmaceutskog poduzeća o CRM sustavu. Unatoč činjenici o aktivnom korištenju CRM sustava te njegovoj percepciji kao ključnom dijelu procesa upravljanja odnosima s potrošačima poduzeća, rezultati pokazuju da je ipak potrebno značajno poboljšati razumijevanje ključnih pokretača lojalnosti potrošača. Rad doprinosi postojećoj teoriji procjenom povezanosti korištenja CRM aplikacija i rezultata odnosa s potrošačima, kao i razvijanjem okvira čimbenika utjecaja na lojalnost liječnika pri izdavanju recepta u okviru ruskog farmaceutskog tržišta. Ovo bi istraživanje moglo biti korisno i drugim farmaceutskim poduzećima da bi se shvatio utjecaj njihove primjene CRM-a na lojalnost potrošača, ali i na identificiranje pokretača lojalnosti liječnika.

1. INTRODUCTION

Nowadays, as markets become more competitive, saturated and challenging, many companies are increasing their investments in building long-lasting relationships with their customers in order to sustain their competitive advantage. These relationships serve as a crucial element in determining company success in the marketplace. The importance of the relationship factor has been recognized particularly within relationship marketing theory, which generally refers to all marketing activities directed toward establishing, developing and maintaining successful relational exchanges (Hunt & Morgan, 1994). These relational exchanges are classified in four groups: supplier partnerships, lateral partnerships (competitors, non-profit organizations, government), buyer partnerships (customers) and internal partnerships (employees, departments) (Hunt & Morgan, 1994). This means that relationship marketing analyzes company relationships within the scope of all existing partners collaborating with the company in order to produce customer value, which is also consistent with the so-called "network paradigm". This paradigm describes the company as the focal element of a value creation network, and it is based on relational exchanges and partnerships between various network actors (the company, suppliers, distribution channels, customers, environmental factors). Relationship marketing is also linked to the resource-advantage theory, which is described in detail by Hunt and Morgan (1997). This theory, in opposition to the neoclassical economic theory, is developed closer to real world complex operating conditions. It assumes that companies operate under conditions of imperfect information about customers and competitors, explains firm diversity and incorporates environmental factors (political and social institutions). Relationship marketing within a company is realized through a customer relationship management (CRM) process, which helps to implement the relationship strategy. The key benefit of a CRM process arises from the fact that creating relationships with new customers entails much higher costs than

retaining existing ones; therefore there is a clear economic gain in investing into the establishment of CRM processes in a company (Gronroos, 1995). If CRM is managed in a proper manner, it helps the company to significantly enhance its understanding of its customers, which then results in successful fulfillment of their needs and, as a result, increased customer loyalty. This understanding primarily involves the study of factors influencing customer loyalty, as these factors vary significantly depending on market specifics.

A CRM process consists of different parts, one of which relates to customer information collection, analysis and use by company employees (Payne & Frow, 2005). This information management is executed with the help of the CRM system, a computerized application storing necessary customer data. Many companies invest significant resources in setting up and maintaining these systems; this investment is driven by a strong belief in their value to the business. However, some authors argue that the impact of CRM systems on customer understanding is doubtful and, therefore, this link needs to be better investigated.

This paper explores the impact of CRM systems on the quality of customer understanding based on the case of a company in the Russian ophthalmology market. This understanding is evaluated in the context of factors influencing physician loyalty. Physician loyalty drivers are adapted to the context of the Russian market by using the conceptual framework of Waheed, Jaleel and Laeequddin (2011). These factors are then tested by using linear regression analysis. The research involves 64 company employees and 217 physicians.

The theoretical contribution of this paper to the existing literature is twofold. Firstly, we evaluate the link between CRM applications and customer relationship performance, as it remains unclear in the existing body of research. Secondly, we develop a physician prescription loyalty influencers framework in the context of the Russian pharmaceutical market. In terms of practical contribution, as there is very limited empirical research devoted to CRM and the pharmaceutical

market in Russia, we provide a concrete example of the CRM system use evaluation in a pharmaceutical company and also give an estimation of factors influencing doctors' prescriptions in the ophthalmology sub-market.

This article is structured as follows: firstly, we conduct a literature review, looking primarily at the role of CRM within company performance and discussing pharmaceutical market specifics. Then we present our research methodology aimed at evaluation of the perception of the CRM system at the studied company and evaluation of physician loyalty drivers. After that we discuss the results of our research and, finally, make a conclusion regarding the impact of CRM systems on customer understanding and highlight the limitations of this paper and its theoretical and practical implications.

2. LITERATURE REVIEW

Multiple academic research papers argue that the customer relationship management process plays an outstanding role in successful business performance nowadays (Narver & Slater, 1990; Hogan, Lemon & Rust, 2002; Berger et al., 2002; Yim, Anderson & Swaminathan, 2004; Boulding, Staelin, Ehret & Johnston, 2005; Garrido-Moreno, Lockett & Garcia-Morales, 2014; Josiassen, Assaf & Cvelbar, 2014). It is argued that CRM positively impacts customer retention and loyalty, as well as customer profitability by helping companies to create appropriate value for the customer (Kim, Suh & Hwang, 2003). Therefore, CRM is defined as a strategic approach that is concerned with creating improved shareholder value through the development of appropriate relationships with key customers and customer segments (Payne & Frow, 2005). A CRM process is an essential part of companies' market orientation, defined as the organization culture that most effectively and efficiently creates the necessary behaviors for the creation of superior value for customers and continuous superior performance for the business (Narver & Slater, 1990).

The role of CRM is especially important in the case of pharmaceutical companies primarily because they approach their customers on an individual level. These companies base their work on face-to-face interaction with healthcare professionals (HCPs) via medical representatives (MRs), whose daily job is concerned with promoting companies' products and services. These people represent one of the most valuable assets for pharmaceutical companies. Companies spend a significant amount of resources on medical (or sales) representatives, accounting for up to 40% of their sales. These costs include staff salaries, bonuses and commissions, expenses and infrastructure costs (Zoltners, Sinha & Zoltners, 2001). The goal of interaction between medical representatives and HCPs (doctors, other medical institutions personnel, pharmacy staff) is to reach an agreement to prescribe, use (for doctors and healthcare institutions) and recommend (for pharmacists) companies' products. In the case of prescription medicines, the role of the doctor as a key influencer of consumer choice regarding the product is most critical. In many markets it is not possible to advertise prescription medicines directly to consumers, and pharmacists have no right to influence a doctor's prescription. In the case of OTC (over-the-counter, non-prescription) medicines, the role of the doctor is still critical but consumer choice is also significantly influenced by mass media advertising, pharmacist recommendation, friends, personal experience and other factors. Understanding the importance of addressing customers' needs, researchers suggest new models and approaches for creating more effective marketing and sales force strategies for pharmaceutical companies (Rao, 2002).

The pharmaceutical industry is driven by numerous challenges nowadays, such as information asymmetry between doctors and patients, high marketing costs, a profitability squeeze resulting from increasing R&D spend, a decrease in purchase power, tightening regulations on pharmaceutical promotion, parallel imports, intellectual property rights and patent expiration issues and an increase in the potential of generics (Rod, Ashill & Carruthers, 2007). Companies operating

in this challenging environment invest significant resources to build and maintain their competitive advantage, and this advantage directly depends on their customers' loyalty.

Having said all of the above, we can state that the business success of pharmaceutical companies depends directly on physicians' judgment of pharmaceutical products and their prescription habits (Waheed et al., 2011). Based on a physician's decision regarding the appropriate treatment approach, a patient then, in the majority of cases (e.g. in the Russian market this happens in approximately 70% of cases, according to Synovate Comcon research), will go to the pharmacy and choose exactly the drug prescribed by the physician. This is, as mentioned above, especially important in the case of prescription drugs (drugs which the pharmacist to substitute the initially prescribed drug). The situation stands in contrast to over-the-counter drugs, where prescription is not required. We should also acknowledge that some researchers challenge the effectiveness of doctors' complete dominance when it come to the of choice treatment (a paternalist type of patient-provider relationship), as they highlight the importance of shared decision making in the interaction between doctors and patients (Makoul & Clayman, 2006) and a more client-centered relationship due to the fact that client medication behavior influences health outcomes, utilization and costs (Chewning & Sleath, 1996).

The key issue for companies in relation to physician prescribing habits relates to identification of the factors influencing prescribers' loyalty. If a company possesses no relevant understanding of these loyalty drivers, it becomes a significant challenge to build or maintain the right customer strategy and to improve company performance. There are multiple views in the literature on this issue (Wright & Lundstrom, 2004; Ladeira, Dalmoro, Maehler & Araujo, 2011; Waheed et al., 2011; Gönül & Carter, 2012). Among the factors influencing doctors' prescriptions, different authors mention frequency of product detailing by medical representatives, length of representative visit (or "call"), free samples, cost-benefit ra-

tio, product characteristics, product information, branding, advertising, corporate reputation and professional influence by a doctor's colleagues. In order to evaluate the influencers of doctors' prescription loyalty, some researchers offer to apply factor analysis to develop perceptual maps and reveal the key choice dimensions, as well as perceived competitive positions (Monteiro, Dibb & Almeida, 2010). Regardless of the existing diversity of factors, the situation becomes clearer if these factors are studied in a particular environment (e.g. country, therapeutic area) and not in an abstract way. The specifics of the environment can significantly help to understand the results and to alter a company's approach towards its customers. For example, in some therapeutic areas, which are mainly state-financed and feature tenders for the mass purchase of drugs, product price may play the most important role in the decisionmaking process. At the same time, frequent and regular visits by company representatives to these tender-based state institutions may not provide the desired return on investment for the company since tenders are fragmented and usually take place a fixed number of times in a year. Therefore, company activities should be aligned with these specifics in order to provide the desired impact and to be profitable. Also in some markets there is a number of legal limitations on the activities which can be performed by pharmaceutical companies (e.g. in Russia, it is legally forbidden to distribute free drug samples to doctors or to advertise prescription drugs directly to customers). Nevertheless, despite all the specifics mentioned above, investigating the particular drivers of customer prescription loyalty can significantly help companies to understand doctors' responses to their promotional efforts.

One of the most impactful influencers of company's proper understanding of its customers is the company's ability to acquire, manage and possess the necessary customer information, and this is also key to sustaining a competitive advantage (Mithas, Krishnan & Fornell, 2005). This statement is supported by the concept of market orientation. Perceived as a crucial element of company

market orientation, customer orientation necessarily involves acquiring and disseminating information about customers (Narver & Slater, 1990). Payne and Frow (2005) introduced a conceptual framework for CRM strategy which consists of five building blocks: strategy development, value creation, multichannel integration, information management and performance assessment. This framework is aimed at enhancing customer value by providing deeper insight into achieving success with CRM strategy and implementation. The information management process includes a so-called "data repository" also associated with the CRM system – a special computerized toolkit which stores key customer data collected by the company and is used by employees to plan, execute and analyze their customer activities. It is argued that the use of such CRM applications is positively associated with improved customer knowledge and satisfaction (Mithas et al., 2005). If these systems are perceived and used properly by employees, they can significantly improve the company's customer understanding and, in turn, help to enhance promotional strategies and improve company results and competitiveness. However, some studies demonstrate that there is no relationship between the use of these CRM applications and customer relationship performance (Jayachandran, Sharma, Kaufman & Raman, 2005; Srinivasan & Moorman, 2005). For example, Srinivasan and Moorman (2005) found that such CRM dimensions as customer relationship orientation and customer-centric management systems positively impact customer relationship performance, while technology use failed to demonstrate this link. Also, according to Homburg, Grozdanovic & Klarmann (2007), some business practitioners even stated that CRM has a negative impact on company performance. As this appears to be a controversial aspect of the CRM process, more empirical evidence is needed to demonstrate the link between the utilization of CRM systems and the quality of companies' customer understanding. In order to make this investigation more focused and valuable, especially for the pharmaceutical business, the current paper evaluates the connection be-

tween CRM system use and quality of customer understanding in the context of factors influencing customer loyalty in the Russian ophthalmology market.

3. RESEARCH METHOD

The research was based on an international pharmaceutical company operating in the Russian market. The company produces original medicines and is specialized in ophthalmology, medical aesthetics and neuroscience. The company is one of the key global players in the ophthalmology market.

In order to achieve the goals of the current paper, the research was conducted in two parts. The first part was aimed at understanding the current perception of the CRM system by employees (medical representatives and their managers) and its role in the company. This perception was studied in terms of the following aspects, which were identified during multiple interviews with company management: frequency and purpose of CRM system use, analytical capabilities of the CRM system, quality and completeness of customer data, perceived correlation between salespeople activity KPIs and business results (company sales and market share), and value of the system for employees' work. The sample consists of 64 employees (54 medical representatives and 10 regional managers) from the Ophthalmology division from all regions of Russia, most of them (89%) having more than one year's experience in using the studied system. Field research was conducted during a two-week period from September 2, 2014 to September 14, 2014. We used an online questionnaire with open and multiple choice questions. This questionnaire was pre-tested using a group of Moscow-based employees. As a result we achieved a 75% overall response rate.

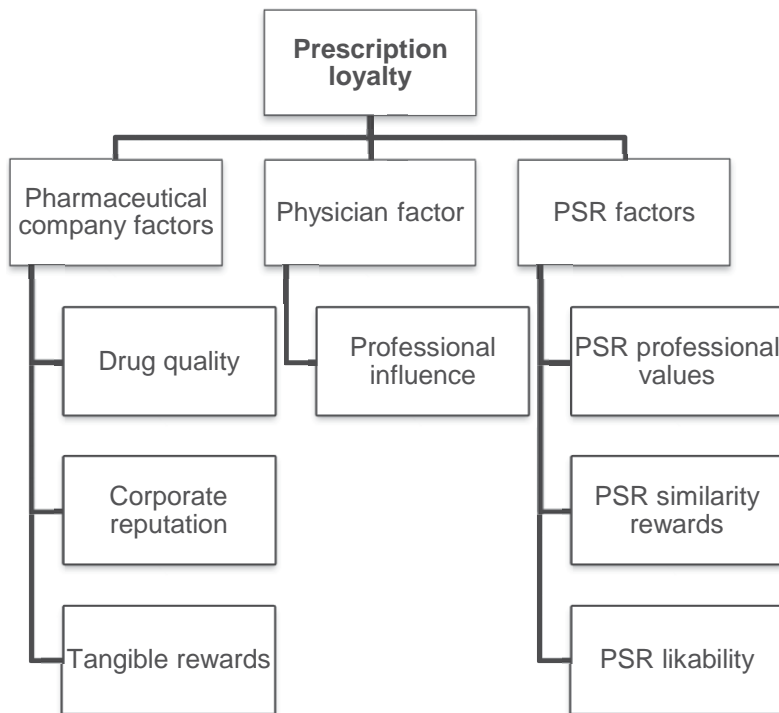
In the second part of the research we built a customer loyalty drivers model using the example of the Russian ophthalmology market in order to understand what impacts the prescriptions

of doctors. This part was conducted in the period between October 1 and 14, 2014. In this part of the research we worked with the help of an external agency. In order to do this, we adapted the prescription loyalty model from Waheed et al. (2011) to reflect the specifics of the studied market. The original model was constructed and tested using the case of the pharmaceutical market in India. This model consists of three groups of factors that influence prescription loyalty: pharmaceutical company factors, physician factors and pharmaceutical sales representatives (PSR) factors. Pharmaceutical company factors include drug quality (measured by existing side-effect profiles, efficacy, dosage forms and indications), corporate reputation (trust, admiration and respect of physicians) and tangible rewards (such as gifts and presents, free samples, financing of conference participation, travel and accommodation, education, meals, honoraria). Physician factors relate to the professional influence of other physicians. The authors state

that this factor indirectly affects the prescription loyalty of the doctor. Social interactions and the peer effects of “opinion leaders” are key drivers of prescription. Pharmaceutical sales representatives (PSRs) factors include professional values (honesty, trust and ethics), similarity rewards (when physicians perceive PSRs as similar to themselves, holding common beliefs) and likability (when physicians assess PSRs as friendly, nice and pleasant to be around). This model is demonstrated in Figure 1.

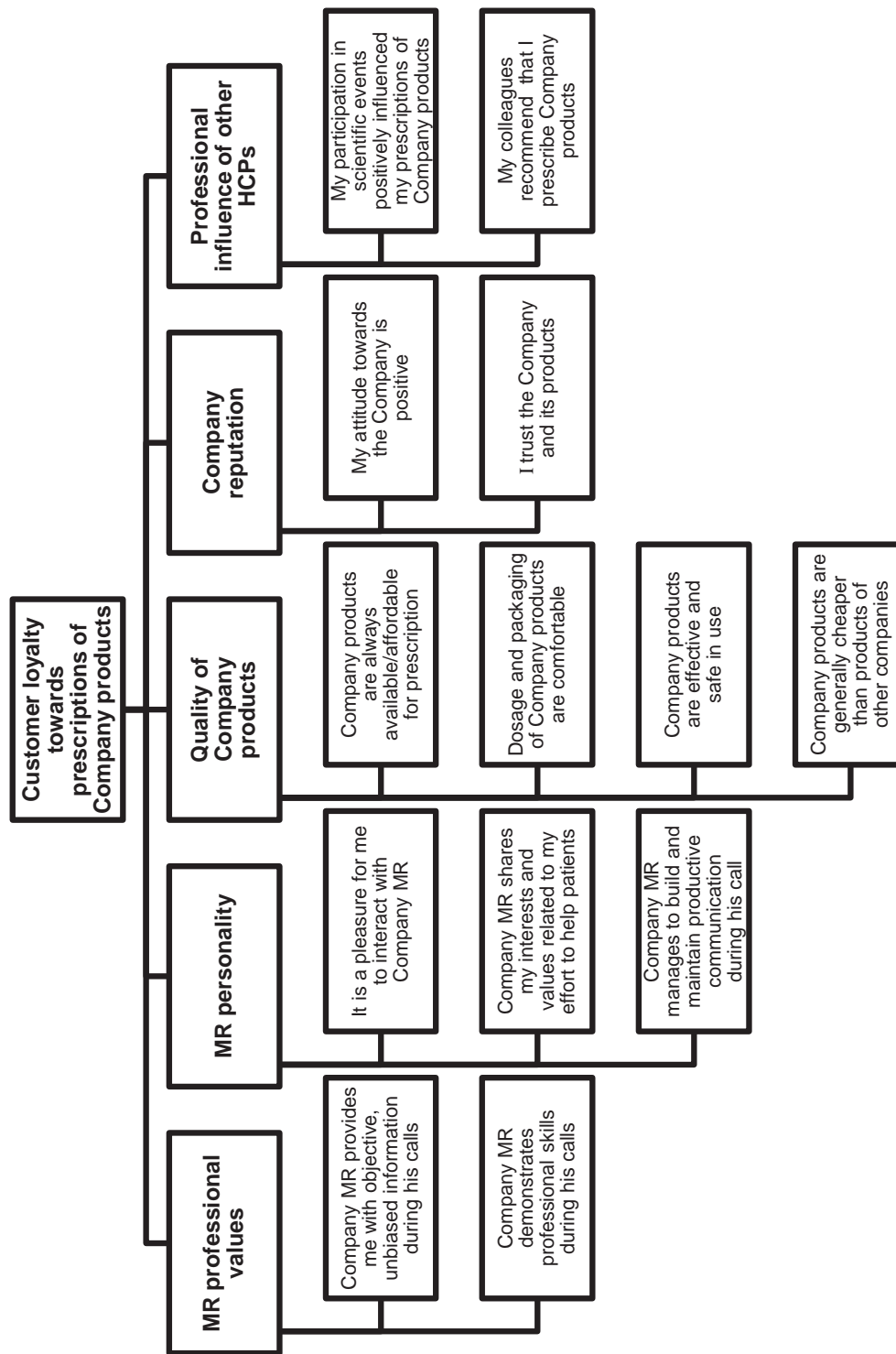
Considering the specifics and operating conditions of the Russian pharmaceutical market, the following groups of loyalty drivers were tested in this research: medical representative’s professional values, medical representative’s personality, quality of the company’s products, company reputation and professional influence of other healthcare professionals. We did not evaluate so-called “tangible rewards” parameters for compliance reasons, as most of these are forbidden by

Figure 1: Prescription loyalty drivers model



Source: Waheed et al., 2011

Figure 2: Prescription loyalty drivers model adapted for the Russian ophthalmology market



Russian law. Based on multiple interviews with company management, we operationalized these drivers by the following parameters (Figure 2).

Using the adapted prescription loyalty model, we formulated 13 hypotheses within the five different groups of factors stated in Figure 2. We focused on physician perception of each factor. These hypotheses are the following:

- H1. A higher perceived level of information provided by the MR leads to a higher level of prescription loyalty.
- H2. A higher perceived level of MR's professional skills leads to a higher level of prescription loyalty.
- H3. A higher perceived level of interaction with the MR leads to a higher level of prescription loyalty.
- H4. A higher perceived level of shared interests and values leads to a higher level of prescription loyalty.
- H5. A higher perceived level of productive communication leads to a higher level of prescription loyalty.
- H6. Product availability leads to a higher level of prescription loyalty.
- H7. Comfortable dosage and packaging of the product leads to a higher level of prescription loyalty.
- H8. Product effectiveness and safety leads to a higher level of prescription loyalty.
- H9. Lower price of the product compared with the price of competitors leads to a higher level of prescription loyalty.
- H10. Positive attitude towards the company leads to a higher level of prescription loyalty.
- H11. Trust in the company and its products leads to a higher level of prescription loyalty.
- H12. Participation of doctor in scientific events sponsored by the company leads to a higher level of prescription loyalty.
- H13. Recommendations of doctor's colleagues to prescribe the company's products lead to a higher level of prescription loyalty.

In order to test the model, we conducted held telephone interviews involving 217 healthcare professionals from five major cities of Russia

where this company operates: Moscow, St Petersburg (North-West region), Novosibirsk (Siberia & FE region), Nizhny Novgorod (Volga region), Ekaterinburg (Urals region). The doctors were randomly selected from the CRM system. The overall response rate among the doctors was 78%. The doctors were asked whether they agree or disagree with the statements shown above in Figure 2. Customer loyalty was measured using the following statements: I regularly prescribe the company's products, preferring them to products of other manufacturers (1st measure); among the products of different manufacturers, the company's products are preferable for prescriptions (2nd measure); I use the company's products in most of my practice when it is suitable according to medical indications (3rd measure).

The same set of variables (16 in total: 13 characterizing physicians' attitude towards the company, its products, medical representatives, professional influence from other HCPs, and three which reflect physicians' prescription habits) was tested with company medical representatives and their managers, who were asked about their target audience. For this purpose all the questions were mirrored in order to compare how these aspects were perceived by physicians with how they were perceived by company representatives (e.g. if the statement for doctors was "Company MR provides me with objective, unbiased information during his calls", the equivalent statement for company representatives was "You provide your physicians with objective, unbiased information during your calls"). The same number of participants from the company was involved as in the first part of the research and we achieved an 86% response rate. As a result, this part of the research allows us to reach two goals, namely: to highlight the factors influencing doctors' prescriptions in the Russian ophthalmology market; and to measure the quality of the company's customer understanding.

We used a linear regression model to highlight the factors influencing doctors' prescriptions. To compare the positions of company employees and their customers on each of the aspects, we used an N-1 two proportion test which allows

identification of significant differences between two proportions in the case of agree/disagree questions.

Based on the results obtained in the two parts of the research, we made a conclusion regarding the influence of the CRM system on the quality of the company's customer understanding.

4. RESULTS

In the first part of the research we aimed to reveal how the CRM system was perceived within the company by both medical representatives and their managers. Below we show the results of a number of the aspects studied in this part. Ac-

Table 1: Perception of the CRM system by company employees

| Question | Answer option | Medical representative | Regional manager | Grand Total |
|--|---|------------------------|------------------|-------------|
| How frequently do you use the system to analyze your work and plan activities? | Every day | 15% | 10% | 14% |
| | Several times a week | 15% | 10% | 14% |
| | Once a week | 31% | 60% | 36% |
| | Once a month | 28% | 20% | 27% |
| | Less than once a month | 11% | 0% | 9% |
| Do you see a positive correlation between your activity targets execution and sales results? | Yes, there is direct correlation | 17% | 20% | 17% |
| | Yes, a correlation exists, but it is not clear | 70% | 80% | 72% |
| | No, there is no correlation | 13% | 0% | 11% |
| How frequently does your manager discuss with you various CRM KPIs? | Nearly during every conversation | 20% | 0% | 17% |
| | Not less than once a week | 48% | 50% | 48% |
| | Only during preparation for various company meetings and business reviews | 26% | 40% | 28% |
| | Discusses very rarely | 4% | 10% | 5% |
| | Doesn't discuss at all | 2% | 0% | 2% |
| Is it easy for you to get the information needed from the system? | Very easy | 4% | 20% | 6% |
| | Easy | 83% | 70% | 81% |
| | Not easy | 9% | 10% | 9% |
| | Absolutely not easy | 4% | 0% | 3% |
| The system stores all necessary customer information | Absolutely agree | 28% | 50% | 31% |
| | Agree | 70% | 50% | 67% |
| | Disagree | 2% | 0% | 2% |
| | Absolutely disagree | 0% | 0% | 0% |
| The system helps me to achieve my business goals | Absolutely agree | 15% | 30% | 17% |
| | Agree | 69% | 70% | 69% |
| | Disagree | 17% | 0% | 14% |
| | Absolutely disagree | 0% | 0% | 0% |
| Please estimate the system's value for your work | Absolutely valuable | 11% | 10% | 11% |
| | Valuable | 87% | 90% | 88% |
| | Not valuable | 2% | 0% | 2% |
| | Absolutely not valuable | 0% | 0% | 0% |

According to Payne and Frow (2005), a CRM system plays a crucial role in the information management process within the CRM strategy framework. As its key purpose is to accumulate the necessary customer data, collected and used by the company in line with its strategic priorities, the system (if properly managed and used by employees) plays a pivotal role in understanding the customer. Therefore, the intention of our research was to understand the role of this system within the company, the extent to which it is actively used by employees, whether it includes the necessary customer data and whether it is considered as a valuable tool by employees (Table 1).

As a result, we can see that in the company the CRM system plays a very important role within the customer management process. The majority of employees use the CRM system for customer analysis at least once a week (64%). It is important to highlight that regional managers use the CRM system even more frequently than medical representatives (80% versus 61%) for this purpose, which can be explained by the wider responsibilities and the necessity to keep track of their subordinates' work. As many as 89% of employees can see the link between their activities captured by the CRM system and business results (company sales and market share) – this point reinforces the importance of customer data use within the company. But, at the same time, it is worth mentioning that only 17% of employees see a direct correlation between activity targets execution and sales results. The majority of employees (72%) recognize the existence of the correlation, but cannot explain it. Taking into account the fact that management support is considered a crucial factor for successful CRM implementation, we can also observe that regional managers facilitate the use of the CRM system by their employees via their customer activity KPIs discussions at least once a week (50%) or during preparation for various company meetings and business reviews (40%) which are usually held once a month in this company. Moreover, the system is perceived as a tool which helps employees to achieve their business goals (86%), it is easy to use (87%) and it keeps all the necessary

customer information (98%). As a result, 99% of the employees consider this system a valuable tool for their work with customers. The results obtained allow us to make the following conclusions. Firstly, the use of the CRM system is perceived as a crucial part in the customer management process in the studied company, which is consistent with the overall positive attitude of employees towards this system. Secondly, the system is currently actively used both by medical representatives and regional managers. Finally, employees believe that there is a link between the use of the CRM system and their business results, which facilitates the adoption of this tool within the company.

Within the second part of the research our goal was to identify the key customer loyalty drivers in the case of the Russian ophthalmology market and to measure how well the company understands the position of its customers on each of these factors: medical representative's professional values, medical representative's personality, quality of the company's products, company reputation and professional influence of other health care professionals. Below we present the results of our regression analysis. We built three regression models, based on three loyalty measures highlighted in the "Research method" section (Table 2).

The regression models' R-squared range between 0.31 and 0.36 and all of them are statistically significant based on F-values. The independent variables were tested on multicollinearity using VIF-coefficients and they range between 1.15 and 1.89, proving the absence of correlation between independent variables. We used Harman's single factor test to diagnose common method variance. According to the results obtained, the maximum variance explained by one of the factors is 33.46%, which means that there is no general factor in our study. The results demonstrate that there are four factors which impact doctors' prescriptions in the Russian ophthalmology market (their p-values which are less than 0.05 are marked green in Table 2): the efficiency and safety of the company's products,

Table 2: Results of HCP loyalty drivers regression analysis

| Variables | I regularly prescribe the company's products preferring them to products of other manufacturers | | | Among the products of different manufacturers the company's products are preferable for prescriptions | | | I use the company's products in most of my practice when it is suitable according to medical indications | | |
|---|---|----------------|---------|---|----------------|---------|--|----------------|---------|
| | Coef. | Standard Error | P-value | Coef. | Standard Error | P-value | Coef. | Standard Error | P-value |
| Intercept | -0.41 | 0.54 | 0.45 | -0.63 | 0.53 | 0.24 | -1.00 | 0.58 | 0.09 |
| Company MR provides me with objective, unbiased information during his calls | -0.07 | 0.06 | 0.22 | -0.03 | 0.05 | 0.54 | 0.02 | 0.06 | 0.77 |
| Company MR demonstrates professional skills during his calls (credibility, clarity, commitment) | -0.05 | 0.11 | 0.62 | 0.06 | 0.10 | 0.59 | -0.02 | 0.11 | 0.89 |
| It is a pleasure for me to interact with company MR | -0.04 | 0.13 | 0.74 | -0.18 | 0.12 | 0.15 | 0.00 | 0.13 | 0.98 |
| Company MR shares my interests and values related to my effort to help patients | -0.12 | 0.12 | 0.33 | 0.15 | 0.12 | 0.19 | 0.05 | 0.13 | 0.71 |
| Company MR manages to build and maintain productive communication during his call | 0.15 | 0.13 | 0.25 | 0.15 | 0.13 | 0.23 | 0.15 | 0.14 | 0.28 |
| The company's products are always available/affordable for prescription | 0.03 | 0.07 | 0.61 | -0.05 | 0.07 | 0.42 | 0.07 | 0.07 | 0.30 |
| Dosage and packaging of the company's products are comfortable | 0.07 | 0.10 | 0.51 | 0.16 | 0.10 | 0.11 | -0.08 | 0.11 | 0.43 |
| The company's products are effective and safe in use | 0.24 | 0.09 | 0.01 | 0.13 | 0.09 | 0.14 | 0.23 | 0.10 | 0.02 |
| The company's products are generally cheaper than products of other companies | 0.21 | 0.07 | 0.00 | 0.21 | 0.07 | 0.00 | 0.00 | 0.07 | 0.95 |

Table 2 - Continued

| Variables | I regularly prescribe the company's products preferring them to products of other manufacturers | | | Among the products of different manufacturers the company's products are preferable for prescriptions | | | I use the company's products in most of my practice when it is suitable according to medical indications | | |
|--|---|----------------|---------|---|----------------|---------|--|----------------|---------|
| | Coef. | Standard Error | P-value | Coef. | Standard Error | P-value | Coef. | Standard Error | P-value |
| My attitude towards the company is positive | 0.17 | 0.14 | 0.22 | 0.09 | 0.14 | 0.52 | 0.14 | 0.15 | 0.35 |
| I trust the company and its products | 0.11 | 0.12 | 0.34 | 0.09 | 0.12 | 0.43 | 0.35 | 0.13 | 0.01 |
| My participation in scientific events positively influenced my prescriptions of the company's products | 0.08 | 0.07 | 0.24 | 0.09 | 0.06 | 0.16 | 0.07 | 0.07 | 0.30 |
| My colleagues recommend that I prescribe the company's products | 0.19 | 0.05 | 0.00 | 0.15 | 0.05 | 0.00 | 0.14 | 0.05 | 0.01 |

their price, doctor's trust in the company and its products, and recommendations by his colleagues to prescribe. All of them have a positive relationship with healthcare professionals' loyalty. This proves our H8, H9, H11 and H13 hypotheses. Other variables shown in the conceptual scheme above (Figure 2) did not demonstrate a statistically significant impact on healthcare professionals' loyalty.

The outcome of this measurement is especially interesting in comparison with previous results demonstrated by Waheed et al. (2011). In that paper MR professional values and tangible rewards appeared to have a positive correlation with physicians' prescription loyalty. The authors named these factors "points of difference" and argued that they differentiate the company from competitors. In our paper we did not evaluate tangible rewards as a possible influencing factor for prescription loyalty since most of these practices (gifts, presents, free samples) are legally prohibited in Russia. They are officially classified

as an element of bribery and are perceived as a very unethical practice in terms of their impact on physicians' prescribing decisions. All forms of bribery are prosecuted in Russia; therefore, even if we asked doctors about these practices, there is very little probability that we would obtain an accurate view of the reality from their answers. At the same time, no MR-related (professional values and personality) factors demonstrated a significant influence on the prescription loyalty behavior of doctors in our study. This can be explained by the following: firstly, in the case of the Russian pharmaceutical market, these factors can serve as "points of parity". This means that, regardless of the company, doctors always expects a high level of professionalism and good communication skills from an MR who visits them. Also, as most representatives tend to establish very close and personal relationships with doctors throughout their collaboration, these doctors in most cases tend to evaluate the representatives in a very positive way, which can create a misleading reflection of the reality. In many

cases doctors subsequently reveal to their MRs that they were asked about the representative's performance. Their evaluations of these factors may also be over-generous owing to a belief that the survey results can be used as a punishment tool by the company.

In the case of the Russian ophthalmology market, the factors which demonstrated positive and significant correlation with prescribers' loyalty are related to the quality of the company's products, the company's reputation and the professional influence of other HCPs. At the same time, recommendations by doctors' colleagues to prescribe the company's products proved to be one of the key drivers of doctors' prescriptions, as confirmed by significant correlation with all three loyalty measures used in the research. These results are consistent with the research of Nair, Manchanda and Bhatia (2010), who concluded that a physician's prescription behavior is influenced by the "opinion leaders" in his reference group. These results are also consistent with continuous efforts by pharmaceutical companies related to investing and sponsoring multiple educational group events for doctors (congresses, symposia, conferences, round tables etc.). In most cases these events serve as a vital source of useful knowledge for doctors, where they can discuss and share their therapeutic practices with colleagues and also gather necessary information to be used in providing effective treatment for patients. To further support this physician loyalty driver, numerous companies also invest in the development of their own specialized, local educational events which endorse the company's brand and help to maintain a positive image within their target audience.

When it comes to product and company related factors, we should acknowledge that pharmaceutical companies (especially in the case of original products) invest significant resources into building relevant scientific support for their

products. In order to convince doctors to prescribe particular products, companies provide them with numerous scientific articles explaining the effectiveness of use of specific molecules in a treatment. This medical research proves to have positive effects on doctors' prescriptions and ultimately on company sales (Berndt, Bui, Lucking-Reiley & Urban, 1996).

In the case of the Russian pharmaceutical market and the ophthalmology submarket in particular, which, according to IMS Health research, consists of a retail segment of 90%, the role of product price is very significant for patients because in most cases patient pay their own money for the treatment. Doctors understand this clearly and they try in many cases to provide not only effective, but also affordable treatment for patients. Therefore, it is no surprise to see significant and positive correlation between the relative price of the company's products and doctors' prescription loyalty.

Considering the role of trust in the company and its products in doctors' prescription loyalty, we can assume that trust is not developed spontaneously and is formed as a result of positive interaction with the company, its image on the market, and the quality of its products. According to relevant Russian law, in effect since 2012, doctors should provide patients with international non-proprietary names (INN) rather than particular brand names. Regardless of this fact, according to research done by the Synovate Comcon company, 38% of Russian doctors still prescribe particular brand names to patients. This indirectly demonstrates how significant the role of good relationships between the company and doctors is in terms of prescription loyalty.

At the same time, we found that six out of 16 factors (38%) demonstrate a low level of consistency between the company and its customers (Table 3).

Table 3: HCP loyalty drivers demonstrating different consistency between the company and its customers

| PARAMETER | P-value | Level of consistency between MRs and HCPs answers |
|---|---------|---|
| MR provides me with objective, unbiased information during his calls | 0.00 | LOW |
| MR demonstrates professional skills during his calls (credibility, clarity, commitment) | 0.05 | HIGH |
| It is a pleasure for me to interact with MR | 0.07 | HIGH |
| MR shares my interests and values related to my effort to help patients | 0.05 | HIGH |
| MR manages to build and maintain productive communication during his call | 0.00 | LOW |
| The company's products are always available/affordable for prescription | 0.29 | HIGH |
| Dosage and packaging of the company's products are comfortable | 0.19 | HIGH |
| The company's products are effective and safe in use | 0.39 | HIGH |
| The company's products are generally cheaper than products of other companies | 0.48 | HIGH |
| My attitude towards the company is positive | 0.16 | HIGH |
| I trust the company and its products | 0.08 | HIGH |
| My participation in scientific events positively influenced my prescriptions of the company's products | 0.24 | HIGH |
| My colleagues recommend that I prescribe the company's products | 0.00 | LOW |
| I regularly prescribe the company's products and prefer them over products of other manufacturers | 0.00 | LOW |
| Among the products of different manufacturers the company's products for me are the most preferable for prescriptions | 0.00 | LOW |
| I use the company's products in most of my practice when it is suitable according to the medical indications | 0.00 | LOW |

Out of these six variables, one proved to have a statistically significant positive influence (My colleagues recommend that I prescribe the company's products) on physician loyalty. Three perform as measures of health care professionals' loyalty towards the company (I regularly prescribe the company's products and prefer them over products of other manufacturers; Among the products of different manufacturers the company's products for me are preferable for prescriptions; I use the company's products in most of my practice when it is suitable according to the medical indications).

Comparing the results from both parts of the research, we can state that – despite the fact that

the CRM system is actively used by company employees to manage their customers, a finding which is reinforced by the company management, and that it is perceived as a crucial part of the customer relationship management process within the company – the quality of customer understanding in the company suffers from a number of weaknesses and needs to be improved. At the same time, some of the improvement areas (those that demonstrate a low level of consistency between the company and its customers (Table 3)), are directly related to customer loyalty and, therefore, are crucial for the company's success in the ophthalmology market. Based on these results, the company needs to address

the existing gap between the perceived role of the CRM system within the CRM process and actual quality of customer understanding. These empirical results may challenge the widespread idea that CRM applications help businesses to achieve better customer understanding.

5. IMPLICATIONS OF THE RESEARCH

This research focused on a number of important aspects and results which have both theoretical and practical implications. We should acknowledge that there is still very limited research about the pharmaceutical industry in general and about the Russian pharmaceutical market in particular. From a theoretical standpoint, we firstly evaluated the link between CRM system use and customer relationship performance. As we stated before, it is still unclear from the existing research whether this link exists or not – some views support its existence by stating that CRM system use is associated with improved customer knowledge and satisfaction, which ultimately impacts company business performance; however, some papers argue that no relationship exists or even that there is a negative relationship. Our research demonstrates that, while the system can be well-established, positively perceived and actively used in the company, there can still be significant gaps related to the quality of companies' customer understanding. These gaps can be explained by a number of reasons. Firstly, when we measure the perceptions of respondents regarding use of the CRM system, we don't know whether they are consistent with the real situation as perception is a psychological characteristic of the individual. Secondly, the key role of the system is to store information related to the company's customers. The availability of such information doesn't necessarily mean it is used effectively by the company's employees. We also adapted a physician prescription loyalty model to the context of the Russian ophthalmology market, which has a number of specific characteristics as described in this paper.

From a practical standpoint, firstly, we identified particular factors influencing physicians' prescription loyalty in the case of the Russian ophthalmology market. Understanding of these factors provides marketing managers with insights as to where they should invest more resources and what the key areas are to focus on. Secondly, we provided an example of how to evaluate employee perceptions of use of the CRM system, which can be used by business practitioners to understand the utilization process of this technology. Thirdly, we provided a view on how to measure the quality of understanding between the company and physicians, which is important for pharmaceutical companies in terms of development of effective promotion strategies and allocation of sales force efforts. All of these developments can be beneficial for the management of pharmaceutical companies, especially in the case of Russian ophthalmology market.

6. CONCLUSION

A number of authors demonstrate that the ability of a company to understand its customers can significantly improve its performance. The understanding of customers is especially important if it is analyzed in the context of their loyalty drivers, which impact their attitude towards the company. This understanding is primarily driven by the CRM process established and maintained in the company, which consists of multiple aspects, one of which is the information management process. This part of the overall CRM process is implemented by the introduction of a special computerized CRM system, acting as a data repository in the company and being used by its employees to plan, execute and analyze their customer-related activities. Despite the fact that many authors state that such systems help companies to improve customer satisfaction and loyalty, some argue that there is no relationship between them and customer relationship performance.

In this paper we addressed the impact of a CRM system on a company's understanding of

its customers in the context of customer loyalty drivers. The contribution and main findings of this paper are threefold. Firstly, we identified the particular factors influencing physicians' loyalty in the Russian ophthalmology market. They are: the efficiency and safety of the company's products, price of the product, doctors' trust in the company and its products, and recommendations by doctors' colleagues to prescribe a particular product. Secondly, we evaluated the perception of the CRM system by the company's employees and found a positive overall attitude within the company towards the role and use of the CRM system as a part of their customer management process: the system is actively used by the employees, this process is facilitated by the company management, customer data is perceived as complete and correct, and employees believe that the system helps them to drive their business performance. Finally, we measured the quality of company employees' customer understanding using the factors included in the physician loyalty model. This evaluation demonstrated that there is a significant area for improvement, which needs to be addressed by the company,

as around 40% of the factors appeared to have a significant difference in perception. At the same time, taking into account the results of research on the use of the CRM system, we doubt that the system itself significantly impacts customer relationship performance in this company. However, we also should take into consideration that the results obtained are based on employees' perceptions, which by the definition cannot be totally objective, and that the actual ways in which information from the CRM system is used play a significant role in understanding customers.

The limitations of the paper can be summarized as follows: firstly, the research was undertaken on the basis of a particular pharmaceutical company and, in order to generalize the findings, it needs to be extended to other companies in the industry. Secondly, for better generalization it is necessary to involve doctors from other therapeutic areas, who can demonstrate different prescription habits. Finally, in order to be able to make more solid conclusions, we need to address the perceptual aspects with more objective evaluations of the impact of CRM systems on company performance.

REFERENCES

1. Berger, P. D., Bolton, R. N., Bowman, D., Briggs, E., Kumar, V., Parasuraman, A., & Terry, C. (2002). Marketing Actions and the Value of Customer Assets a Framework for Customer Asset Management. *Journal of Service Research*, 5(1), 39-54.
2. Berndt, E. R., Bui, L. T., Lucking-Reiley, D. H., & Urban, G. L. (1996). The roles of marketing, product quality, and price competition in the growth and composition of the US antiulcer drug industry. In: T. F. Bresnahan & R. J. Gordon (eds.), *The Economics of New Goods*, National Bureau of Economic Research (277-328). Chicago, IL: The University of Chicago Press.
3. Boulding, W., Staelin, R., Ehret, M., & Johnston, W. J. (2005). A customer relationship management roadmap: what is known, potential pitfalls, and where to go. *Journal of Marketing*, 69(4), 155-166.
4. Chewing, B., & Sleath, B. (1996). Medication, decision making, and management: A client centered model. *Social Science & Medicine*, 42(3), 389-398.
5. Garrido-Moreno, A., Lockett, N., & Garcia-Morales, V., (2014). Paving the way for CRM success: The mediating role of knowledge management and organizational commitment. *Information and Management*, 51(8), 1031-1042.
6. Gönül, F. F., & Carter Jr., F. J. (2012). Estimation of promotional strategies for newer vs older drugs based on physician prescribing data. *International Journal of Pharmaceutical and Healthcare Marketing*, 6(1), 39-54.

7. Gronroos, C. (1995). Relationship Marketing: The Strategy Continuum. *Journal of the Academy of Marketing Science*, 23(4), 252-255.
8. Hogan, J. E., Lemon, K. N., & Rust, R. T. (2002). Customer equity management charting new directions for the future of marketing. *Journal of Service Research*, 5(1), 4-12.
9. Homburg, C., Grozdanovic, M., & Klarmann, M., (2007). Responsiveness to customers and competitors: the role of affective and cognitive organizational systems. *Journal of Marketing*, 7(3), 93-116.
10. Hunt, S., & Morgan, R. (1994). The Commitment-Trust Theory of Relationship Marketing. *Journal of Marketing*, 58(3), 20-38.
11. Hunt, S., & Morgan, R. (1997). Resource-Advantage Theory: A Snake Swallowing Its Tail or a General Theory of Competition?. *Journal of Marketing*, 61, 74-82.
12. Jayachandran, S., Sharma, S., Kaufman, P., & Raman, P. (2005). The role of relational information processes and technology use in customer relationship management. *Journal of Marketing*, 69(3), 177-192.
13. Josiassen, A., Assaf, A. G., & Cvelbar, L. K. (2014). CRM and the bottom line: Do all CRM dimensions affect firm performance?. *International Journal of Hospitality Management*, 36, 130-136.
14. Kim, J., Suh, E., & Hwang, H. (2003). A model for evaluating the effectiveness of CRM using the balanced scorecard. *Journal of interactive Marketing*, 17(2), 5-19.
15. Ladeira, W. J., Dalmoro, M., Maehler, A. E., & Araujo, C. F. (2011). Drug prescription practices in Brazil: a structural equation model. *International Journal of Pharmaceutical and Healthcare Marketing*, 5(4), 262-278.
16. Makoul, G., & Clayman, M. L. (2006). An integrative model of shared decision making in medical encounters. *Patient Education and Counseling*, 60(3), 301-312.
17. Mithas, S., Krishnan, M. S., & Fornell, C. (2005). Why do customer relationship management applications affect customer satisfaction?. *Journal of Marketing*, 69(4), 201-209.
18. Monteiro, C. M. F., Dibb, S., & Almeida, L. T. (2010). Revealing doctors' prescribing choice dimensions with multivariate tools: A perceptual mapping approach. *European Journal of Operational Research*, 20(3), 909-920.
19. Nair, H. S., Manchanda, P., & Bhatia, T. (2010). Asymmetric social interactions in physician prescription behavior: the role of opinion leaders. *Journal of Marketing Research*, 47(5), 883-895.
20. Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *Journal of Marketing*, 54(4), 20-35.
21. Payne, A., & Frow, P. (2005). A strategic framework for customer relationship management. *Journal of Marketing*, 69(4), 167-176.
22. Rao, K. S. (2002). Pharmaceutical marketing in a new age. *Marketing Health Services*, 22(1), 6-12.
23. Rod, M., Ashill, N., J. & Carruthers, J. (2007), Practitioner perspective. Pharmaceutical marketing return-on-investment: a European perspective. *International Journal of Pharmaceutical and Healthcare Marketing*, 1(2), 174-189.
24. Srinivasan, R., & Moorman, C. (2005). Strategic firm commitments and rewards for customer relationship management in online retailing. *Journal of Marketing*, 69(4), 193-200.
25. Waheed, K. A., Jaleel, M., & Laeequddin, M. (2011). Prescription loyalty behavior of physicians: an empirical study in India. *International Journal of Pharmaceutical and Healthcare Marketing*, 5(4), 279-298.
26. Wright, R. F., & Lundstrom, W. J. (2004), Physicians' perceptions of pharmaceutical sales representatives: a model for analyzing the customer relationship. *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing*, 4(1), 29-38.
27. Yim, F. H-K., Anderson, R. E., & Swaminathan, S. (2004). Customer relationship management: Its dimensions and effect on customer outcome. *Journal of Personal Selling and Sales Management*, 24(4), 263-278.
28. Zoltners, A. A., Sinha, P., & Zoltners, G. A. (2001). *The Complete Guide to Accelerating Sales Force Performance*. New York, NY: Amacom.
29. Основные тенденции выписки врачами препаратов по МНН. (n.d.). Retrieved March 9, 2015 from <http://www.comcon-2.com/default.asp?artID=2937>