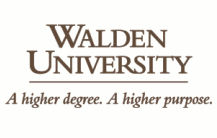

2018

Marketing Strategies During the Product Life Cycle in the Pharmaceutical Industry

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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2018

Abstract

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by

Natasa Naneva

MBA, Ashland University, 2008

BS, Sv. Kliment Ohridski - Bitola, 2005

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Walden University

November 2018

Abstract

Development and implementation of effective marketing strategies during various stages of product life cycle in the pharmaceutical industry are critical to an organization's successful performance in the marketplace in the 21st century. Guided by the general systems theory developed by Bertalanffy and the evolutionary systems theory developed by Laszlo and Laszlo, the purpose of this single case study was to explore best practices among marketing managers within pharmaceutical companies related to marketing strategies during various stages of product life cycle. Data were gathered via semistructured interviews with 3 purposefully selected managers who have successfully developed marketing strategies in a central Ohio pharmaceutical company in business for more than 10 years. A review of secondary data included company documents, such as annual reports, news releases, and websites, in addition to government databases. Member checking was conducted to ensure accuracy of the interpreted data and trustworthiness of the research findings. Yin's 5-step process and thematic analysis were used to analyze the data. Four themes emerged from data analysis: marketing function, product life cycle phases, factors influencing the decision-making process, and strategic activities in executing business strategies. Findings may have implications for positive social change such as assisting organizational leaders to understand the challenges and business practices in implementing marketing strategies to successfully deliver products that improve patients' health.

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Dedication

I dedicate this doctoral study to my husband, Toni; my parents, Pavlina and Ljupce; my sister, Daniela; and my nephews, Marko and Dragan.

I would like to thank my husband, Toni Kostrevski, for your support, encouragement, and patience throughout this journey. It would not have been possible without your support and love. You mean the world to me, and I love you.

I would also like to thank my parents, my mother Pavlina Naneva and my father Ljupce Nanev, for your unconditional love, support, guidance, and wisdom. Without you I would not have been able to accomplish the program. I am grateful for having you in my life, and proud to be called your daughter.

Lastly, I would like to thank my sister, Daniela Tosev, for your support and faith in me during this journey. Without you, Deni, and the smiles of my dear nephews, Marko Tosev and Dragan Tosev, I would not have been able to accomplish the degree. I am grateful for having you as my sister.

Acknowledgments

I would like to thank my Chair, Dr. Matthew Knight (Dr. Matt), for his continuous support and guidance through the process that helped me make it this far. I would like to also thank my Second Committee Member, Dr. David Moody, and my URR, Dr. Judy Blando, for their valued feedback and reviews of my doctoral study.

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Section 1: Foundation of the Study

Marketing strategies are the activities relating to customer and competitor analysis, market segmentation, targeting markets, defining appropriate positioning through marketing mix elements (product, price, place, and promotion), and context analysis at macro and micro level (Stros & Lee, 2015). Marketing strategies positively relate to financial and organizational performance and promote profitability and growth (Stros & Lee, 2015). Organizational leaders employed in pharmaceutical companies experience challenges in creating and implementing effective product life cycle management programs and marketing strategies due to several factors (Prajapati, Tripathy, & Dureja, 2013; Schramm & Hu, 2013; Song & Han, 2016). The strategic aspects of marketing strategy development and implementation and the challenges associated with marketing strategy execution require further research. The marketing efforts were explored by understanding how business professionals who develop and implement marketing strategies view marketing activities.

In Section 1 of this study, the background of the problem, the problem statement, the purpose statement, the nature of the study, the research question, and the conceptual framework are presented and discussed. The significance of the study, including contributions to business practice and positive social change, and a review of professional and academic literature are also presented.

Background of the Problem

Organizational leaders develop competitive advantage and synergies through marketing mix elements (product, price, place, and promotion) tailored to the needs and

wants of potential customers in the target market (Liao, Rice, & Lu, 2015). The concept of product life cycle management, viewed as a strategic approach for managing a company's product-related intellectual capital, originated in the electronics and automotive sectors, and existed for many years (Prajapati et al., 2013). In the pharmaceutical industry, while product decisions are most visible at the time of new product introductions to the market, what happens after launch has a substantial influence on the product's profitability over its lifetime (Duflos & Lichtenberg, 2012). Visiongain (2018a) reported organizational leaders spend approximately 19% of their total revenues on product life cycle management activities as a marketing tool annually, and over 35% of the organizations' performance in product life cycle management was average to poor. Company leaders need to develop marketing strategies during various stages of the product life cycle to effectively allocate and coordinate marketing resources and activities to accomplish the company's objectives within a specific product-market (Mullins, Walker, Boyd, & Jamieson, 2010).

The focus of this study was to explore two aspects of the topic under study. The first aspect was exploring the marketing efforts and practices related to marketing strategy development and implementation, while the second aspect was associated with the actors within the marketing system. From that perspective, I explored the marketing efforts by understanding how business professionals, involved in the decision-making process for marketing strategy development and implementation view the marketing activities.

Problem Statement

In 2014, 76% of brand prescription medicines experienced first generic entry (Grabowski, Long, Mortimer, & Boyo, 2016). Brand drugs with $100 billion in sales are expected to lose patent protection in the coming years (Song & Han, 2016) causing increasingly competitive environment, revenue losses, and increased strategic importance for product life cycle management activities. Martin, Hartman, Benson, and Catlin (2016) published that generic medicines accounted for 82% of prescriptions dispensed in the United States in 2014. The general business problem was leaders of pharmaceutical companies experience challenges in creating and implementing effective marketing strategies during various stages of the product life cycle (Kakkar, 2015) that can lead to a loss of revenues, a loss of market shares, and reduced profitability. The specific business problem was determining the best practices among marketing managers within pharmaceutical companies on how to pursue marketing strategies during various stages of product life cycle.

Purpose Statement

The purpose of this qualitative case study was to determine the best practices among marketing managers within pharmaceutical companies on how to pursue marketing strategies during various stages of product life cycle. I obtained data from a sample of business professionals, managers, who create and implement marketing strategies for branded prescription medicines within the pharmaceutical industry. Branded prescription medicines accounted for 70% of the health care expenditures in the United States in 2013 (Naci, Carter, & Mossialos, 2015). I identified the pharmaceutical

company and the molecules by using the FDA orange book. To explore the lived experiences of the participants, I collected data through in-depth, semistructured interviews (face-to-face interviews and telephone interviews), and then analyzed the data. The scope of the study was in central Ohio in the United States. The data from this study might impact social change by assisting organizational leaders to better understand the marketing practices and challenges related to the product life cycle management, to successfully deliver products in the marketplace, or maximize the profitability of a product over its life cycle.

Nature of the Study

I employed qualitative research to understand the views and experiences of business professionals involved in development and implementation of marketing strategies regarding marketing solutions. Marketing strategy development and implementation is social constructionism because it involves complex interactions among individuals and groups from different business units and levels within an organization (Mullins et al., 2010). Cleary, Horsfall, and Hayter (2014) and McKinley (2015) linked the socially constructed experiences to the theory of social constructivism. Darawsheh (2014) recommended the use of a qualitative research approach to best explore the theory of social constructivism and the socially constructed experiences. Hlady-Rispal and Jouison-Laffitte (2014) demonstrated that researchers use qualitative research method to explore and understand the meaning that individuals or groups ascribe to a specific problem, and obtain new information, and that the use of quantitative research through surveys or experiments does not help obtain new information.

I selected a case study research design within the qualitative research methodology. Researchers could explore a complex social constructivism through the participants' views, and use the qualitative case study research design in which individuals describe their experiences (Khankeh, Ranjbar, Khorasani-Zavareh, Zargham-Boroujeni, & Johansson, 2015), and obtain data using multiple data sources (Hyett, Kenny, Virginia Dickson-Swift, 2014; Morse, 2015b; Wiggins, Hughes, Rodriguez, Potter, & Rios-Campos, 2014). The experiences occur in a real-life context (Tsang, 2014). Strategy researchers used quantitative and qualitative methods since the inception of the field, and although researchers employed both quantitative and qualitative approaches, the use of quantitative research designs dominates (Duggleby & Williams, 2016). The goal of the doctoral study was to construct the meaning of the topic under study using multiple data sources through the participants' views regarding marketing solutions and discover new insights, rather than generalizing the meanings into few categories, which is the intent of quantitative studies. Qualitative case study research was the best fit of research design for the doctoral study.

Research Question

The focus of this study was on exploring marketing professionals' views of marketing strategy implementation to address the central research question: How do marketing managers within pharmaceutical companies pursue marketing (product, price, place, and promotion) during various stages of the product life cycle?

Interview Questions

1. How do you pursue marketing (product, price, place, and promotion) during various stages of the product life cycle?
2. Briefly describe the premarket and postmarket strategies in terms of (a) marketing mix: product, price, place, and promotion, (b) sales goals, (c) customers, (d) competition/market, (e) targeted market shares, and (f) marketing goal, for each of the following stages: launch strategy, first year postlaunch, and post first year of product launch.
3. How do these decisions relate to the company's revenue generation, market share, and profitability?
4. What factors (variables) are most strongly associated with revenue generation, market shares, and profitability?
5. What factors influence the decision-making process?
6. What factors influence the company's product portfolio management?
7. What are the marketing implications and the challenges in the current models of the company's product portfolio management?
8. What are the strategic activities that are essential in executing business strategies?
9. How does your company align the strategic marketing programs with the corporate strategies, and business strategies?

10. What are the key success factors for a pharmaceutical drug manufacturer (generic drug manufacturer or brand drug manufacturer) in order to fight competition, and the challenges within the industry?

Conceptual Framework

The conceptual framework of the study derived from the general systems theory and the evolutionary systems theory. Bertalanffy (1972) developed the general systems theory in 1972. Bertalanffy used the theory to explain the interconnectivity between marketing and other units within an organization and its environment, based upon the premise that every system is composed of interrelated components. Laszlo (1997) developed the evolutionary systems theory in 1987. Laszlo and Laszlo (1997) used this theory to explain the evolution and the dynamics of complex systems and the product life cycle model, based upon the premise that an organization as a complex system interacts with its environment and coevolves. Key constructs/propositions underlying the theories were the participants' views and experiences on marketing strategies and activities related to (a) product, (b) price, (c) distribution, (d) promotion, (e) sales, (f) customers, (g) competition, and (h) marketing goals during product life cycle management from premarket to postmarket stages. As applied to this study, I expected that the propositions advanced by the theorists allowed me to effectively explore the marketing managers' views and experiences regarding their decision-making processes as it pertains to the development and implementation of marketing strategies.

Operational Definitions

In this section, the operational definitions of key technical terms, or special words uses were provided. The definitions were derived from the academic literature and were conceptualized to accommodate the context of this study.

Branded prescription medicine business: Brand prescription medicine businesses are innovation-based and discover novel treatments in form of new molecular entities (NMEs), new indications (NIs), new drug delivery systems, or new dosage forms (NDF) for existing and emerging diseases (Naci et al., 2015).

Generic prescription medicine business: Generic prescription medicine business operates by introducing versions of innovator products by conducting a limited research and development (R&D) work to prove generic medicines' clinical equivalence to respective brand medicines without performing any clinical trial (Xie, & O'Neill, 2014).

Manufacturing strategy: Manufacturing strategy is set of capabilities that a manufacturing unit must have for the organization to compete given its business and marketing strategies, and critical to win customer orders (Thomas, Pham, Francis, & Fisher, 2015).

Market orientation: Market orientation as an organization's strategic orientation is a capability to deliver superior customer value, based on knowledge derived from customer and competitor analyses and the process by which this knowledge is gained and disseminated throughout the organization (Özturan, Özsomer, & Pieters, 2014).

Market value: Market value is a term that describes an appraisal based on the market's perception of the flow of future profits, and dividends, that are partly driven by

organizations' tangible, and partly by their intangible assets (Chen, Shil, & Chang, 2014). Market value is generally estimated by the value that is the average stock price of a company in a given year multiplied by the number of its common stock shares outstanding (Chen et al., 2014).

Marketing strategy: Marketing strategy is the organization's integrated pattern of decisions that specify its crucial choices concerning products, markets, marketing activities and marketing resources in the creation, communication and/or delivery of products that offer value to customers in exchanges with the organization and thereby enables the organization to achieve specific objectives (Olson, Slater, Hult, & Olson, 2018).

Product life cycle management: Product life cycle management is a strategic approach for managing a company's product-related intellectual capital to maximize the profitability of a product over its life cycle, and increase its return of investment (Prajapati et al., 2013).

Relationship marketing: Relationship marketing are all marketing activities directed towards establishing, developing, and maintaining successful relational exchanges, that involves suppliers, service providers, governments, competitors, customers, and internal organizational structures (Payne & Frow, 2017).

Strategy implementation: Strategy implementation is the realization of strategic intentions through organizational activities and practices that are directed toward the achievement of strategic goals (Ahearne, Lam, & Kraus, 2014).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions are ideas or beliefs about what the agents know and believe about each other's choices and information (Singaraju, Nguyen, Niininen, & Sullivan-Mort, 2015). Researchers could make assumptions about the participants in the study, the results, the topic under investigation, the methodology employed in the study, the data collection instrument, the results, or the theory under investigation (Rambe & Nel, 2015). An assumption was that the selected participants would cooperate and be willing to share their views openly. The selected participants who gave consent to participate in the study cooperated and shared their views openly.

Limitations

Limitations are elements the researcher has no control over (Rambe & Nel, 2015), and are potential weaknesses of the study (Simon, Latreille, Matte, Desjardins, & Bergeron, 2014). The major limitation in the study was the selected research method. Qualitative research is interpretative, meaning the interpretation of the collected data is a representation of interactive processes between researcher and the participants in the research, and a reflection of the researcher's own interpretation based on cultural, social, gender, class, and personal politics (Darawsheh, 2014; Denzin, 2017). In qualitative case study research, the researcher needs to describe the topic under study through the views of the participants and interpret and understand the participants' perception pertaining to marketing solutions in the pharmaceutical industry. The engagement in the data collection and the interpretation of data might result in a potential bias. To eliminate

potential biases the researcher needs to establish validity and reliability in qualitative research and maintain self-awareness during the research. Khankeh et al. (2015) documented major weaknesses of qualitative studies, such as contextually embedded findings, vague standards for data analysis, presentation of voluminous amount of qualitative data and theoretical criteria for judging the quality of studies. To clarify the information, accuracy, and credibility of the findings, I followed-up with the participant, and used triangulation where I compared the study findings to company documents located on company websites. In triangulation, researchers use multiple sources, methods, theories, and investigators to support the findings (Morse, 2015a). To maintain self-awareness and limit the subjectivity during the data collection, I avoided leading questions and asked open-ended questions to avoid influence on the participants' answers. I asked all participants the same questions.

Another limitation was associated with the study population. The selection of the participants in the study needed to be rigorous and careful, because people directly involved with marketing activities are not necessarily located in marketing or sales departments within an organization, and their placement depends on the organizations' structure (Mullins et al., 2010). Potential participants outside marketing and sales departments within the organizations who might provide valuable insights to the study might have existed. Another limitation was the geographic area. The findings from this study may not apply to other geographical areas.

Delimitations

Delimitations are the boundaries of the study (Nagasaka, 2016). Delimitations are things that the researcher can control and include information about the sample, the variables studied, the theoretical perspectives, or the instruments (BOLD Educational Software, 2018); or in other words, information about what researchers will include and what will exclude in a study. The objective of this research was to explore the marketing efforts in the pharmaceutical industry and the challenges associated with marketing strategy development and implementation through lived experiences of business professionals involved in the decision-making process. I employed a qualitative case study research through primary semistructured interviews with the participants in the study. While other methods, such as quantitative or mixed research methods, could be employed to approach the topic under study, which is marketing strategies during product life cycles in the pharmaceutical industry, I found qualitative case study research well suited to answer the problem under study because it provides the means to describe the meaning of the topic under study through the participants' views regarding marketing solutions. I did not use other research methodologies in the study.

Another delimitation in the study was the focus on the activities associated with marketing efforts in the pharmaceutical industry. I did not consider other organizational efforts, such as research and development, human resources, financial resources, and available technologies. I limited the scope to internal factors specific to pharmaceutical organizations and external factors, such as competition and market forces within the pharmaceutical industry. I did not examine other external factors, such as social and

economic conditions, customer and consumer behavior, the government and insurance payers, the health care system relating to reimbursement plans, and the physicians' prescribing behavior. Drawing on the general systems theory and evolutionary systems theory as a conceptual framework in this research, the development and implementation of marketing strategies was examined as a social human activity.

Significance of the Study

Contribution to Business Practice

Research in marketing strategy development and implementation is important to scholars and management in organizations within the pharmaceutical industry, given the established association between marketing strategies and the organizational financial performance (Schramm & Hu, 2013). This study may be significant to the business practice for numerous reasons. Research to examine strategic aspects of marketing efforts is needed to help organizations in increasing the understanding of marketing strategy development and implementation and in designing appropriate marketing intervention programs to develop competitiveness or remain competitive in the marketplace and extend the life of the molecule, revenue generation, increase market shares and increase profitability. This study might contribute to business practice by providing a valuable tool for optimal allocation of marketing expenditures over time, because marketing models and marketing-mix effectiveness change over time, given the market conditions. Business leaders could also use this research to evaluate previous marketing strategies and models and derive input for new models during the management of the product life cycle and marketing efforts.

Kakkar (2015), Schramm and Hu (2013), and Song and Han (2016) concentrated on the stage of the brand prescription medicine patent expiration when faced with generic prescription medicine substitution. Kakkar, Schramm and Hu, and Song and Han examined the effects of specific life cycle management strategies, such as product line extensions (reformulations, new combinations of drugs and expanded indication ranges) on the commercial product life, revenue generation and market share. These researchers focused on the competition, the timing of market entry, the exclusivity of line extensions and the effects on market shares and sales (Kakkar, 2015; Schramm & Hu, 2013; Song & Han, 2016). Kumar, Brianna, and Greene (2017) focused on marketing-mix optimization and resource allocation during various stages of a product life cycle, with emphasis on marketing effectiveness, product margins, and costs. Dunne and Dunne (2015) and Kanavos (2014) focused on examining the effects of the pricing strategies on the market, and compared, and contrasted generic, and brand prescription medicine strategies. Barrales-Molina, Martínez-López, and Gázquez-Abad (2014) examined the effects of organizational competence or capability as a source of strategic advantage in the context of pharmaceutical research. In response to the existing research, I focused on the competitive strategies, market entry and organizational competence and their relationship with companies' revenue generation and market shares. One of the objectives of this study was to provide new insight of important business drivers in the branded prescription medicine sector related to product portfolio management.

Employing qualitative research methods in exploring marketing strategy development and implementation might allow researchers to discover new information

about the topic under study previously not available or explored. Khankeh et al. (2015) documented major strengths of employing qualitative research, such as extended knowledge on the research topic, by proposing theoretical patterns emerged gradually from the inductive mode of thinking. Employing a case study design within the qualitative methodology helps researchers explore the topic under study through the lived experiences of the participants (Maguire, Stoddart, Flowers, McPhelim, & Kearney, 2014), and could produce new insights into the field of marketing in the pharmaceutical industry. I did not find any existing research that examined the perspectives of marketing managers on marketing strategy development and implementation in the pharmaceutical industry. One of the objectives of this study was to reduce this gap in the literature by enhancing the understanding about managers' experiences of the strategic activities related to the development and implementation of strategies.

Implications for Social Change

Gray, Siemsen, and Vasudeva (2015) and Song and Han (2016) documented that the pharmaceutical market is complex and highly regulated industry, and that Food and Drug Administration (FDA) officials evaluate medicines for (a) safety, efficacy, and manufacturing quality as a condition of market access; (b) promotion; and (c) medicine prices. The constantly changing environment (technology, regulatory, markets, and competitor offerings) and intensified competition led to the need for marketing managers to develop and implement sound marketing strategies during various stages of product life cycle while leveraging the product portfolio mix in order to remain competitive in the marketplace (Prajapati et al., 2013; Schramm & Hu, 2013; Song & Han, 2016).

Medications have complex life cycles with diverse actors, social systems, and institutions determining who uses what medications, how, when, and why (Anderson, Stowasser, Freeman, & Scott, 2014). Organizational leaders view the life cycles as systems that are part of other systems, such as social, cultural, and economic systems, that are constantly changing (Anderson et al., 2014). The data from this study might impact social change by assisting organizations to better understand the challenges and business practices in implementing strategies during various stages of product life cycle to successfully deliver products in the marketplace, obtain cost advantages and generate high levels of return on investment. Product life cycle management is a strategic approach for managing a company's product-related intellectual capital to maximize the profitability of a product over its life cycle and increase its return of investment (Prajapati et al., 2013). The marketing concept further requires marketing managers to organize the organization's resources into a total system aimed at meeting the customer needs, and to influence and direct the activities from the manufacturer to the patient (Thomas et al., 2015).

The pharmaceutical industry develops cures for health conditions, improves the health of patients, boosts welfare and economic development (Meara et al., 2016), and reduces the total health care expenditures (Berger, Dunn, Johnson, Karst, & Shear, 2016; Grabowski, Long, & Mortimer, 2014). Smith (2012) documented that in both developed and emergent markets, it is increasingly difficult to gain market access unless the product provides not only clinical advantages but also significant and demonstrably superior health economic outcomes. This study may contribute to social change by encouraging marketing managers to improve the access to safe and efficient medicine.

A Review of the Professional and Academic Literature

The literature review provides a history, synthesis, and critical analysis of previous work in areas related to the research question under investigation, to help researchers understand the emerging patterns and trends in previous research (Boell & Cecez-Kecmanovic, 2015). The literature review in this study is organized into eight categories: (a) research methods review, (b) application to the applied business problem, (c) conceptual framework, (d) organizational competencies-current theories, (e) marketing strategy, (f) marketing instruments, (g) market dynamics, (h) measuring marketing value, and (i) challenges in the business models and product life cycle management.

The 226 references used in the research study included 215 online scholarly peer-reviewed references representing 95.1% of the total, six books representing 2.7% of the total, and five websites representing 2.2% of the total. The total number of references from scholarly peer-reviewed sources published within the past 5 years was 196, or 86.7% of the total number, and 202 references published within the past 5 years, representing 89.4%. The literature review contained 104 references, with 100 references from scholarly peer-reviewed sources, representing 96.2%, and 91 references published within the past 5 years, representing 87.5%.

The literature search is limited to primarily peer-reviewed journal articles. I used the following databases in conducting literature review: Business Source Complete/Premiere, ABI/INFORM Complete, ProQuest Central, ProQuest Dissertations & Theses, LexisNexis Academic, Cochrane Database of Systematic Reviews, CINAHL

& MEDLINE Simultaneous Search, and Google Scholar. The existing literature cited in the articles, and the research methodologies and approaches to problem were reviewed. This literature review is organized thematically rather than chronologically. Touboulic and Walker (2015) documented that researchers could organize literature reviews thematically or chronologically.

Research methods review. Duggleby and Williams (2016) documented that strategy researchers used quantitative and qualitative methods since the inception of the field, and that the use of quantitative research designs dominates. Researchers employ quantitative research at theory testing or verification, qualitative research allows for theory building or generation, while mixed methods research enables the researcher to simultaneously generate and verify theory in the same study (Duggleby & Williams, 2016; Wiggins et al., 2014). Hlady-Rispal and Jouison-Laffitte (2014) noted that in qualitative research, researchers focus on review of the literature on the topic as opposed to establishing a foundation for the problem under study, which is common in quantitative studies.

Barrales-Molina et al. (2014) and Kanavos (2014) used quantitative research through structured record reviews of medical and financial information to examine the relationships between variables to find answers to their questions. Herhausen (2016) and Matikainen, Rajalahti, Peltoniemi, Parvinen, and Juppo (2015) used quantitative research through surveys to examine the market access within the pharmaceutical industry. Obeidat, Al-Hadidi, Tarhini, and Masa'deh (2017) also used quantitative research through surveys to examine to examine the strategy implementation within the

pharmaceutical industry. Hlady-Rispal and Jouison-Laffitte (2014) and Khankeh et al. (2015) employed qualitative research designs to explore topics within the pharmaceutical industry. Schulz, Broekemier, and Burkink (2014) used both quantitative research through surveys and qualitative research using interviews to examine the impact of marketing efforts on product sales.

Sabatier, Craig-Kennard, and Mangematin (2012) and Smith (2012) used qualitative case study research through interviews to explore business models and the competitive environment within pharmaceutical industry. Sabatier et al. used methodological triangulation through the use of internal documents (project descriptions, or annual reports) and scientific research to test validity and develop a comprehensive understanding of the topic under study.

Application to the applied business problem. The objective of this qualitative case study was to explore the marketing efforts during various stages of product life cycle in the pharmaceutical industry through lived experiences of business professionals who develop and implement marketing strategies. In this subsection, a critical analysis and synthesis of literature pertaining to the conceptual framework, potential themes and topic under study was presented. Different points of views were compared and contrasted, and the relationship of the study to previous research and findings were presented.

Conceptual Framework

The conceptual frameworks I used in the study were the general systems theory and the evolutionary systems theory. Bertalanffy (1972) developed a general systems theory based on the assumption that all open systems have similar principles and the

principles could be applied to all complex systems. Bertalanffy documented that according to the general systems theory, the deterministic laws of nature govern the movement of the components or subsystems of every system, organizations inclusive. Complex systems, including organizations, focus on the relationships and the interactions between the subsystems (such as technological, organizational, and social) and individuals within an organization (Guiette & Matthyssens, 2014; Popa, Guillermin, & Dedeurwaerdere, 2015). Complexity leadership creates new managerial strategies, such as creation of adaptive change, and is concerned more on the relationships among the agents and the subsystems within an organization to achieve a specific goal (Guiette & Matthyssens, 2014).

The objectives, strategies, and action plans for a specific product market is only one part of a hierarchy of strategies within an organization. Mullins et al. (2010) noted that marketing managers are primary participants and contributors to the planning process at a corporate level, and business unit level, because they occupy positions at the boundary between the company and its customers, distributors, and competitors, and are familiar with conditions and trends in the market environment. The interrelationship between the marketing unit and other units, such as research and development, finance, and operations includes providing management with timely information for making critical business decisions. Within a marketing unit, the interconnectivity of common business practices could promote standardization.

Laszlo and Laszlo (1997) explained the evolutionary systems theory that derived from the principles of complexity and chaos, based on the assumption that systems can

exist in equilibrium and far off equilibrium, and that fluctuations or disequilibrium lead to new levels of organization, complexity, and entropy. The focus of this theory is on the interactions between the complex systems, such as the organization, and its likewise complex operating environment. The product life cycle model was drawn from the concept of the evolutionary systems theory, in which the system, product life cycle, goes through the life stages from the idea, to result, and then maintenance (Leitao, Colombo, & Karnouskos, 2016). In each phase, the primary focus of a marketing strategy is to effectively allocate and coordinate marketing resources and activities to accomplish the company's objectives within a specific product-market (Mullins et al., 2010). Another characteristic of evolutionary system is change at an organizational level or industry level through an ongoing process of coevolution in which agents, the likewise complex systems, interact with each other (Popa et al., 2015). To respond to change, the organizational leaders need to be creative and accept uncertainty. The primary responsibility of a manager is to look outside the organization and to keep the business in step with changes in the environment (Mullins et al., 2010). In the marketplace, once a strategy becomes dominant, it may be invaded by another strategy (Abatecola, Belussi, Breslin, & Filatotchev, 2015). Organizational leaders need to monitor the competitor moves in the industry, respond to their strategies, and develop strategies that will differentiate themselves from competition. This is ongoing process and requires continuous learning by the organizations.

Potential Themes

Organizational competencies-current theories. Sabatier et al. (2012) discussed the concept of dominant industry logic, where organizational leaders within an industry develop similar worldviews, make similar critical decisions about resource allocation, and create similar strategies and business models to create and capture value in the marketplace, and sustain profitability. Sabatier et al. identified the following three components of the dominant industry logic: (a) the value context-industry landscape, (b) value creation-organization capabilities (processes or business models) and competencies (knowledge-based components or technologies), and (c) value creation-business processes used to deliver products and services. Sabatier et al. defined the business model concept as a strategy that organizational leaders develop to compete in the marketplace. Sabatier et al. asserted that the managerial choices of business models reflect the managerial perceptions about the competitors, the environment, and the customer wants and needs, and how an organization could deliver and meet the customer needs. Sabatier et al. further noted a change in managerial perceptions influences the organization's decision-making process.

Sabatier et al. (2012) identified the following characteristics of the dominant industry logic within the pharmaceutical industry: (a) focus on product innovation (drug discovery, development, and commercialization), (b) value stability, and (c) use of strategic alliances and networks. Sabatier et al. discussed the pharmaceutical industry landscape and evolution and documented that the value creation and capture model is product-focused, the value chain is highly regulated and fragmented, allowing small and

medium actors to focus on innovation, and that actors within large pharmaceutical organizations control the market. Sabatier et al. documented that strategic alliances and networks are necessary for product innovation.

Kozlenkova, Samaha, and Palmatier (2014) used the resource advantage theory to explain the competition as a process of gaining comparative advantages in resources among organizations to achieve competitive advantages in the marketplace. Using the industry-based theory, Hunt (2015) argued that organizations' financial performance resulted primarily from the industry factors, by selecting cost leadership (for example, low cost position), differentiation (such as unique products and services offerings) or focus (for example, focus on a specific market segment) strategy. Hunt noted when formulating a strategy, organizational leaders examine the competition and the underlying factors within the industry. Porter (1985) provided a framework for competitive analysis by identifying five forces, such as- threats of new entrants, bargaining power of suppliers, bargaining power of buyers, threats of substitute products, and rivalry among competitive firms, to determine the industry profitability and growth. The value chain model is a useful tool to identify and manage organizations' core competencies and activities to develop a competitive advantage (Muhammad & Torbjørn, 2014; Porter, 1985; Sabatier et al., 2012).

Kozlenkova et al. (2014) evaluated the contributions of the marketing discipline to the body of knowledge of business strategy. Kozlenkova et al. discussed the resource-based, the competence-based theory, and the market orientation concept and noted in resource-based and competence-based theory, the focus is on the internal factors.

Examples of resources include distribution networks, manufacturing capabilities, research and development capabilities, and employees' skills (Kozlenkova et al., 2014). The competence-based theory explains how the organizations' leaders develop strategies to exploit resources and develop competitive advantage in target markets (Kozlenkova et al., 2014). Kozlenkova et al. argued that through competition, the organizations' leaders learn about their resources, and their position in the marketplace.

Vidal and Mitchell (2018) examined how the organization's networks and divestitures within the pharmaceutical industry develop as the organizational internal resources grow. Using the resource-based theory, Vidal and Mitchell identified the attributes that link resource development to network content, structure, and management. Vidal and Mitchell found that the relationship between the resource growth and network development is strong, and maintaining strong relationships with suppliers, customers, or social contacts is critical success factor to the organization and highly affects the organization's financial and market performance.

Thomas et al. (2015) conducted quantitative research through surveys to examine the strategic view of manufacturing, focusing on competitive capabilities, business strategies, manufacturing strategy choices, and manufacturing performance measures. Thomas et al. listed these critical competitive capabilities: (a) quality, (b) cost, (c) efficiency, (d) delivery, (e) responsiveness, (f) flexibility, (g) innovation, and (h) customer service. Thomas et al. developed taxonomy of manufacturing strategies with standard methods of cluster analysis based on the importance of the competitive capabilities, identified three distinct types of manufacturers (such as caretakers,

marketers, and innovators), and described the method of mapping manufacturing strategies. Thomas et al. found that the differences between categories were related to market characteristics, such as the degree of market differentiation and market scope, and the strategies were related to the product life cycle. Thomas et al. documented that innovators are influenced by engineering, technology, new product introductions, and research and development, focusing on modifications in business models through decreased lead times for product development and reduced manufacturing time. Thomas et al. noted that marketers with well-established products and markets focus on mature phases of product life cycle, while improving product reliability, or increased efficiency; while caretakers focus on declined phases of product life cycle. Thomas et al. recommended the need for combinations in capabilities and manufacturing strategies for revenue and profit generation.

Birkinshaw, Zimmermann, and Raisch (2016) discussed the integration of organizational dynamic capabilities to explain how organizations adopt to change. Birkinshaw at al. identified three types of capabilities that people within organizations need to possess to succeed in the marketplace: sensing (to be able to identify and assess threats and opportunities), seizing (to be able to mobilize resources to address threats and resources), and reconfiguring capabilities (needed to continuous renew tangible and intangible assets). Birkinshaw et al. showed that these three capabilities contribute to the organizations' project and product portfolio management and performance, measured through optimal allocation of resources, business strategy alignment, goals, spending, value and timing.

Barrales-Molina et al. (2014) examined the dynamic marketing and R&D capabilities in organizations. Barrales-Molina et al. focused on the influence of the organizational leaders' experience (such as chief executive officers' experience) on the dynamic capabilities, and the extent of the environmental conditions influence (market turbulence, intensity of competition, or developments in technology) on the chief executive officers' experience. Barrales-Molina et al. documented that dynamic marketing capabilities shape the markets and markets shape these capabilities, so that organizations and markets co-evolve. Barrales-Molina et al. noted dynamic marketing capabilities include adaptation and change. Barrales-Molina et al. documented that organizational leaders who foster the use of dynamic capabilities have the ability to react to changing environments by reconfiguring the portfolio of strategic competencies, respond to changing environments, and provide value to customers.

Similarly, Diestre, Rajagopalan, and Dutta (2015) examined the effects of dynamic marketing strategy and on the influence of directors' experience on new market entry, marketing capabilities, market performance, and competitiveness. Diestre focused on marketing learning focus, product innovation awareness, customer orientation, and technology utilization. Davcik, and Sharma (2016) examined the marketing capabilities and evaluated the relationship between marketing resources' performance and brand environment, marketing as a function, and marketing resource deployment. Davcik, and Sharma documented that dynamic marketing capabilities include adaptation to changing environments, and organizational leaders who use these capabilities have the ability to sustain in the marketplace.

Chang, Franke, Butler, Musgrove, and Ellinger (2014) examined the effects of new product development team characteristics focusing on the following three measures: market success or effectiveness, efficiency or meeting budgets and schedules, and the speed to market. Chang et al. documented that organizational ability to successfully develop and introduce new products to the market is critical determinant of organizational performance. Chang et al. found that team leadership, ability, external communication, group cohesiveness, and goal clarity were determinants of new product development team performance.

Eng and Ozdemir (2014) conducted qualitative research to explore the effects of research and development and marketing integration on the organizational performance focusing on technological and market competence exploitation during new product development stage. Eng and Ozdemir emphasized the need for high levels of integration between research and development and marketing to combine critical knowledge, such as technological and market, to achieve market success. Eng and Ozdemir indicated the necessity of different levels of integration based on the type of the competence that the new product development teams want to develop. Eng and Ozdemir found the market performance (such as sales and market shares) need to be distinguished from the process performance (such as meeting budgets, and time to market). Eng and Ozdemir proposed higher levels of integration between research and development and marketing if organizational leaders want to achieve higher market and technical performance in the marketplace during new product launch.

Herhausen (2016) conducted quantitative study through surveys to examine the integration between market orientation and research and development and its effect on organizational success in the marketplace in the pharmaceutical industry. Herhausen emphasized the need of high level of communication, information sharing, and collaboration between marketing and research and development during the new product development process. Herhausen found high level of synergy between marketing and research and development teams is developed when organizational leaders focus on future market needs, and that the higher the degree of integration, the higher the market performance and new product acceptance. Herhausen further indicated that the high level of collaboration between the two teams is needed to launch new products in a timely manner and achieve organizational goals in terms of sales and market shares. Herhausen documented that organizational leaders balance their product portfolio mix of existing and new products to remain competitive in the marketplace.

Riggs, Widmier, and Plank (2016) conducted a study through interviews and surveys to explore the impact of regulations and laws on the sales process and sales behaviors within the pharmaceutical industry in the United States. Riggs et al. identified the following sales behaviors and skills: building and maintaining relationships with customers, communication and presentation skills, ability to differentiate product/service from competition, selling, getting to buy skills, market targeting, designing sales plans, and business planning. Riggs et al. documented that salespersons, and marketing and promotional materials offered directly to the physicians are impacted by pharmaceutical regulations and laws that affects compliance.

Marketing strategy. Olson et al. (2018) evaluated the evolution of the field of strategic marketing. Olson et al. documented that strategic marketing focuses on organizational, inter-organizational and environmental topics concerned with (a) the behavior of organizations in the marketplace in their interactions with consumers, customers, competitors and other external environment, in the context of creation, communication, and delivery of products that offer value to customers in exchanges with organizations, and (b) the management responsibilities associated with the marketing function in organizations. Olson et al. focused on the organizational behavior in the marketplace, and discussed fundamental issues in the field of marketing, such as: (a) the differences in the marketing behavior of competing businesses in the marketplace, and their financial performance of competing product lines or brands, and (b) the factors influencing the organizational behavior in the marketplace.

Mullins et al. (2010) provided a thorough explanation of marketing strategy models that organizational leaders employ through various stages of the product life cycle. These models can be applied equally to services and physical products, single-product start-ups, and multidivisional corporations, global and domestic. Mullins et al. examined the relationship between the organization's competitive strategy and the strategic marketing program for each product during product life cycle, and the marketing implications of ethical standards. Mullins et al. found that an organization is likely to achieve superior revenue growth, market share and profitability when the competitive strategy is aligned with the strategic marketing program.

Integrated marketing. Paich, Peck, and Valant (2011) documented that cross functional teams develop marketing strategies in the pharmaceutical industry, based on their perceived expectations of marketing strategies' effects on market penetration, sales, or quality. Paich et al. developed integrated framework for pharmaceutical markets, that consists of three components (such as patient flow, physician adoption/prescribing, and treatment attractiveness), emphasizing the link and the dynamic relationships between the knowledge of market dynamics and the resulting behavior, that is essential to effective strategic decision making, marketing initiatives, and resource allocation. Paich et al. addressed the need to look into the market segments by therapy, product, or patient segments, and identified and discussed the factors influencing the key components for treatment options of a specific indication, such as safety, efficacy, tolerability, side effects, and mode of administration. Paich et al. asserted when drug toxicity problems are associated with a specific treatment program, then safety might be a key product attribute of treatment attractiveness; or, for established products in terms of efficacy, side effects might be the key attribute of treatment attractiveness.

Jasper, Leenders, and O'Shannassy (2017) examined the interaction between brand orientation and market orientation in the pharmaceutical industry. Jasper et al. discussed the two concepts and documented that brand orientation emphasizes the organizational brand identity and covers organizational culture, strategy, and behavior, while market orientation emphasizes the importance of the customer. Jasper et al. documented that these two strategies are complementary, and suggested organizational

leaders to combine the two approaches when developing a marketing strategy to gain competitive advantage in the marketplace.

Relationship marketing. Payne and Frow (2017) examined the concept of relationship marketing and explored the factors for relationship marketing success. Payne and Frow documented that organizations engaged in relationships with other organizations and customers to develop and leverage resources (competences, information, or processes) to achieve competitive advantage and superior financial performance. Payne and Frow viewed the relationship marketing as an organization's competence for developing relationship with others to allow organizational leaders to compete more efficiently and effectively by using their resources and competences. The use of market-sensing and customer-linking capabilities is a critical success factor to organizations.

Nätti, Pekkarinen, Hartikka, and Holappa (2014) documented that the value for a customer in business-to-business relationships is not created from the use of one resource only, but from a mix of supplier-customer interactions that support the successful use of the product offerings (deliveries, invoicing, or customer training). The suppliers need to understand how they can deliver value beyond the product offerings. Dauksevičiute and Simkin (2015) documented that different marketing programs differ in their effectiveness and recommended resource allocation model for optimal mix. Dauksevičiute and Simkin recommended (a) strategic use of financial programs in attracting new customers or as a response to competitors, long-term; and (b) structural relationship marketing investments

by increasing interaction frequencies with customers of above the average to generate positive short-term economic returns.

Resource allocation. Kumar et al. (2017) examined the model of dynamic marketing-mix optimization, and resource allocation focusing on time-varying marketing effectiveness, product margins, and costs. Kumar et al. found the following: (a) the optimal allocation in marketing activities are directly proportional to their effectiveness, and inversely proportional to their costs; (b) optimal spending is influenced by how costs change over time, and spending on a marketing activity should increase or decrease as its cost decreases or increases over time; and (c) shifts in spending from one marketing variable to another variable during product life cycle as a result of time-varying effectiveness of marketing efforts. Kumar et al. indicated companies spend on interactive activities, such as social media even when their effectiveness is unproven, because of the lower costs compared to TV advertising.

Strategic management approaches. Song and Han (2016) discussed strategies that organizational leaders of innovator organizations that market brand name medicines could employ to extend the commercial life of a drug and retain market shares. Song and Han identified four strategic choices: (a) prevention strategy, where organizational leaders extend patent protection through legal measures (patent clusters, or secondary patents to cover multiple aspects of the drug) with the intent to temporarily prevent competition, (b) innovation strategy, where organizational leaders avoid competition through product innovations (product line extensions, introduction of new indications, introduction of follow-on drugs, or switches from prescription to over-the-counter drugs)

or business model innovation (adjusting business models to changing environment), (c) extraction strategy, where organizational leaders exploit current market position without investing in product innovation (through pricing strategies, marketing campaign, promotion, cost reduction initiatives, or selling or licensing the drug to a generic drug supplier prior to patent expiry) and (d) adoption strategy, where organizational leaders enter the generic market segment through a launch of authorized branded generics (launch of generic drugs or developing and launching a generic drug through a subsidiary). Song and Han documented that development of a patent extension strategy requires (a) understanding of the business environment and industry dynamics, (b) strong collaboration between marketing managers, scientists, and attorneys to optimize the use of product life cycle management concept, and (c) use of marketing mix instruments (combination of product attributes, pricing, and promotional strategies).

Innovation. Sternitzke (2014) investigated different types of innovation, such as radical innovations, market breakthroughs, technological breakthroughs, and incremental innovations in the pharmaceutical industry focusing on time-to-market aspects, knowledge sources, and protection strategies. Sternitzke provided an overview of the studies investigating lag structures between research, development, and product introduction, and commercialization, and discussed the product life cycle management. Sternitzke documented that once a drug is developed, organizational leaders apply different product life cycle management strategies to further develop and protect the product innovation by patenting new formulations, combinations, uses, molecules, or manufacturing processes. Sternitzke asserted these strategies provide opportunities to the

manufacturers to reduce the manufacturing costs, improve the product quality, reduce the drug development costs, and introduce the new product variations to the market faster since clinical studies already exist. Sternitzke also discussed the benefits for both the patients, and the organizations. Sternitzke noted pharmaceutical organizations consider the speed of filing new patents in order to gain or sustain competitive advantage in the marketplace, not only the amount of patent filings.

Spieth and Schneider (2016) examined business models focusing on innovativeness. Spieth and Schneider documented that business models reflect organizational leaders' beliefs about market needs, and describe the way organizations function. Spieth and Schneider described the business model innovation as a search for finding new ways to create value for its stakeholders, define value propositions for customers, suppliers, and partners, and generate revenues, to sustain competitive advantage in the marketplace. Spieth and Schneider documented that organizations' leaders compete with different business models, profitability is adversely affected by competition, and that a business model could be adopted by a competition. Spieth and Schneider showed a positive correlation between innovation and profitability, and suggested that organizational leaders need to implement innovations in their business models to differentiate in the marketplace.

Park, Srivastava, and Gnyawali (2014) examined the relationships among product innovation, competition, and profit generation. Park et al. found that sustained profitability results when an organization introduces innovations repeatedly over time, and that even though the return on investment in innovation might erode over time, the

innovation ensures high performance position in the marketplace in terms of sales and profit. Park et al. did not find a link between the persistence of profit and the ability to avoid competition.

Dubois, de Mouzon, Scott-Morton, and Seabright (2015) examined the relationship between market size and innovation in the pharmaceutical industry in the United States. Dubois et al. measured elasticity of innovation as number of new molecules launched in the market for a given therapeutic class, and the market size in terms of revenue sales. Dubois et al. documented that large market size may induce innovation and innovation creates sales and market. Dubois documented that innovation might intensify competition in the marketplace, and reduce prices and profit margins. Dubois et al. found a significant positive elasticity of 23.1%, indicating that additional $2.5 billion in additional revenue is required to induce an invention of one additional molecule. Dubois et al. documented that economic costs to develop a new molecule are estimated $800 million to $1 billion, and marketing costs represent 50% of revenue sales. Dubois et al. asserted that innovation is becoming more difficult and expensive over time, and the costs for regulatory approval are rising.

Ambrammal and Sharma (2014) examined the innovation activities focusing on investment in research and development, and patent policy as measures of innovation in Indian organizations. Ambrammal and Sharma examined the innovation in multiple industries, including the pharmaceutical industry. Ambrammal and Sharma documented that innovation is critical in obtaining a competitive advantage in the marketplace, and

demonstrated that foreign business leaders within the pharmaceutical industry are relocating their R&D activities into India to capture the growing market size.

Diversification strategy. Rusu, Kuokkanen, and Heier (2011) employed a case study approach to explore the current business practices focusing on diversification strategies, generic competition, and pipeline management. Rusu et al. discussed the diversification strategies, including expansion in new markets or business areas through acquisitions (such as entering animal health market), expansion of portfolios (for example, by including biotechnology products), or geographical expansion (for example, increased presence in high growth emerging markets). Rusu et al. emphasized the importance of the pipeline management strategies that include continuous introduction of new compounds, and timing of market entry to compensate for losses as a result of increased competition of already established markets. Rusu et al. found that the pipeline management could be established through mergers and acquisitions, and through prioritization of research and development activities (by discontinuing projects, out-licensing technologies to other research organizations or pharmaceutical companies, or partnering and co-developing molecules with other organizations).

Barei and Ross (2015) employed qualitative study through interviews, and explored the innovation model in the organizations' management systems, business models, and product portfolios within the generic pharmaceutical industry. Barei et al. focused on the re-innovation, where generic pharmaceutical manufacturers and marketers are improving existing product attributes, new configurations, replacing new components, or using new technology to produce new innovative products. Barei et al. discussed the

challenges that generic pharmaceutical organizations' leaders are facing in intensified competitive environment, such as: (a) product differentiation through improved management processes, restructured business models, and value proposition to customers; (b) optimization of product quality; (c) reduction of manufacturing costs; or (d) reduction of time to market. Barei et al. found that organizations that implement new competitive strategies employ re-innovation model into their product portfolio and business models to provide cost-effective products to meet the demand, and health care systems' requirements for high quality accessible treatments.

Strategic alliances. Liu, Pu, and Schramm (2016) examined the role of strategic alliances among organizations and their financial performance focusing on innovation (such as patents) in pharmaceutical industry. Liu et al. documented that business leaders engage in partnerships with other organizations in the value chain model during different product life cycle stages. Liu et al. documented stronger responses in early stages of product development, or in later stages, during product line extensions. Liu et al. found that alliances and strategic partnerships with other organizations (in the area of marketing, research and development, or manufacturing) is important driver of innovation and critical factor that influences organizational financial performance.

Marketing instruments. Song and Han (2016) examined the strategy choices and the use of marketing mix instruments (product, price, promotion, and place) in the marketing of pharmaceuticals. Song and Han recommended development and implementation of a different mix of marketing strategies during different stages of product life cycle to extend the product life and achieve the company goals. Song and

Han also documented that determining the marketing strategies depends on organizations' capabilities, priorities, and opportunities. Similarly, Kumar et al. (2017) noted organizational leaders determine the dominance of a marketing variable or a mix of variables during different stages of product life cycle, and allocate resources accordingly due to the factor time-varying effectiveness of marketing activity.

Song and Han (2016) documented that the marketing instrument "place", which determines where and how the product will be sold, is insignificant in the marketing of pharmaceuticals because of the market nature and characteristics (regulated market), strategic decisions regarding the marketing instrument "product" need to take place at early stages of product life cycle because of the time needed to develop a product, while strategic decisions about the marketing instruments "price" and "promotion" depend on the market conditions. Kumar et al. (2017) linked the drug efficacy with the investment in advertising. Kumar et al. asserted when investing in advertising, or marketing communications mix at the beginning of a new prescription medicine life cycle, a pull strategy (for example, by using a journal advertising targeting physicians) is more effective when the uncertainty about the drug's efficacy is high, while in later stage as the physicians learn though experience and the uncertainty about the drug's efficacy is reduced, a push strategy (through detailing, or e-detailing) is likely to be more effective instrument to increase sales and gain market share.

Product life cycle management. Mullins et al. (2010) presented the product life cycle model as a framework that provides opportunities and threats in the marketplace and the industry, in order to help the organizations better anticipate changes in the

product's strategic market objective, its strategy, and its marketing program. Mullins at al. found that products go through five distinct stages, such as introduction, growth, shakeout, maturity, and decline during their life cycle, or do not follow the curve because of multiple factors. Mullins et al. recommended by identifying and understanding the stage of the product life cycle, business leaders can identify the responses that marketing decision makers make to the changing circumstances faced by the product.

Prajapati et al. (2013) identified and described approaches to managing and extending the life cycle of pharmaceutical products to maximize the return on investment. Prajapati et al. asserted the rise in development costs for new molecules, the decline in launch of new products and the productivity of research and development, caused the pharmaceutical companies to rely on the life cycle management strategies to maximize their profitability. Prajapati et al. provided a model of life cycle stages: (a) product development phase (involves development of new product idea), (b) approval phase (regulatory approval), (c) introduction phase (includes product launch and maximum impact on sales), (d) commercialization and quality management phase (associated with a period of highest sales returns and focus on increasing market share), and (e) decline phase (associated with product withdrawal and decline in market shares).

Nikolopoulos, Buxton, Khammash, and Stern (2016) identified four product life cycle stages: (a) introduction-associated with low product sales and high marketing costs; (b) growth-characterized with increased product sales and introduction of lower priced imitation products from the competitors; (c) maturity-characterized with peak product sales followed by a decline, and intense market share competition; and (d) decline-

decline of product sales and profits from product sales. Nikolopoulos et al. documented that the product life cycle applies to both brand and generic prescription drugs. Nikolopoulos et al. provided a forecasting competition model of brand and generic prescription drugs before and after patent expiry. Nikolopoulos et al. asserted that marketing managers need to understand the product life cycle model and the sales patterns, and apply different marketing strategies for each stage of the product life cycle to address these patterns.

Wagner and Wakeman (2016) described the commercialization of a product as a process from product invention to post-patent expiry, and provided a model of life cycle stages: (a) pre-launch phase, where R&D activities and clinical trials take place; (b) marketing and sales phase, where companies sell patented products under exclusivity, and (c) post-exclusivity phase, where the patents lose exclusivity, and generic drug competition exists. Wagner and Wakeman discussed the speed of product commercialization, and the factors influencing the speed of product commercialization: the duration of clinical trials during pre-launch phase, and the organization's investment into the product commercialization. Wagner and Wakeman documented that pharmaceutical organizations spend about 17% of their sales from prescription drugs on R&D activities. Wagner and Wakeman asserted that organizations invest more resources into products with high expected value (such as the economic importance of the treated decease and the problem it solves, and product quality), and bring these products to market faster than products with low expected value and return on investment.

Visiongain (2018b) investigated and analyzed the life cycle management strategies that companies are using to maximize the product commercial life and revenue generation, consisting of measures, such as reformulations, new combinations of drugs and expanded indication ranges, and the use of alliances, licensing, mergers and acquisitions. The team members provided forward-looking sales analysis from 2010-2020, company directions, discussions of commercial and technological developments and analysis of market drivers and restraints, competition, opportunities and threats influencing the various aspects of product life cycle management for pharmaceuticals. The team members indicated that optimized product life cycle management will be of crucial importance to the pharmaceutical industry in the coming years.

Pramod, Tahir, Charoo, Ansari, and Ali (2016) discussed product development strategies focusing on the product quality, and their impact on the product portfolio performances in pharmaceutical and organizations. Pramod et al. addressed the importance of project and product portfolio management on the organizations' performance in the marketplace, and noted research and development processes are crucial for successfully developing innovative products. Pramod et al. emphasized the need of continuous product quality and process improvements throughout the life cycle from development through commercialization and beyond product discontinuation.

Product portfolio management. Haezendonck, Willems, and Hillemann (2016) examined the development of the market growth matrix that analyzes the impact of investing resources in different business or products on the company's future earnings. Haezendonck et al. noted organizational leaders used the market growth matrix as a tool

in portfolio planning with a goal balanced product portfolio. In the context of strategy planning for products, Haezendonck et al. discussed the implications of the resource requirements, the earnings potential and the different types of strategies within the four categories: (a) question marks: products with low market share in high-growth markets; (b) stars: products with high market share in a high-growth markets; (c) cash cows: products with high market share in low-growth markets; and (d) dogs: products with low market share, high costs in low growth markets. Haezendonck et al. documented that by identifying the state for each product in the company's portfolio mix, and by evaluating the competitive strength, growth potential, profitability and costs within the matrix, business leaders can better identify strategies to balance the company's portfolio and achieve company's goals.

Brand prescription drugs. Kanitz and Burmann (2012) investigated the management of the brand portfolio of an organization in the pharmaceutical industry focusing on three dimensions, such as product differentiation, indicator of origin, and the status of reimbursement, and their connection with the market segments and geographical market areas. Kanitz and Burmann asserted brand portfolio includes all the existing brands and sub-brands attached to product-market-offerings, including co-brands with other firms. Kanitz and Burmann discussed the importance of having robust brand portfolio on different levels, such as- product line level, therapeutic category level, or corporate brand level, and opportunities for product differentiation in the marketplace within each level. Kanitz and Burmann suggested in an increasingly competitive environment, marketing managers need to be able to coordinate and communicate the

whole brand portfolio to address the complex customer network to gain and sustain competitive advantage in the marketplace long term.

Specialty pharmaceuticals. Hartman et al. (2015) provided an overview of the underlying factors contributing to the growth of health care expenditures in 2013, focusing on the prescription drug expenditures. Hartman et al. discussed the specialty pharmaceuticals market and published specialty pharmaceuticals accounted for less than 1% of prescriptions dispensed in the United States, and 28% of total prescription drug expenditures in 2013. Hartman et al. focused on specialty drugs used to treat cancer and multiple sclerosis. Hartman et al. asserted specialty drugs are associated with higher specialty drug prices, increase in prices of existing specialty drugs, and increased introduction of new specialty drugs to the market. Similarly, Martin et al. (2016) documented increased use of higher priced specialty pharmaceuticals in 2014, focusing on specialty drugs used to treat hepatitis C.

Hirsch, Balu, and Schulman (2014) discussed the nature of the specialty pharmaceuticals market, market dynamics and the competitive environment, the reimbursement plans, and pricing strategies. Hirsch et al. documented that the market segment is characterized with increased competition, big pharmaceutical entry to specialty markets, and financial crisis. Hirsch et al. identified the following market drivers: increasing reimbursement from health care organizations and government, biotech growth, and industry regulation. Hirsch et al. identified the following critical success factors: product differentiation, market growth, and market size at launch.

Generic prescription drugs. Costa-Font, McGuire, and Varol (2014) showed that the generic medicines are low cost alternatives to the brand medicines that lead to substantial health care costs savings, increased affordability worldwide, growing market opportunities, or intense competition by other generic medicines, brand medicines, over-the-counter medicines, and bio-pharmaceuticals. Hartman, Martin, Lassman, and Catlin (2015) documented that generic drugs were priced 80-85% lower than their branded counterparts of the same medication. Moe-Byrne, Chambers, Harden, and McDaid (2014) investigated the effectiveness of behavior change interventions (such as financial incentives, electronic prescribing, or educational intervention) to encourage prescribing of generic prescription drugs. Moe-Byrne et al. documented that generic medicines are substitutes for branded medicines with the same quality, efficacy, and safety, priced 0-80% lower than their branded counterparts. Generic medicines offer opportunities to the health care insurance organizations and governments to reduce the health care costs. Moe-Byrne et al. conducted a literature review focusing on the evidence for interventions to increase generic prescribing rates. Moe-Byrne et al. indicated that the evidence was insufficient to determine is a specific intervention or a combination influences the rate of prescribing generic drugs.

Costa-Font et al. (2014) examined the effects of price regulations on generic drug entries in the market. Costa-Font et al. discussed the market structure, the market competition, and the market size focusing on the generic drugs, and documented that the generic drugs have lower net profit margins, and are subject to intense price competition compared to brand name drugs. Costa-Font et al. also documented that the expected sales

for generic drugs are a function of the branded name molecule sales prior to launch and the expected market penetration sales from the generic drug following market entry. Costa-Font et al. found that the higher expected prices of the generic drugs were, the lower was the time to launch of the generic drugs. Costa-Font et al. documented delays in the generic drug launches on products with high branded name molecules achieved through the use of regulatory mechanisms. Costa-Font et al. also found that (a) the expected market share of the generic drugs following market entry was a significant determinant of launch, controlling for price, therapy, molecule characteristics, competition, and organization, and (b) the expected generic competition at the time of product launch had a significant effect on the organizations' launch strategies and market entry.

New product launches. Camejo, McGrath, Miraldo, and Rutten (2013) noted organizational leaders continuously include new products in the management of their product portfolio, and documented that the introduction of new drugs is needed because over time, it increases the clinical effectiveness of the drugs within a specific therapeutic area. Camejo et al. discussed the cause and effect scenario of the innovation model on the product price and research and development costs, and recognized the dynamic nature of the model that is therapy specific, and occurs at different rates across therapeutic areas. According to Camejo et al., drug prices of new products and their substitutes available in the market are expected to decrease due to increased market competition over time, while the R&D costs increase causing an increase in the minimum price constraint for new market entrants.

Similarly, Matikainen et al. (2015) conducted quantitative research through surveys to examine the impact of new product launches on the product performance during various stages of product life cycle. Matikainen et al. examined determinants influencing the product financial performance, and customer acceptance. Matikainen et al. identified the following key factors that influence the new product launch success and product commercialization: order of market entry, marketing mix instruments (product, price, promotion, and distribution), sales, corporate culture, organization capabilities, market orientation, and customer relationship. Matikainen et al. emphasized the importance of relationship marketing, and recommended marketing managers to consider the product life cycle management model when creating marketing programs during the product commercialization process.

Prajapati et al. (2013) provided an overview of the managerial activities during product development phase for both brand drug and generic drug launch. Prajapati et al. documented that the product development phase of a brand drug involves development of a new product idea, assessment of patentability of the drug formulation, and changes in formulation and methodology. Prajapati et al. noted development of a generic drug involves selection of the active pharmaceutical ingredient, drug formulation, patent search of innovator drug, establishing safety and good manufacturing practices requirements, and selection of appropriate type of testing to establish bioequivalence. Prajapati et al. recommended organizational leaders to document the progress and the failures of a molecule to utilize its economic potential as part of the product life cycle management strategies. Similarly, Khanna, Guler, and Nerkar (2016) also documented

the need organizational leaders to document the successes and failures of molecules during product development.

Patents. Kakkar (2015) and Song and Han (2016) documented that patents are primary tools to establish brands in the marketplace, and enforce market exclusivity of inventions. Song and Han documented the use of secondary patents (such as additional features of the active pharmaceutical ingredient, method of use, or formulations) as a strategy to improve the primary patent, protect the branded drug, and maintain market shares in the case of competition from generics. Similarly, Berger at al. (2016) discussed patent strategies and documented that drug manufacturers employ various patent strategies during product life cycle could affect formulary planning and managed care decisions. Berger et al. documented that patent protection is valid for 20 years at time of patent filing, out of which 10 years are spent in product development and regulatory review, and the remaining 7-10 years life at time of approval and commercialization phase.

Product differentiation. Schramm and Hu (2013) reviewed the challenges that brand, generic and biosimular drugs companies were facing in the marketplace, associated with product launch strategies, positioning and patent expiries, exclusivity in the marketplace and the return on investment. Schramm and Hu described the impact and addressed the importance of product differentiation in the pharmaceutical sector, defined as developing new product with existing molecule with an objective to increase patient convenience, or improve drug efficacy and safety profile, or find new usage. Schramm and Hu summarized that at times when development costs are increasing and the research

and development of new drugs activities are decreasing, development of differentiated products could be a successful strategy to extend the life of a molecule and help increase company profitability.

Product line extensions. Kalepu and Nekkanti (2015) examined the use of product line extensions as a strategy to maximize profits and extend the life of the molecule in the pharmaceutical industry. Kalepu and Nekkanti found that line extensions have the potential to expend a market, cannibalize sales from an older generation market, earn considerable revenues, and increase the market share after patent expiration and the establishment of a generic market segment. Song and Han (2016) investigated the relationship between sales and pricing associated with the competition, the timing of market entry and the effects on market shares, the legal regulations for line extensions, and the exclusivity of line extensions.

Authorized generic drugs. Appelt (2015) assessed the impact of authorized generic entry on generic entry post patent expiry between 2002 and 2007. Appelt documented organizational leaders of innovator companies that market brand-name drugs could introduce authorized generic drugs through their generic drug division or a generic drug subsidiary that markets a generic version of a brand-name drug prior to loss of exclusivity as a means to fight competition. Appelt argued that authorized generics entrants directly compete with generic entry post patent expiry, enter the market prior to generic entrants and capture larger market share. Appelt emphasized the importance of a robust product portfolio and found that brand-name companies with noncore products in years prior to patent expiry were more likely to launch authorized generics, and had no

significant impact on the likelihood of generic drug entrant entering the market and the number of generic entrants.

Price. Iacocca, Sawhill, and Zhao (2013) examined the pricing of brand-name prescription drugs. Iacocca et al. focused on (a) the effects of the competition, (b) the age of the drug, (c) the manufacturer, and (d) the therapeutic purpose, and their effects on the pricing. Iacocca et al. collected data from 598 commonly prescribed brand prescription drugs in a chain store in the United States. Iacocca et al. found that (a) the number of brand drugs and the number of generic drugs within a therapeutic class do not explain the price of a brand drug; (b) newer drugs were associated with higher prices; the drug prices and the dozing levels had a positive correlation (for example, prices decreased as dosing levels increased); (c) drugs that treat uncommon and life-threatening conditions were priced significantly higher than drugs that threat common and non-life-threatening conditions; and (d) the prices among manufacturers differed. Iacocca et al. documented that drug efficacy, side effects, advertising costs, the production costs or supply chain processes might influence the manufacturer pricing decisions. Iacocca et al. did not find evidence to explain drug price variations. Iacocca et al. found evidence to explain what variables could be used to explain variations in drug prices.

Kanavos (2014) examined the price dynamics of brand-name prescription drugs following generic entry and competition. Kanavos discussed the market dynamics post-patent expiry. Kanavos obtained data from 101 molecules with expired patents for period 1998–2010. Kanavos found that generic entry did not lead to lower brand-name prescription drug prices, the price elasticity of demand was low, and that even though the

market share of the brand-name prescription drugs eroded post-patent expiry following generic entry, a small market share remained. Kanavos also found that the number of competitors affected the prices, and the competition from generic entries does not necessarily lead to decreases in prices of brand-name drugs.

Van der Shans et al. (2017) examined the impact of price erosion on the cost effectiveness of new therapies in the chronic obstructive pulmonary disease market, as a result of market competition and loss of exclusivity. Van der Shans et al. discussed the market nature and the pricing patterns of available treatments for lung-related chronic conditions. Van der Shans et al. identified the following factors influencing the minimum new product price: the cost of capital, the cost of regulation, the market size, the patent time, and the speed of market introduction. Using the cost effectiveness model, Van der Shans et al. computed the cost effectiveness of each drug compared to their substitutes, and discussed the observed price trends. Van der Shans et al. found that even though prices decreased over time, the potential for price erosion was dependent on the market characteristics, such as the improvements in clinical effectiveness, the changing price of competitive products, the number of competitors, the launch of new drugs, and the degree of generic introduction.

Promotion and advertising. Datta and Dave (2017) examined the effects of promotion on physicians' prescribing behavior. Datta and Dave documented that promotional instruments include direct to consumer advertising via print media or broadcast, advertising in professional journals, and direct to physician promotions through detailing and sampling. Datta and Dave documented that detailing and sampling

accounted for 83% of the pharmaceutical budget. Datta and Dave found detailing impacts the prescribing on the promoted brand drug and does not impact the number of the scripts within the therapy class.

Similarly, Haughton et al. (2015) examined the marketing efforts across various stages of product life cycle on large number of pharmaceutical brands and their effects on price elasticity of demand and sales. Haughton et al. documented that new product introductions and innovations require substantial marketing efforts, regardless of the effects, and proposed diffusion of innovation model to model the effect of pharmaceutical marketing efforts with emphasis on promotional instruments, such as detailing, and medical journal advertising. Haughton et al. found that marketing efforts differ across product life cycle stages.

Ruiz-Conde, Wieringa, and Leeflang (2014) examined the effectiveness of pharmaceutical marketing focusing on detailing, sales, and new development products, and the impact of scientific reviews on sales and marketing expenditures. Ruiz-Conde et al. noted that the pharmaceutical industry spent $10.7 billion on promotions, and documented that the pharmaceutical industry is an important contributor to the health and prolonged lives of people. Ruiz-Conde et al. found that appropriate marketing spending strategy significantly influences product sales, the return on investment, market share, and the length of the stage of product life cycle. Ruiz-Conde et al. emphasized the need of marketing budget allocation, and implementation of different marketing strategies during stages of product life cycle. Ruiz-Conde et al. suggested investment in marketing activities directed to the physician in the first 12 months after new product introduction to

increase the trial rate, and decline in spend during maturity stage and increase of return on investment.

Schulz et al. (2014) examined the marketing efforts of pharmaceutical sales representatives directed at the physician (detailing, product information included with the medication, and product information provided by the sales representative) and marketing efforts directed at the patient (direct-to-consumer advertising), and their impact on the sales and the demand of branded prescription drugs in the United States. Schulz et al. documented that the effects of the marketing efforts on the demand are small and depend on the product market characteristics. Schulz et al. asserted that detailing was the main driver for demand, followed by product information provided by the sales representative, and DTC advertising. Schulz et al. also documented that detailing is more effective tool to drive demand compared to direct-to-consumer advertising.

Ju and Park (2015) examined the use of marketing communication strategies focusing on direct to consumer advertising strategies, messaging, and spending. Ju and Park identified the following factors that influence advertising: the product life cycle, the market characteristics and the market size, the product attributes and usage, and the purpose of the treatment (continuous, occasional, or repetitive use). Ju and Park documented that advertisement expenditures depend on the competitiveness within a therapy class, and the return on investment on sales during the life cycle of brand prescription drugs. Ju and Park noted direct to consumer advertising is effective marketing tool for a brand recall and raising awareness. Ju and Park found strong relationship between communication strategies and therapeutic categories, different

levels of spending across different therapy classes. Ju and Park suggested factors, such as- the competitive environment and the stage of the product life cycle, need to be taken into consideration when creating marketing communications strategy for a product.

Market dynamics. The health care industry accounted for 17.5% of the gross national product in 2014 in the United States, and the expenditures for pharmaceuticals represented 12.2% of the total health care expenditures in 2014 (Martin et al., 2016). Prescription sales accounted for $448.2 billion in 2016 in the United States, an increase of 5.8% compared with 2015, driven by the increased prices of existing products, spending on new products, and the volume of drug utilization and mix (Schumock et al., 2017). Schumock et al. provided a framework for projecting medicines expenditures in the United States that captured the impact of patent expirations, new product launches, the regulatory, industry, and market developments. The basis for the projections of medicines expenditures included historical trends, knowledge of the life cycle of existing products, and R&D pipelines or new product launches.

Berndt, Nass, Kleinrock, and Aitken (2015) discussed the sales and economic and financial returns in the pharmaceutical industry. Berndt et al. analyzed the economic returns of prescription drugs launched in period 1991-2009, and compared revenue fluctuations over time to determine patterns in sales and profits from pharmaceutical innovation. Berndt et al. demonstrated that present value of lifetime net economic returns reached peak and upward trend in sales in period 1995-2004, and then declined in period 2005-2009 as a result of rising R&D costs and decline in demand growth. Berndt et al. concluded that pharmaceutical companies will not be able to maintain the rates of

investment needed to innovate, and documented the need for changes in health policy or business models to find new streams of profit.

Supply side and demand side factors. Lee, Bloor, Hewitt, and Maynard (2015) evaluated the supply side and demand side factors and their influence on the marketing strategies. Lee et al. documented the following supply side factors: (a) industry regulation (government price control intervention, market authorization procedures and the health care reimbursement plans, and patent expiry), (b) the effects of educational approaches, drug samples and generic substitution targeting physicians' prescribing behaviors, and (c) the effects of reimbursement programs and savings account plans, physicians' prescribing behavior targeting patients. Lee et al. identified the characteristics of prescribing physicians and the targeted customers (such as their attitudes, beliefs and preferences, number and size, purchase frequency, sensitivity and responsiveness to various marketing instruments, and history of past behavior) as demand side factors.

Similarly, Rémuzat et al. (2017) documented reimbursement plans and reference pricing, and government price control intervention and price reevaluation as supply side factors. Rémuzat et al. documented the following demand side factors: (a) policies directed to physicians (such as prescription quota, monitoring of drug prescriptions, drug substitutions, and publications, education, and information), (b) policies directed to pharmacists related to drug substitutions, and (c) policies directed to patients (such as healthcare plans, and information and education). Kalcheva, McLemore, and Pant (2018) examined the supply side and demand side factors and their effects on innovation. Kalcheva et al. identified the following supply side factors: (a) the characteristics of the

industry (such as industry growth rate, entry and exit barriers, the characteristics of the focal business, competitors' characteristics, and history of past behavior), (b) the characteristics of the organization (such as resources and skills), and (c) the characteristics of the product offerings and services offerings.

Dunne and Dunne (2015) evaluated the developments in the demand side of the market for pharmaceuticals over the past several decades focusing on the physicians, pharmacists, and patients. Dunne and Dunne evaluated (a) the relationship between the insurance coverage and sales throughout product life cycle, and (b) the dynamics of the generic competition. Dunne and Dunne published that the increased insurance coverage can impact product sales. Dunne and Dunne further argued that the primary objective of the actors within managed care organizations were to actively manage drug benefits to switch individuals to lower cost alternatives, and encourage the use of generic prescription drugs when they become available for a branded product with the same active ingredient through benefit management techniques, such as tiered formularies, prior authorization, step edits, and higher fees to pharmacists for dispensing generics. Dunne and Dunne documented in the United States, payers used the generic competition as a primary cost containment mechanism to achieve prescription drug expenditure savings.

Competition strategies. Organizational leaders within pharmaceutical companies need to monitor the competition to determine the industry profitability and growth. Using the Porter's five forces for competitive analysis (Porter, 1985), Schramm and Hu (2013) identified the strong buyer power, strong supplier power, low entry barriers and intense

competition as forces that are shaping the pharmaceutical industry. Liao et al. (2015) discussed strategies to achieve competitive advantage and documented that organizations build competitive advantage through innovation and effective market engagement.

Kelton et al. (2014) examined the trends in drug reimbursement by Medicaid programs following patent expirations, post generic entries, for numerous therapeutic classes. Kelton et al. researched the relationship and interactions among generic prescription medicine entry, prices, and market shares. Kelton et al. documented that generic share and price are simultaneously determined, while the number of generic entrants is a key determinant of generic market share and the generic-to-brand price ratio. Kelton et al. showed that brand prices react to generic competition and each additional entrant was associated with a decline in brand prices. Kelton et al. also found that the reimbursement for branded drugs post generic entry significantly reduced, the number of generic entrants influenced the percent of the reimbursement reduction, and that the reimbursement for branded drugs after patent expiration decreased for 2% per quarter. Kelton et al. concluded that the health care reimbursement programs have been able to provide a relief from higher drug prices for branded medications following patent expirations by adjusting the reimbursement for the branded drugs.

Dunne and Dunne (2015) observed the dynamics of generic competition and found the following: (a) high generic utilization of commercially significant products after patent expiration; (b) a strong positive relationship between the number of generic entrants and the intensity of generic price competition; and (c) the more generic entrants, the more rapid the erosion in the brand product market share in units in favor to generics.

Duflos and Lichtenberg (2012) discussed strategies that organizational leaders are implementing for branded name drugs following patent expiration, such as market segmentation strategy focusing on small fraction of customers who are not prices sensitive, and price increases over time.

Tenn and Wendling (2014) researched the determinants of generic entries and their impact on the brand sales. Tenn and Wendling examined the following key areas that affect the way the generic entry and the patent expiry impact on the market: (a) the prescribing environment, the regulatory environment, and the health insurance coverage; (b) the market size; and (c) the pre-patent expiry environment and bioequivalence testing. Variables used in the study were: product sales, price, and the age of the molecule. Tenn and Wendling found that both the generic entry, and the leg between the generic entry and patent expiry were linked to the market size at patent expiry. Tenn and Wendling also found that the speed of which brand sales decreased was directly proportional to the market size and the price of the brand prior to generic entry. Tenn and Wendling concluded that products that generated higher sales attracted generic competition and emphasized the importance of the market size.

Duflos and Lichtenberg (2012) examined the effect of competition on the drug prices, marketing expenditures, and drug utilization in the United States. Duflos and Lichtenberg discussed the dynamic nature of the industry, market exclusivity, and the market structure. Duflos and Lichtenberg observed rapid increase in the generic market shares after the Hatch Waxman Act, and concluded that the policy makers achieved their primary objective, that was facilitating availability of low priced drugs after patent

expiration. The results reflected the insurance arrangements and the regulatory or legal framework relevant to the United States territory. Duflos and Lichtenberg found (a) price and marketing expenditure declined by 50 to 60% in periods following generic market entry, and (b) increased utilization in the generic drugs, and reduced utilization of branded prescriptions after patent expiration, while the number of prescriptions remained constant during the same period. Duflos and Lichtenberg concluded that the competition from generics does not appear to have an effect on the drug utilization, controlling for price and marketing. Duflos and Lichtenberg also found (a) a strong inverse relationship between changes in the generic drugs' market share and changes in manufacturers and wholesalers' revenues, consistent with the age profiles of the generic drugs' market share, and price; (b) the changes in market structure may cause changes in utilization levels of other drugs within the same therapeutic area; and (c) marketing has significant impact on utilization.

Kang and Montoya (2014) discussed the trends in pharmaceutical innovation and the impact of competition in the marketplace. Kang and Montoya also discussed the management of the product portfolio and the product life cycle management, the product development, the market entry, the market dynamics, and the competitive environment within the industry. Kang and Montoya documented that competitive strategy determines the value of innovation, and that the competitive strategy is determined by the product portfolio selection. Kang and Montoya provided examples of the product life cycle management, discussed strategies to increase the market life of existing products, and realignments of business models to increase profitability. Kang and Montoya documented

that in order to achieve organizations' financial goals and remain competitive in the marketplace in the long-run, pharmaceutical manufacturers need to continue investing in research and development, and launch of new brands, while realigning their current business models to increase profitability, increase capacity in manufacturing, or reduce costs.

Camejo et al. (2013) examined the relationship between the pharmaceutical price regulation and industry's investment in research and development, and presented a theoretical structure of the dynamics between competition, pharmaceutical research, and cost effectiveness on lipid-lowering therapies. Camejo et al. discussed the competitive environment when a new drug enters the market, and identified two different types of competitors: (a) close substitutes from brand named drugs, and (b) generic products after patent expiration. Camejo, Miraldo, and Rutten (2017) discussed the justification of the investment in research and development using the cost effectiveness model to reflect the opportunity costs, and noted several business practices in place. Camejo et al. documented that organizational leaders may be looking into the clinical effectiveness and the costs of new technology compared to the close substitutes available in the marketplace, or other product characteristics (such as safety, tolerability, cost savings, or efficiency of application) during the decision-making process for investment in new technology or product.

Frank and Hartman (2015) discussed the competitive environment within the pharmaceutical industry and the increased competition between brand drug manufacturers and generic drug manufacturers. Frank and Hartman evaluated the impact

of generic drug launch on the product price, and documented a shift in demand to the generic, and a major decline in prices. Frank and Hartman discussed the product differentiation strategies that brand drug manufacturers are pursuing to fight competition and retain their market shares, such as product differentiation, product line extensions, or offering new treatments. Frank and Hartman documented that brand drug manufacturers compete on product attributes and invest in marketing efforts to promote those attributes rather than price. Frank and Hartman asserted that generic drug manufacturers need to monitor and understand the defensive marketing strategies that brand drug manufacturers are implementing in order to identify market opportunities and successfully launch new products.

Rusu et al. (2011) discussed the strategies that marketing leaders within the prescription brand medicines segment are implementing to fight generic competition by using patents and litigation. Rusu et al. documented that patents could be extended through effective product life cycle management that includes applying for additional patents to cover formulation, composition, indication, or modes of administration, launching generic versions of the medicines after patent expiration, etc. Chao, Hu, Zhang, and Wu (2014) discussed the strategies applied before and after patent expiration of Lipitor® (atorvastatin calcium), a brand medicine used to lower cholesterol in the blood. Chao et al. documented the following before patent expiration strategies: (a) direct to consumer advertising, (b) pricing strategy, and (c) launch of reformulations, and after expiration strategies: (a) change to over the counter, (b) launch of authorized generic, (c) rebate strategy, and (d) continuous marketing for brand.

Timing of market entry. Smith (2012) conducted case study research to examine the market access strategies in the pharmaceutical industry and medical devices, and identified the factors influencing the market access strategies. Smith argued that the market access determines the success or failure of any new pharmaceutical or medical technology to a large degree, and defined market access strategy as a pattern of resource allocation and activity decisions about what health economic value proposition to make to the market, and which audiences within the market access the decision-making process to whom to address that proposition. Smith identified the following nine differentiating areas of a market access strategy that managers need to be aware of: (a) heterogeneity within the marketing environment, (b) resource allocation choice between alternatives, (c) the offering of payer-perceived economic value to each targeted segment within the market, (d) anticipated change in the market, (e) alignment to the strengths and weaknesses of the product and organization, (f) alignment with the organization's corporate strategies, (g) alignment with the organization's marketing strategies and goals, (h) support management of the product life cycle, and (i) alignment with the organizations' financial goals.

Fatokun, Ibrahim, and Hassali (2016) conducted quantitative research to assess the factors determining the market entry of a new generic medicine following patent expiration in Malaysia. Fatokun et al. provided an overview of the pharmaceutical industry in Malaysia, the generic prescription medicines availability, and the regulatory environment, and documented the need for development and introduction of generic prescription medicines in the Malaysian market to reduce the rising pharmaceutical

expenditures, and reduce the patients' costs. Fatokun et al. identified the following factors influencing the generic prescription medicines availability: the market characteristics, the behavior of branded prescription medicine businesses, and the existence of incentives to promote development, production and marketing of generic prescription medicines. Fatokun et al. found the following: the major factor influencing entry decisions for domestic market-oriented generic prescription medicine businesses as compared with export-oriented organizations was the pre-patent expiration market value of the branded medicine, followed by patent clustering by branded prescription medicine businesses, and the earlier market entry of imported generic medicines. Fatokun et al. showed that the major factors driving decisions to develop and introduce a new generic medicine into the Malaysian pharmaceutical market were consistent with the business model of the generic pharmaceutical industry.

Stros and Lee (2015) examined how order-of-market entry affects the level of sales of prescription medicines. Stros and Lee evaluated the impact of marketing activities on pharmaceutical sales, focusing on (a) product (innovativeness, differentiation, quality, branding, and packaging), (b) price, (c) promotion (personal selling, advertising, word-of-mouth, and sampling), (d) distribution, and (e) order-of-entry effects (first entrant, early market entry, late market entry, and market share). Stros and Lee discussed the application of the product life cycle model on the management of the marketing efforts for brand and generic prescription medicines, and the competitive environment and dynamics during drug life cycle from the moment of market introduction. Stros and Lee documented that marketing-mix effectiveness varies over

time, and that organizational leaders need to tailor their marketing strategies to the market requirements.

Stros and Lee (2015) argued that early market entry strategy is characterized by relatively high advertising elasticity because of the many new customers in search of product information, while in the mature stage, many customers perform repeat purchases and have substantial experience with the product, resulting in lower information needs and increased price sensitivity. Stros and Lee documented that product design is critical determinant of the product sales for both early and late market entrants, where early market entrants are associated with innovativeness, while late market entrants are characterized by implementation of a differentiated product strategy, lower promotional costs, and lower price to gain market share. Stros and Lee recommended monitoring and allocations in marketing expenditures over time after product introductions to the market, and monitoring of the competitive environment, to achieve organizations' financial goals. Stros and Lee provided guidelines to organizational leaders regarding order-of-market entry, and recommended consideration of (a) the governmental approval status, (b) the company's and the competitors' medical drug research status and progress, and (c) the company's strategic decisions regarding market entry.

Similarly, Ridley and Régnier (2016) evaluated the impact of timing of market entry on product sales focusing on order-of-market entry, therapeutic advantage, market share, and number of competitors. Ridley and Régnier analyzed 44 drugs that were approved during 2007 and 2009. Ridley and Régnier found that launch speed and therapeutic value impact product sales. Ridley and Régnier documented that first market

entrants with high therapeutic value achieved highest sales and market shares followed by second entrants and additional followers, and that late entrants with therapeutic value higher than first entrants outperformed the competitors in terms of product sales and market shares. Alt and Helmstädter (2018) examined the timing of market entry focusing on the therapeutic advantage and found that first market entrants are not most successful in the marketplace, and that later entrant with better product attributes and therapy advantage could have better market success.

DiMasi and Chakravarthy (2016) examined the market entry of innovative drugs and the timing of patent filings. DiMasi and Chakravarthy analyzed data of drugs approved for marketing in the United States from 43 therapeutic classes during 1998 and 2008, focusing on the timing of market entry and the timing of patent filings. DiMasi and Chakravarthy documented that the second entrant entered the market 2.7 years later after the first market entrant, while other molecules were still in development phase.

Min, Kim, and Zhan (2017) examined the impact of market size on market entry. Min et al. discussed the relationship between market size the profit potential for market entrants post entry and documented that the market size does not always drive decisions on market entry. Min et al. identified market characteristics and organizational characteristics as factors influencing the decisions on market entry.

Andrade, Sermet, and Pichetti (2016) examined the market access and order of market entry of pharmaceutical organizations in complex environments. Andrade et al. focused on the main obstacles of the market access, the market access performance evaluation, and the investment during various phases of the product life cycle. Andrade et

al. provided an overview of the pharmaceutical industry, the regulatory environment, the environmental dynamics, and the challenges that business leaders within pharmaceutical organizations are facing in the marketplace. Andrade et al. found that the market access was associated with (a) pricing and reimbursement, (b) evidence of the product value, and (c) the economic and the financial returns. Andrade et al. also found that the investment in market access was highest during the earlier phases of product life cycle, such as: (a) the phase before product introduction when pricing and reimbursement options were negotiated with the national Drug Agency, (b) the phase before product life cycle when the access to formularies was managed, and (c) during commercialization. Andrade et al. noted time to market, product introduction, and market penetration were the most used criteria to evaluate the market performance, and critical to achieve sales and revenue generation.

Yu and Gupta (2014) examined the competition among generic entrants in the first three years of sales after patent expiration, focusing on the effects of timing of market entry. Yu and Gupta included the effects of detailing, distribution of free samples, prices, journal advertising, and molecule characteristics. Yu and Gupta found that generic entrants that launched products earlier achieved greater sales, market shares, and profits, compared to the entrants that launched second or third, and demonstrated that timing of market entry had a significant influence on sales, and market share.

Measuring marketing value. Liao et al. (2015) noted the primary source of competitive advantage in business-to-business relationships is through coordination of complex networks of company activities and relationships. Liao et al. documented that

the relationships among organizational performance, organizational resources, and strategies, interrelate with the external environment and influence the organizational financial success. Organizational leaders are increasingly aligning their activities around the customer (Nenonen & Storbacka, 2014). Organizational leaders need to measure the return on marketing investment on the organizational performance including value creation for customers and suppliers, brand equity and customer equity.

Kumar (2015) evaluated the investment in marketing activities as a strategic orientation and as a source of sustainable competitive advantage in changing business environments focusing on the customer. Kumar suggested managers identify and implement strategic orientations that enable the organization to sustain performance, especially in rapidly changing market conditions. Kumar discussed the evolution of marketing, and documented that investment in marketing activities is an organization's capability necessary for long-term performance, developed through superior understanding of customer needs, market actions, and competitive actions. Kumar focused on marketing effectiveness and efficiency, organization's value through customer engagements, and technological developments. Kumar found that investment in marketing activities had a positive effect on organization's performance in short-term and long-term period, and that the advantage, profit and sales generation was greater in organizations with integrated marketing.

Customer lifetime value model. Nenonen and Storbacka (2014) defined the customer lifetime value model as a measure in the customer' selection process used to identify high profit customers and to improve the customer relationships through

marketing resources allocation across marketing communication channels and customers. Nenonen and Storbacka provided evidence to support the positive relationship between the customer lifetime value model and organizational and customer value creation. In their later study, Nenonen and Storbacka (2016) examined the relationship between market action and shareholder value, and showed that marketing activities influence the organizational performance. Nenonen and Storbacka focused on the following variables: (a) marketing strategies and tactics, (b) customer impact, (c) marketing assets, (d) market impact, (e) impact of the value on the organization, (f) competition, and (g) environment. Nenonen and Storbacka documented that organizational leaders need to have both financial and nonfinancial metrics in place to measure the return on marketing investment, and to develop distinct long-term and short-term marketing goals and programs to increase the customer equity. Nenonen and Storbacka asserted organizational leaders could use the findings from the existing literature relative to the value creation as an input in creating and executing effective marketing programs through different channels of communications to further differentiate in the marketplace and increase the collaboration in relationship marketing.

Corporate reputation. Erden, Klang, Sydler, and Von Krogh (2015) examined the relationship between corporate reputation focusing on knowledge stocks and organizational performance in the pharmaceutical industry. Erden et al. asserted that corporate reputation is a belief about organizations' past and future actions that shape how stakeholders interact with them, and provides the organizations with a competitive advantage in the marketplace. Erden et al. found that the favorable reputation through

knowledge stocks increases the revenue generation, and that the benefits of knowledge stocks result from continuously filing patents. Erden et al. documented that corporate reputation is a tool to acquire and retain customers, investors and employees.

Chen et al. (2016) conducted qualitative study through interviews to explore the effects of corporate reputation on brand image strategy. Chen et al. identified these uses of corporate reputation: (a) corporate communication, used to develop relationship with stakeholders, (b) value creation, used as an intangible asset to create value in the future, and (b) strategic resources, used to influence the competition. Chen et al. asserted organizational leaders use corporate reputation to improve their brand segmentation, positioning and differentiation strategies.

Patent-based measures. Wagner and Wakerman (2016) documented that organizational leaders use patent-based indicators to measure innovation and the outcomes from the innovation, focusing on product quality, the economic importance of the treated decease and the problem it solves, and the patent protection process. Wagner and Wakerman found that the number of patent applications and product family size correlate positively with the speed of product launch, and negatively with pre-clinical trials. Wagner and Wakerman provided evidence and explained that in a situation of uncertainty during the patenting process, organizational leaders postpone their decisions regarding development products until the uncertainty is resolved and patent granted, which in turn, speeds up the process of product commercialization.

Chen et al. (2014) examined the relationship between corporate market value, and patent quality indicators, such as patent position, and technology advantage in the U.S.

pharmaceutical industry. Chen et al. found a positive relationship between market value and patents. Chen et al. showed the market value of pharmaceutical companies with high patent counts was higher than the market value of pharmaceutical companies with low patent counts. Chen et al. recommended organizational leaders should invest in technology, and increase the innovative value of their patents and their potential in order to gain competitive advantage.

Challenges in the business models and product life cycle management. Rusu et al. (2011) examined the current business models and practices of four largest pharmaceutical companies worldwide, based on revenues reported in 2010. Rusu et al. identified and discussed key areas and strategic initiatives that marketing leaders employ in business practices that define organizations' business models. The key areas of focus included: (a) offerings (for example, service model vs therapies), (b) the target markets (mass market vs niche), and (c) the organization (through making connections vs integration), while the strategic initiatives include (a) innovation path (by incorporating minimum changes in high risk, high margin model), (b) integration path (focusing on the heath care value chain model) , and (c) de-risk path (by redirecting the efforts to less regulated markets, such as consumer health markets). Rusu et al. identified the social corporate responsibility as a major challenge in the business models that organizational leaders are facing, that includes the way drugs are developed, marketed, and used (Rusu et al., 2011), and could have potential impact on the revenues. Rusu et al. recommended continuous revision of organizations' social corporate responsibility policies to meet the changing needs of the stakeholders and the marketplace.

Sabatier et al. (2012) conducted qualitative case study research through interviews to explore the impact of technological discontinuation on the business models in the pharmaceutical industry. Sabatier et al. identified the following factors that trigger disruption in business models: (a) transformations in the health care system (personalized medicine, shift from product to service logic, or nanobiotechnology), (b) introduction of new ways of collaboration (new ways to innovate, new ways to lower the costs of drugs, or new market entrants from other industries), (c) changes in current business practices (for example, emergence of innovation networks formed by small actors). Sabatier et al. documented that the patent expiry period and the introduction of low cost generic drugs are major challenges for brand drug prescription companies. Sabatier et al. documented that change in technological discontinuities drives emergence of new business models, which in turn, transforms the dominant industry logic.

Obeidat et al. (2017) conducted quantitative research through surveys to examine strategy implementation in the pharmaceutical industry in the Middle East. Obeidat documented that strategy is a tool organizational leaders use to conduct organizational operations, achieve organizational objectives, achieve position in the market, and gain competitive advantage in the marketplace. Obeidat et al. focused on the following factors affecting strategy implementation: operational planning, resource availability, people, communication, feedback, and control. Obeidat et al. found that resource availability was the most critical factor influencing successful strategy implementation.

Kang and Montoya (2014) showed that the strategic alignment between organizational strategy, product development, and financial strategies has a significant

impact on profitability. Obeidat et al. (2017) suggested that the organizational leaders should align strategic functional level planning with business level planning within an organization. Similarly, Narayana, Prati, and Vrat (2014) documented that organizational leaders need to align and integrate the technical information, materials, finances, and order information to sustain in the marketplace success in the pharmaceutical business.

Prajapati et al. (2013) identified and discussed various challenges in different phases of a product life cycle: (a) in product development phase: identification of high-quality drugs, use of existing research, management of patent applications, and compilation of clinical trial results; (b) in approval phase: collecting and archiving documentation for regulatory approval, preparation for technology transfer, and management of agreements submittal and approval; (c) in product introduction phase: coordination of marketing, sales, and production to successfully launch the product on time, and preparation of new product supply; (d) in commercialization and quality management phase: management of product supply, labeling, and packaging, documentation compliance, and supplier audits; and (e) in product decline phase: product line extensions and generic competition entry. Prajapati et al. documented opportunities and key areas of focus in each phase of product life cycle to maximize the return of investment: the development phase is associated with opportunities for product enhancements through dosage form variations or design of technology, the product introduction phase is associated with opportunities for new product development and introduction processes, the commercialization and quality management phase is associated with opportunities for line extensions (new uses or indications) and

improvements in manufacturing processes, and the decline phase is associated with opportunities for patent extensions, pricing strategies, or switching products from prescription to over-the-counter medications. Prajapati et al. asserted that development of a successful product life cycle management requires coordination of information from multiple sources, such as product information, patent knowledge, competition, manufacturing, and sales and distribution.

Patent challenges. Song and Han (2016) examined current business models of organizations within the pharmaceutical industry and challenges associated with loss of patent protection. Song and Han documented that the current business models of innovator organizations are designed to lose core business and product portfolio every 10-12 years after market entry, which could have a negative impact on the revenue sales and market performance, causing organizational leaders to look for new revenue streams, and mergers and acquisitions. Song and Han published drugs with more than a $100 billion in sales will lose patent protection in the coming years, causing significant revenue losses and market position. Song and Han discussed the importance of development and implementation of different marketing strategies during various stages of the product life cycle to maximize the product lifetime value.

Song and Han (2016) identified these strategic design possibilities during prior to loss of patent protection stage: the use of patent settlement agreements to prevent competition, innovation through product modifications, out-licensing to exploit the market conditions, and through strategic alliances with generic drug manufacturers to diversify the portfolio or enter a new generic market. Song and Haan documented the

following strategies during loss of patent protection stage: patent term restorations or clinical trials to prevent competition, innovation through introduction of new indications or new business models, continuation of the existing product lines and brand image to exploit market conditions, and launch of authorized generics to diversify the portfolio or enter a new generic market. Song and Haan documented the following strategies during post loss of patent protection stage: application for patent extensions to prevent competition, innovation through introduction of new indications, implementation of new business models, or switch of prescription to over-the-counter medicines, differentiation of the existing product line through brand advertising to exploit market conditions, and launch of secondary brands or authorized generics to diversify the portfolio or enter a new generic market.

Similarly, Kakkar (2015) discussed strategies to mitigate the loss of revenues after patent expiry, such as launch of authorized generics, introduction of new indications and formulations, or price reductions. Kakkar identified the following factors that affect the strategy choices: the return on investment, product opportunities, and the competitive landscape. Kakkar documented the importance of thorough product life cycle management to extend the commercial life of a product, retain market position, and drive growth.

Grabowski, DiMasi, and Long (2015) examined the causes and effects of patent challenges and their effect on the market life of drugs. Grabowski et al. discussed the regulatory framework within the industry, the rapidly changing environment and the industry trends, the increased competition, and the high development costs. Grabowski et

al. found that patent challenges are more common for higher revenue drugs. Grabowski et al. documented that organizational leaders use patenting strategies, new formulations, and other product line extensions to extend the length of market exclusivity for therapies facing generic drug competition.

Similarly, Grabowski et al. (2014) examined the market exclusivity of new molecular entities, the generic drug market penetration, and the patent challenges under Paragraph IV of the Waxman Hatch act. Grabowski et al. investigated the impact of Paragraph IV decisions on the brand drug sales, and documented that Paragraph IV decisions determine whether a generic drug can enter the market prior to patent expiry date. Grabowski et al. discussed the regulatory environment in the United States, the Waxman Hatch Act and the Paragraph IV statute, the industry trends, and the barriers to entry for generic competitors.

In a later study, Grabowski et al., (2016) found that the brand drugs rapidly lost sales after generic entry, and at least 94% of the new molecular entities accounting for $250 million in sales faced at least one Paragraph IV patent challenge from a generic drug manufacturer in 2013-2014. Grabowski et al. documented an increase in frequency of Paragraph IV patent challenges, earlier occurrences of patent challenges during the brand drug life cycle, and intensified generic drug market erosion over the last ten years. Grabowski et al. emphasized the need for strategies for both generic and brand name drugs.

Branstetter, Chatterjee, and Higgins (2016) discussed the regulatory environment in the United States, the Waxman Hatch Act, and the Paragraph certification options for

generic manufacturers. Branstetter et al. explained the filing for Paragraph certifications and documented that Paragraph IV provides an opportunity for market exclusivity for 180 days to generic manufacturers if their Abbreviated New Drug Applications (ANDAs) are FDA approved. Branstetter et al. documented that rapid decline in price and intensified competition from generic entries after the 180 day period, followed by rapid decline in brand sales and revenues, and loss of market share. Using data in period 2000-2008 for the hypertension market in the United States, Branstetter et al. documented that revenues of a branded product declined on an average 56% during the first year after Paragraph IV entry, and 89%. Branstetter et al. asserted reformulations (for example, extended release, or once per day therapy versions) could be effective tool for brand manufacturers to fight competition from generic entry following Paragraph IV approval.

Managerial issues. Narayana et al. (2014) examined the managerial issues in the pharmaceutical industry globally, focusing on the non-behavioral issues in pricing, medical expenses, supply chain and operations and manufacturing, and behavioral issues on consumer-physician's level. Narayana et al. discussed current trends in the pharmaceutical industry, and described the pharmaceutical industry as the complex of processes, operations, and organizations involved in the discovery, development, and manufacture of drugs and medications. Narayana et al. identified the following focus areas: improvement of efficiency and profitability, management of R&D through strategic relationships, improvement of technological competences, and effective management of business processes and knowledge. Narayana et al. emphasized the need

for integrated approach from drug discovery through commercialization to final consumption to improve strategic decision making.

Similarly, Shabaninejad, Mehralian, Rashidian, Baratimarnani, and Rasekh (2014) assessed managerial issues in the pharmaceutical industry focusing on key factors that influence the competitiveness in the marketplace. Shabaninejad et al. documented that the pharmaceutical industry is characterized with intensified competition, strict regulations, long drug development processes, high levels of uncertainty in drug development processes, and high costs for research and development. Shabaninejad et al. identified the following factors that affect competitiveness: human capital, organizational practices, strategy and effectiveness, capability to innovate, market infrastructure, and the pharmaceutical regulation. Shabaninejad et al. emphasized the need for organizational leaders to recognize the factors affecting the current business models and competitiveness in the marketplace and recommended to include them in the decision-making processes and strategy planning.

Drug shortages. Parsons et al. (2016) addressed the current trend of shortages of generic drugs where multiple therapeutic markets are affected as a critical challenge for the prescription drugs market. Parsons et al. discussed the multifactorial origins for short supply in the marketplace, the association between the number of suppliers and drug shortages, the impact on the patients, the regulatory environment in the United States, and the relationship among business practices, revenue generation, and the manufacture and marketing of prescription drugs, focusing on cancer drugs. Parsons et al. documented that drugs with a generic equivalent on the market were more likely to report drug shortages.

Parsons et al. emphasized the need of changes in the regulatory requirements, policies, and processes specific to generic drugs market segment, and the need for changes in organizations' business models to meet the end customer needs.

Transition and Summary

The purpose of this qualitative case study was to explore the perspectives of business professionals, managers, involved in the decision-making process for development and implementation of marketing strategies on the marketing efforts during the management of product life cycle. Data were collected through semistructured interviews (face-to-face interviews and telephone interviews) and were analyzed using interpretative analysis. The central question in the study was: How do marketing managers within pharmaceutical companies pursue marketing during various stages of product life cycle? I examined the problem through the general systems theory and the evolutionary systems theory, focusing on the ongoing interactions between the complex systems (such as the organization, or the product life cycle) and its likewise complex operating environment.

In Section 1 of the study, I provided the research problem, the purpose statement, the research question, the nature of the study, the significance of the study, the assumptions, limitations and delimitations, the conceptual framework, and the literature review. The literature review contained concise summaries of the literature in the area of marketing branded and generic prescription medicines, product life cycle management, market trends, and challenges of pharmaceutical organizations. In literature review,

different points of view were compared and contrasted, and the relationship of the study to previous research and findings was explained (Walden University, 2018).

Section 2 of the study covered the details of the project, such as the role of the researcher, the participants in the study, the population and sampling, the ethical research, the research method and the research design, the data collection instruments, data analysis, and the data validation techniques. Section 3 of the study covered the presentation of findings, the application to professional practice, implications to social change, the recommendations for action and further study, and the reflections of my experience.

Section 2: The Project

This section included a description of the role of the researcher, the participants in the study, population and sampling, ethical research, the research method and design, the data collection instruments and technique, the data organization technique, data analysis, and data reliability and validity.

Purpose Statement

The purpose of this qualitative case study was to explore the marketing efforts during various stages of product life cycle, determine the best practices to pursue marketing strategies, identify the factors that are strongly associated with the revenue generation and market shares, and the challenges associated with marketing strategy implementation in the pharmaceutical industry. I collected data through in-depth, semistructured interviews (face-to-face interviews and telephone interviews), and analyzed the data. A qualitative case study description of the participants' experiences and views was developed by asking the participants to share their personal lived experiences related to marketing strategy development and implementation. The scope of the study was in central Ohio.

Role of the Researcher

The role of the researcher in qualitative case study research was to gain deep understanding of the topic under study through the participants' views and experiences (Fusch & Ness, 2015). Fusch and Ness (2015), and Haahr, Norlyk, and Hall (2014) documented that the researcher is a key instrument to collect data who interacts with the participants to obtain rich data regarding their experiences relative to the problem under

investigation. Cridland, Jones, Caputi, and Magee (2015) documented that the researcher facilitates the flow of communication, identifies cues, and selects the participants in the study. Cridland et al., and Darawsheh (2014) documented that the role of the researcher is to collect, organize, and analyze the data to gain understanding of the topic under study. Collins and Cooper (2014) and Roulston and Shelton (2015) also documented that the researchers are the main instruments in obtaining data from the participants in the study and added instrumentation rigor and bias management are major challenges that researchers face in conducting qualitative research through interviewing as a data generation method. However, the researcher as instrument might affect the trustworthiness and the quality of the research study (Collins & Cooper, 2014; Elo et al., 2014). My role in the data collection and analysis was to serve as a key instrument to collect, organize, and analyze data to capture the meaning of business practices in marketing of prescription medicines within the pharmaceutical industry as described by the participants.

I used multiple methods to collect data, including interviews with the participants and a review of secondary data sources. I used semistructured open-ended interview questions as shown in Appendix B during the interview process. Yin (2017) documented that the use of open-ended questions in qualitative studies can provide flexibility and clarity and encourage complete answers. The review of secondary data sources included a review of company documents available on public websites and government databases. The documentation included a review of annual reports, press releases, and marketing materials related to the implemented marketing strategies, corporate business strategies,

and the product life cycle management and their impact on the market performance in terms of sales and innovation. The review of archival records located on government websites included a review of data on industry developments, industry news, information about drugs, etc.

The *Belmont Report* contains guidelines and basic ethical principles to protect human subjects and requires researchers to (a) treat all persons with respect, (b) treat all persons in an ethical manner, and (c) treat all persons with justice (Office of National Research Protection, 2018). I adhered to the guidelines established in the *Belmont Report*. I treated each participant in an ethical manner and with respect while I adhered to justice during the research.

Following the principles of case study research design, my role was to explore the participants' views and experiences by attempting to understand and interpret their perspectives on marketing strategy during various stages of product life cycle of prescription medicines. Darawsheh (2014) documented that the interpretivist inquiry allows the researcher to view the topic under investigation holistically, get close to the participants, and interpret their views and experiences of the research problem as appropriate. In data collection, I engaged in active interaction with the participants during the interviewing process. In data analysis, I interacted with the participants to obtain their feedback on my interpretation of their experiences.

De Massis and Kotlar (2014) addressed the importance of recognizing and controlling for bias during the interviewing and the research process. I recognized the active role in data collection and interpretation might result in potential bias. The

relationship between the researcher and the participants during the data collection process might raise ethical issues that needed to be addressed. I adhered to the ethical standards throughout the entire research process by following the Walden University's procedures and policies. I attempted to maintain objectivity by monitoring my subjectivity during and the research process and maintain self-awareness.

To maintain confidentiality of the participants in the study, I followed the following steps: (a) the participants' identities were known only to me; (b) the electronic communications were stored in an email account accessible only by me; (c) the recordings and the written communications were stored in a locked cabinet accessible only by me; and (d) the computer used to store, organize, and analyze the data collected was accessed only by me. In facilitating the interviews, I followed the interview protocol (see Appendix C) to guide me through the interview process and remain within the bounds of the interview process. I introduced myself, notified the participants that I will be taking notes, and that the conversations will be recorded during the interviews. I then verbally went through the informed consent form at the beginning of each interview. I received the participants' consent via emailing prior to scheduling the interviews with the participants.

Participants

The participants in the study were business professionals, managers, who have experience with development and implementation of marketing strategies, working in an organization that has been in business for more than 10 years within the pharmaceutical industry in central Ohio. The participants were middle managers who held positions as

product managers, brand managers, marketing managers, directors within marketing and sales, sales managers, or pharmaceutical marketing consultants. Quy Nguyen, Corley, and Kraatz (2014) documented that middle managers usually hold positions two levels below the CEO of an organization. Mullins et al. (2010) documented that the title *marketing manager* is broad, and includes many people with numerous titles, who are directly involved with marketing activities in the organization, and could be located in marketing or sales departments, other departments within the organization, or contracted out to organizational partners outside the organization. Wirtz, Tuzovic, and Kuppelwieser (2014) documented that the nature of the marketing managers' role and responsibilities varies depending on the organizational structure within an organization, and the marketing processes. The primary responsibilities of marketing managers include developing and implementing strategic marketing programs and action plans (Malshe, Johnson, & Viio, 2017), pertaining to product development, pricing, promotion, and distribution (Grimmer, Kilburn, & Miles, 2016). Marketing managers are involved in market positioning, marketing research, social media, competitive intelligence, sales, and public relations (Wirtz et al., 2014). Xu, Frankwick, and Ramirez (2016) documented that marketing managers lack the authority to perform all the activities specified in the marketing plans, make all the decisions relative to the marketing strategy formulation and implementation, and the analysis.

Xu et al. (2016) documented that product managers are involved primarily in new product development, and management of existing products focusing on activities that include underlying product related factors that determine failure or success of new or

existing products. Xu et al. noted that product managers are directly involved into the formulation and implementation of a marketing strategy. Malshe et al. (2017) documented that product managers develop the campaign plans for a product in collaboration with the sales management, and that the product market position, the market segmentation, and the optimal sales goals need to be defined in strong collaboration among product management, sales management, marketing management, and product development. Mulki, Jaramillo, Goad, and Pesquera (2015) documented that the primary roles of the sales people and account managers include working proactively with customers and proposing value, to generate sales opportunities for the products and services offered. Malshe et al. (2017) documented that the sales people are involved in the decision-making process of formulating marketing programs, and their responsibilities include implementation of the marketing strategy. Singh and Jayanti (2013) documented that consultants focus primarily on understanding and resolving customer problems, brand positioning, and commercialization of new medicines, and are directly involved in the marketing strategy formulation activities early in the process prior to a product launch decision.

The inclusion of managers holding different job titles allowed exploration of the topic from multiple perspectives. Morley, Scullion, Collings, and Schuler, (2015) documented that the multiactor approach is more effective in understanding the different views of business practices, and capturing complexity, compared to a single-source approach. Story, Raddats, Burton, Zolkiewski, and Baines (2016) demonstrated that researchers could use a multiactor approach to explore the topic under study when data

collected from the participants need to cover actual processes, social interactions, and activities, including the causes and the consequences of the activities, resulting from the participants' actions. Reypens, Lievens, and Blazevic (2016) discussed the importance of capturing the multifaceted accounts, and the application of the multiactor approach to explain the marketing activities and documented that the actions of the individuals holding different job positions comprise the network level processes and the chain of focal events.

Gill (2014) documented that one of the challenges in qualitative studies is selection of the participants relative to their experiences, and suggested selecting participants who have experience with the topic under study rather than selecting participants who have perspectives on the topic. Robinson (2014) presented a four point approach to sampling in qualitative research: (a) define a sample universe by identifying and applying inclusion and exclusion criteria, (b) select a sample size, (c) select a sample strategy by purposeful sampling to specify categories of persons to be included in the sample, and (d) source the sample through recruitment of participants from the target population. I used criterion sampling strategy to establish the criteria, and purposeful sampling strategy to learn more about the topic under study following the model described by Robinson (2014). Gould et al. (2014) documented that purposeful sampling strategy could be used to identify the individuals involved in development and implementation of marketing strategies. Purposeful sampling strategy is used to identify participants that will be able to address and answer a research question (Cleary et al., 2014; Elo et al., 2014; Reypens et al., 2016; Robinson, 2014). Criterion sampling strategy

is used to select participants in the study who meet predetermined criteria (Elo et al., 2014; Palinkas, Horwitz, Green, Wisdom, Duan, and Hoagwood, 2015; Robinson, 2014).

In participants' recruitment, I adhered to the Walden University Institution Review Board's (IRB) guidelines and the Belmont Report. I carefully selected the participants who have direct experience with the topic under study. I identified the pharmaceutical company and the molecules using the FDA orange book and identified and obtained contact information on qualified potential participants within the organization selected on LinkedIn. I selected an online form of recruitment to reach out and recruit participants geographically dispersed, who reside in the United States. Shapka, Domene, Khan, and Yang (2016) documented that online forms of requirement of participants in research studies suit well when participants are geographically dispersed. The decision makers on marketing strategies in the pharmaceutical industry reside in various geographic locations (McNally & Schmidt, 2011).

I reached out and contacted the individuals through emails asking for participation in the study. I selected five individuals for initial interviewing. The five individuals were provided with email invitation to participants (see Appendix A), and the informed consent form. The email invitation to participants and the informed consent form contained information about the study, the methodology employed, the nature of the study, the procedure for data collection, potential risks and benefits, and assurance of confidentiality. I included information about the approximate time for interview, and the key areas of focus. In online forms of recruitment of participants, researchers could send

introductory email to the participants explaining the objective of the study, the areas of focus, and guidelines (Pearce, Thøgersen-Ntoumani, & Duda, 2014).

I asked the potential participants to indicate their consent by replying to the invitation email with the words, "I consent." I provided information in the information consent form about the ethical protection, such as voluntary participation, non-exposure to the participants' identities, authorized person will only access the data collected, and that the data will be stored in a locked cabinet for period of 5 years, as per the Walden University DBA requirements. Three individuals responded to the invitation email and consented to participate in the study by replying with the words "I consent." I conducted a total of three interviews (two face-to-face interviews and one telephone interview). I evaluated for eligibility those who agreed to participate in the study. I distributed the questions prior to the interview, so that the participants become familiar with the subject and topic and know what to expect.

I conducted member checking with the participants in the study in follow-up interviews after I completed each interview with each participant. Birt, Scott, Cavers, Campbell, and Walter (2016); Harvey (2015); Impellizzeri, Savinsky, King, and Leitch-Alford (2017); and Thomas (2017) documented that researchers use member checking to assess the accuracy of the reported information. Harvey explained the process of member checking, and noted during member checking, the researcher reaches out to the persons who provided information during the interviews, provides the study participants with interpretative summaries of the answers of the interview questions, and asks them to comment on the accuracy of the reported information. Birt et al. (2016) discussed the

different methods of member checking: (a) transcript review by returning the interview transcripts transcribed verbatim (appropriate to check factual information), (b) member check interview using the transcript (allows the researcher to confirm, validate, and modify the interview text), (c) member check interview using analyses of single participant's data (each participant receives researcher's interpretation of the interviews with the intent to verify, confirm, or modify the interpretation), (d) member check focus group, and (e) member checking using synthetized analyzed data, where the researcher returns synthetized themes to the participants to validate the findings.

Similarly, Thomas (2017) and Varpio, Ajjawi, Monrouxe, O'Brien, and Rees (2017) discussed ways to conduct member checking: through interview transcript transcribed verbatim or interpretative summary of the interview information. Varpio et al. noted that member checking could be conducted at two stages of the study to validate the researcher's interpretation of the data: after the completion of the initial interviews with the participants to validate the interpretation of the participants' opinions, and after the initial or final data analysis, to validate the interpretation of the findings. Varpio et al. also discussed the methodological challenges associated with the member checking process, and documented: (a) participants' low response rate to validate interview transcripts transcribed verbatim in transcript review, (b) participants' honest feedback during follow-up interviews due to the participants' perception of the researcher, and (c) the time difference between data collection and data analysis during which the participants may change their perspectives on the research topic.

I conducted member checking follow-up interviews with the participants in the study using analyses of single participant's data after the completion of the interviews. During member checking, each participant received my interpretation of the participant's responses in the form of a synopsis of the answers for each interview question in a follow-up interview to confirm the accuracy of the interpretation. The interpretations included journal notes taken during the interviews about verbal cues (such as changes in voice, or intonations) and nonverbal cues (such as body language). Thomas (2017) pointed out the interpretative nature of member checking interviews and noted in member checking interviews participants could reflect on their thoughts and behaviors.

Research Method and Design

The research method and design included a description of the method and design used in the study, and a justification for using the method and design in the study. The research method and design derived logically from the applied business problem statement.

Research Method

Researchers use qualitative and quantitative research methodologies, and mixed methods to explore, describe and understand the socially constructed experiences depending on the nature of the research question and the ontology (Venkatesh, Brown, & Sullivan, 2016). I used qualitative research method by conducting semistructured, in-depth interviews to explore and understand the views and experiences of business professionals involved in marketing strategies development and implementation due to

the exploratory nature of the study. I selected qualitative research method based on the nature of the research question.

Marketing strategy implementation is a social construction of experiences. Cocks (2014) documented that the process of strategy implementation involves complex interactions among individuals within an organization. Gill (2014) documented that construct approaches are ontologically consistent with the qualitative research methods and focus on the interpretation of the meanings of others. Interpretative researchers understand that research is an interactive process shaped by the gender, ethnicity, social class, personal history, beliefs and attitudes, or race of the participants involved in the study, and researcher (Denzin, 2017; Darawsheh, 2014). The concept of marketing strategy development and implementation during various product life cycles has different meanings among business practitioners in the pharmaceutical industry. Qualitative research method is appropriate method to help explore the ways in which a topic under investigation may be understood (Tight, 2016). I explored the views and experiences of business professionals involved in marketing strategies development and implementation to better understand the topic under study.

Hlady-Rispal and Jouison-Laffitte (2014) documented that researchers use qualitative research method to explore and understand the meaning that individuals or groups ascribe to a specific problem, and generate knowledge that otherwise cannot be obtained by using quantitative research. Quantitative research method is appropriate to investigate relationships among components of a topic, qualitative research method is employed to explore and understand the topic under study through interpretation, while

the use of mixed methods reflects an attempt to provide an in-depth understanding of the topic under study (Flick, 2017).

The ontological position of the researcher relates to the nature of reality (Tsang, 2014). I was influenced by the social constructivist worldview view as a philosophical worldview as described by Alvarez, Barney, McBride, and Wuebker (2014), where the reality and meaning are socially constructed, and the knowledge is created through social interactions within a group. Tsang (2014) noted that researchers, drawn from the interpretative research method selected and the constructivism as an ontological position, assume that the meaning is embedded in the participants' lived experiences and the meaning is mediated through the researcher's own perceptions.

Research Design

Yin (2017) and Cronin (2014) documented that case study research design is appropriate when the unit of analysis is organizations or relationships that are difficult to access, and have a complex structure. Case study research design is well suited when researchers attempt to explore and describe business practices (Anderson, Leahy, DelValle, Sherman, & Tansey, 2014; Govindan & Fattahi, 2017; Möller & Parvinen, 2015; Sabatier et al., 2012). I selected a case study research design within the qualitative research methodology.

Yin (2017) documented that case study research can include a single case study or multiple case studies. Fiat, Cook, Zhang, Renshaw, DeCano, and Merrick (2017) and Govindan and Fattahi (2017) documented that single case study research design provides a rigorous approach for achieving credibility, and documenting and advancing effective

business practices, or behavior analysis. Single case studies provide an opportunity to researchers to capture the context in which the topic under study occurs in more detail, and provide in-depth, rich data, and details of evidence (Brossart, Vannest, Davis, & Patience, 2014; Mariotto, Zanni, & Moraes, 2014; Yin, 2012). Multiple case studies are appropriate when researchers attempt to validate the findings from a single case study externally, through comparisons of cases (Anderson et al., 2014; Ketokivi & Choi, 2014; Yin, 2013; Yin, 2017). In this study, a single case study approach was selected within the case study research design over multiple case studies.

A qualitative case study is an in-depth exploration of the topic under study using multiple data sources that allows multiple perspectives of the complexity of the topic in a real life context to be revealed (Hyett et al., 2014; Morse, 2015a; Wiggins et al., 2014; Yin, 2017). In qualitative case study research design, the participants in the study describe their own lived experiences (Khankeh et al., 2015), providing insights into the nature of the topic under study (Cronin, 2014). Mariotto et al. (2014) documented that researchers who employ qualitative case study research design are concerned with understanding social constructivism from the perspectives of the participants involved in the study. Researchers employ qualitative research methodology to explore and interpret the meaning of the topic under study through the participants' view and experiences, and discover new insights (Hlady-Rispal & Jouison-Laffitte, 2014). Qualitative case study research was appropriate research design. Other qualitative research designs, phenomenological, ethnography, narrative research, or grounded theory, were not selected because the goal of the doctoral study is to construct the meaning of the topic

under study using variety of data sources that will ensure exploring the topic through multiple perspectives regarding marketing solutions. Yin (2017) documented that the essence of a case study is to throw light on decisions: why they were taken, how they were implemented, and with what result. The goal of this qualitative case study was to illuminate decisions regarding marketing strategies focusing on why these decisions were taken, how were the decisions implemented, and with what result.

In qualitative case study research, data are collected through semistructured, in-depth interviews that have the potential to produce rich descriptions by the participants involved in the study (Cronin, 2014). Intersubjectivity in generating knowledge about the topic under study exists. Alvarez et al. (2014) noted that the knowledge and understanding of the topic under study is generated through social interaction between the researcher and the participants in the study through interviews.

Researchers achieve data saturation at the point when they generate no new data in data collection (Ando, Cousins, & Young, 2014; Marshall, Cardon, Poddar, & Fontenot, 2013; Morse, 2015b; Varpio et al., 2017). Ando et al. (2014), Elo et al. (2014); and Harvey (2015) documented that interviews continue until data saturation is achieved. I interviewed three individuals, managers, followed by member checking follow-up interviews. If data saturation was not achieved by the third participant, the interviews would have continued until saturation was achieved.

Population and Sampling

Population. The general population in this study was business professionals on a management level who have experience working in organizations within the

pharmaceutical industry in the United States. In 2013, the population in this study consisted of 1,380 marketing managers and 930 sales managers employed in organizations of all sizes within the pharmaceutical and medicine manufacturing industry segment, in metropolitan and nonmetropolitan areas in every State and the District of Columbia for a population size of 2,310 (United States Department of Labor, 2018). The specific population was three to five business professionals on a management level, who were involved in decision-making processes, and developed and implemented marketing strategies, and employed in the same organization within marketing department in central Ohio for more than five years.

Sampling. I used a purposeful sampling strategy (Elo et al., 2014), which involved choosing the participants to understand the topic under study. Reypens et al. (2016) and Palinkas et al. (2015) documented that purposeful sampling is used to identify participants who are able to provide rich data to answer a research question. Hogle and Moberg (2014) documented that purposeful sampling is used in qualitative research to select information-rich cases relative to specific topic area. Elo et al. (2014) documented that in a situation when researchers are looking for information-rich cases, the purposeful sampling could be employed to develop a comprehensive understanding about the topic or the problem being studied. Purposeful sampling was in alignment with my research problem under study because the objective was to identify participants who possessed in-depth knowledge in the topic under study, and were able to provide rich data in their responses.

Elo et al. (2014) documented that qualitative researchers use this sampling strategy to construct samples of participants who meet predetermined criteria. Karatas and Oral (2015), and Yüksel and Yıldırım (2015) documented that criterion sampling is used to select participants who meet predetermined criteria. Yüksel and Yıldırım noted in criterion sampling, researchers specify the criteria for all participants in order to select participants with shared experiences. I used criterion sampling as a specific sampling strategy because it involved reviewing and studying all cases that meet some predetermined criterion of importance. This criterion sampling strategy was in alignment with the design and was appropriate sampling strategy for my research inquiry because all participants in the study must meet specific predetermined criteria.

Inclusion Criteria. The inclusion criteria for choosing the participants (three initial interviews and member checking follow-up interviews) included voluntary participation in the study, extensive knowledge of marketing strategy development and implementation in the pharmaceutical industry, and the participants' willingness to share the lived experiences about effective marketing strategies during various stages of product life cycle. Only managers who had extensive, in-depth knowledge about the problem under study were included in the study. I excluded participants who do not meet the inclusion criteria.

Justification for the Number of Participants. Differences in opinions among researchers about the sample size in qualitative research exist. Malterud, Siersma, and Guassora (2016) and Walden University (2018) did not document a minimum, maximum, or optimal number of participants for qualitative case studies. Marshall et al. (2013) and

Robinson (2014) documented that the requirements for a sample size in qualitative research are not set. Similarly, Cleary et al. (2014) and Marquis et al. (2014) did not find standard tests for estimating adequate sample size for reaching saturation. Gill (2014) documented that sample sizes in qualitative research should range between five and six participants. When selecting a sample size in a qualitative case study, researchers need to make sure the sample size is sufficient to provide in-depth information about the problem under study (Cleary et al., 2014; Moustakas, 1994), use multiple data sources (Hyett et al., 2014; Tsang, 2014), demonstrate rigor (Fusch & Ness, 2015), and ensure data saturation (Ando et al., 2014; Morse, 2015b). Similarly, Malterud et al. (2016) recommended researchers to consider the purpose of the study, and ensure data saturation and redundancy in the emerging themes when determining sample sizes in qualitative studies. The sample size in qualitative research studies is justified by interviewing a small number of participants in the study until data saturation is achieved (Ando et al., 2014; Palinkas et al., 2015; Roy, Zvonkovic, Goldberg, Sharp, & LaRossa, 2015). The sample size of three to five managers involved in the decision-making process regarding marketing strategies in the pharmaceutical industry was in alignment with Walden University's DBA recommendation relative to sample size in qualitative research, aligned with the goals of the study, and was sufficient to answer the research question.

Marshall et al. (2013) documented that researchers could start assessing the data saturation after the first interview. I started assessing the data saturation after the first member checking follow-up interview with the participants in the study. The data saturation is determined and reached when no new additional information is obtained

(Marshall et al., 2013; Morse, 2015b; Nelson, 2016; Varpio et al., 2017), the linking of the concepts of the member checking follow-up interviews and the initial interviews reveal no additional categories (Harvey, 2015), and no more emergent patterns in the data are identified (Ando et al., 2014; Roy et al., 2015; Vaprio et al., 2017). In this study, the data saturation was determined and reached when no new additional information was obtained from the interviews and the member checking follow-up interviews, and no more emergent patterns in the data were identified. Data saturation was achieved by the third participant in the study. The interviews were culminated at the point when data saturation was achieved, and there was no new information obtained from the three consecutive research participants in the study. Since data saturation was achieved by the third participant in the study, I stopped collecting data and did not recruit additional participants in the study. If data saturation was not achieved by the third participant in the study, I would have continued collecting data through interviewing and recruiting participants in the study until no new information were generated. Marshall et al. (2013) and Morse (2015b) documented that researchers should continue collecting data through interviews until no new data are generated.

Criteria for Selecting Participants. The population selected for the study was appropriate because large number of managers from different pharmaceutical companies or within one pharmaceutical company was located in different areas throughout the United States. I identified the organization using FDA Orange Book. I obtained contact information of the participants through LinkedIn, which is the professional social network. LinkedIn had 433 million members by the end of April 2016, out of which

29.6% were from the United States (LinkedIn, 2018). I contacted people through emails to recruit participants within the organization identified.

Ethical Research

Ethical implications might occur when research involves human participants (Haahr et al., 2014; Lewis, 2015; Roberts, 2015). All research aspects need to be disclosed to the participants in the study to ensure ethical research (Brewis, 2014; Cridland et al., 2015). Roberts (2015) and Yin (2012) also suggested creation of an ethical framework by disclosing all research aspects to the participants in the study, to allow for ethical research. I followed the protocols of the *Belmont Report* (Office of National Research Protection, 2018) to protect the confidentiality of the participants and treat the participants in an ethical manner.

I began data collection after obtaining permission from the Walden University IRB. The Institutional Review Board granted a permission to conduct the study and offered an approval number in order to ensure ethical research in this qualitative study. My IRB approval number is 09-20-17-0351746. The IRB form was electronically submitted and included the following information: (a) a description of the research study, (b) data confidentiality and integrity, (c) data collection instruments, (d) description of the participants in the study, (e) audience of the study, (f) potential risks and benefits, and (g) information on obtaining informed consent from participants.

The access to the general population and the potential participants in the study was public (the individuals' contact information was listed on LinkedIn). The interviews

with the participants took place outside workplaces in non-working hours for the participants. Gaining access to the population was possible.

Brewis (2014) documented that informed consent is required to ensure ethical research, when human participants are involved, that includes information about the recruitment of the participants, voluntariness, risks and benefits of the research for the participants, and handling and confidentiality of personal data. Cridland et al. (2015) also documented the importance of addressing potential risks to participants through establishing ethical framework by obtaining informed consent, protecting the participants' privacy, and ensuring confidentiality. I used informed consent form to manage potential ethical concerns that might occur during the interview process.

The informed consent was included in the email invitation (see Appendix A). Each contacted individual had an opportunity to review the informed consent prior to prior to making a decision whether or not to take part in my study, before replying to the email with a name and contact information. The contacted individuals had an opportunity to not respond at all, or respond as volunteers. The volunteers who expressed interest to participate in the study consented to participate by emailing me the words "I consent." All participants indicated their consent by emailing me the words "I consent." I scheduled the interviews with the participants after I received the emails with the consent.

I verbally went through the informed consent form at the beginning of each interview to ensure that participants have a full understanding of their part in the study, including withdrawal without penalty, and how to withdraw from the study (Walden University, 2018). If any issues occurred during the interview process, I would have had

in-depth conversation with the participant in the study to clarify information, and if needed, refer to proper Walden university representatives for further clarification. I will share a summary of the findings with the participants in the study after I obtain study approval.

The informed consent form contained information about the methodology, data collection instrument and tools, the focus areas of discussion, the nature of the study, the potential risks and benefits from the study, the audience in the study. To ensure compliance with ethical research, I included information about the, voluntary participation in the study, and the right to withdraw at any time, protection of identity, and that the participants' names or any other names including organizations that they mention during the interview will not be revealed. Haahr et al. (2014), Jamal et al. (2014), and Roberts (2015) documented the importance of protection of participants' identity and confidentiality. I included information about the compensation and incentives stating that no payments, compensation, or other gifts will be provided for the interview participation. I also included information about data storage, stating that the data will be kept confidential in a locked cabinet for period of 5 years and then destroyed by shredding following the model described by Faulds et al. (2016), and only I will have access to the data.

Data Collection Instruments

I collected data from multiple data sources to address the research question. Data collected included data from participants' responses to open-ended interview questions, the literature, and a review of secondary data sources. The secondary data sources

included company documents located on public websites, news articles, press releases, marketing materials located on public websites, and government databases. Yin (2017) documented that researchers should use minimum of two sources of data in a case study. Walden University (2018) also required the use of minimum of two data collection methods in a case study. De Massis and Kotlar (2014) asserted case studies should have data collected by multiple means, such as interviews, direct observations, documentation, historical records, and surveys. De Massis and Kotlar explained the use of multiple data collection methods adds to the understanding of the topic under study, strengthens the findings, and enhances the data credibility. The use of multiple data sources in this study was in alignment with the Walden University's DBA policy relative to the use of minimum of two data collection methods.

I was the primary data collection instrument for this study. I collected the qualitative data from the participants' responses to interview questions. Using the criterion sampling strategy, I obtained the data from participants who meet the inclusion criteria. I discussed the confidentiality and ethical issues with the participants before the interviews, I transcribed the interviews after the completion and I de-identified the data collected through interviews. I asked each participant in the study the same open-ended questions to describe their lived experiences on marketing practices during various stages of product life cycle. Each participant was able to expand on the interview questions to describe adequately these experiences. The participants were able to skip a question if they do not want to respond. Smith and Osborn (2014) addressed the flexibility in conducting interviews, and documented that every question of the interview questions

does not have to be asked and that the interview does not have to follow the sequence of the schedule.

In this study, I developed the interview questions. The interview questions were open-ended questions designed to address the research question under study. The interview questions can be found in Appendix B. The interview focused on the following areas: (a) the marketing strategy efforts during various stages of product life cycle, (b) the factors associated with revenue generation, and market share, and profitability, (c) the key success factors in the decision-making process, and (d) the strategic activities essential in executing business strategies. Interview questions 1 through 3 were used to address and describe the marketing practices, and strategies (premarket and postmarket) in terms of: (a) marketing mix (product, price, place, and promotion), (b) sales goals, (c) customers, (d) competition/market, (e) targeted market shares, and (f) marketing goal during various stages of product life cycle. Interview questions 4 through 8 were used to identify and address the participants' views on (a) the factors influencing the organizations' performance in terms of market share, revenue generation, and profitability, (b) the factors influencing the decision-making process in development and implementation of a marketing strategy, and (c) challenges in the current models of the company's product portfolio management. The interview question 9 was used to explore the participants' views on the company's strategic activities. Interview question 10 was used to identify the key success factors for a pharmaceutical drug manufacturer in order to fight competition.

I ensured validity in the study by following several procedures, such as member checking of the data interpretation, triangulation of the data, the use of participants' words in data analysis and presentation of findings, etc., found in qualitative studies. I demonstrated rigor in the qualitative research by carefully selecting participants who have experience in marketing to match the central research question, and obtained rich data through semistructured face-to-face interviews, and telephone interviews. I asked open-ended questions to avoid influencing the contents of the participants' descriptions and avoided leading questions that could introduce bias. The interviews were extensive and reflected the participants' actual experience. To promote validity and reliability in information, I provided the participants with the interview questions before the interview to better prepare the participants for the interview. To ensure reliability, the transcriptions needed to be accurate and convey the meaning of the participants' responses.

I considered collecting data through face-to-face interviews, telephone interviews, or email interviews. I obtained the data through face-to-face interviews and telephone interviews, which I recorded and then transcribed. I took notes during the face-to-face interviews and telephone interviews. I conducted member checking follow-up interviews after each interview in the form of a synopsis of the interview to validate the accuracy of my interpretations of the participants' responses. I did not conduct email interviews. In case I needed to conduct email interviews, the email interviews would have been transcribed as they were conducted.

The obtained qualitative data were transcribed verbatim and compiled in Microsoft Office Excel® spreadsheets and the qualitative data analysis software program,

NVivo®. Using Excel spreadsheets and the NVivo qualitative data analysis software in data analysis, I used coding to reduce the data gathered from the participants into segments, developed a list of codes from the interview transcript relating to the marketing efforts during product life cycle and factors influencing the decision-making process, and identified themes. To ensure reliability, I established consistency in the definitions of codes throughout the data analysis process by constantly comparing data with the codes and by writing memos about the codes and their definitions. Maguire et al. (2014) documented that researchers ensure reliability in developing codes by constant data comparison. From the presenting themes, I constructed the essence statement describing the topic under study in the population selected.

I reviewed company documents located on public websites, press releases, marketing materials located on public websites, company websites, and government databases in addition to the interviews. Company documents included annual reports, such as Form 10k and Form 10Q, financial information, archived events, marketing material and press releases located on public websites. Government databases included government websites, for example, U.S. Department of Health and Human Services, and the U.S. Food and Drug Administration, that include publicly available resources and information about drugs, the industry, news, the development and approval process, etc. De Massis and Kotlar (2014), and Houghton, Casey, Shaw, and Murphy (2015) documented that documents are used to corroborate the information collected through additional sources. I used company documents and government databases to compare and

show the extents to which the review from secondary data sources corroborated the study findings.

Data Collection Technique

Cridland et al. (2015) documented that semistructured interviews involve in-depth conversations between the researcher and the participant during interviewing to gain in-depth understanding on the participants' views on the topic under study. I collected data through semistructured, in-depth interviews conducted through face-to-face interviews and a telephone interview to explore the views of three business professionals on a management level, employed in the marketing department in a successful organization located in central Ohio, who developed and implemented marketing strategies on a daily basis within the pharmaceutical industry in the United States. I conducted a total of three interviews. The objective of this qualitative case study was to explore and determine best practices among marketing managers within pharmaceutical companies on marketing efforts. Semistructured, in-depth interviewing was an appropriate method for data collection because it allowed examination of the participants' perspectives through dialogue. The pilot study validated the interview questions.

Gill (2014) documented that the purpose of the interview is to gather descriptions of the participants' lived experiences and recognized the interpretative nature of the meaning of the topic under study described. Kallio, Pietila, Johnson, and Kangasniemi (2016) documented that in-depth interviewing allows obtaining rich data from the participants on the research topic under study. Semistructured interviews follow an agenda driven format or interview protocol designed by the researcher, and allow the

researcher to ask the participants probing questions focusing on their perspectives pertaining to the topic under study (Cridland et al., 2015; Halabi & Carroll, 2015; Kallio et al., 2016). I created an interview protocol to guide the participants during the interviewing (see Appendix C). Smith and Osborn (2014) documented that the interview protocol is a guide rather than a rigid structure, and pointed out the role of the interviewer as an active listener during the interviewing.

The process of data collection started after I received the IRB approval. The recruitment of the participants was conducted via email. I used public means to identify the participants. I obtained contact information of the participants through LinkedIn. I emailed the potential participants the introductory email script (see Appendix A), and attached the Informed Consent Form in the email invitation to provide the contacted individuals with an option to review the Informed Consent Form prior to making a decision whether or not to take part in my study. The volunteers who expressed interest to participate in the study consented to participate by emailing me the words "I consent." I received the participants' consents prior to scheduling the interviews. The three participants in the study consented to participate by emailing the words "I consent." I acknowledged the receipt of the consents by replying to the participants' emails.

I scheduled each interview with the participants after I received the consents. The interviews with the participants took place outside workplaces in non-working hours for the participants. I conducted two face-to-face interviews and one telephone interview based on the participants' preferences and availability. The two face-to-face interviews took place in private rooms at libraries. I followed the participants' preferences on the

selection of the interview technique to conduct interviews, which allowed the participants to feel comfortable providing responses to the open-ended questions.

The geographical location of the participants and the researcher, resource savings (for example, reduction in travel costs), the convenience, and the participants' availability to interview influenced my decision to use face-to-face interviews and telephone interviews as techniques to conduct interviews. Mealer and Jones (2014) documented that in qualitative research, even though face-to-face interviews have been dominant interview technique, other interview techniques, such as telephone interviews, have been introduced, and widely accepted and used among researchers. I considered telephone interviews in addition to face-to-face interviews because of some of the benefits that these techniques offer. Oates (2015) noted that telephone interviews allow inclusion of participants across a wider geographical scale, they do not involve travel, and they require less time and money. Halabi and Carroll (2015) noted that even though telephone interviews have been widely used in quantitative research, in qualitative research they are equally viable option to other established methods of qualitative data collection. I did not conduct email interviews. Pearce et al. (2014) documented that email interviews as a form of computer-mediated communication have been introduced and used in qualitative research as a result of the development and use of new communication forms.

Oates (2015) documented that compared to telephone interviews and email interviews, face-to-face interviews have distinct advantage in providing additional information through nonverbal cues, such as body language, voice, and intonation. Some of the major disadvantages of telephone and email interviewing is the absence of verbal

cues (in email interviews) and non-verbal cues in both telephone and email interviews, compared to face-to-face interviews. Ward, Gott, and Hoare (2015) documented that telephone interviews provide nonvisual linguistic cues that researchers should consider. Pearce et al. (2014) documented that the importance of the nonverbal cues may vary depending on the research objective. Ward et al. (2015) noted the lack of face-to-face communication with study participants could result in miscommunication and misinterpretation of the data collection technique addressed to the participants and the answers provided. I was not concerned with the nonverbal cues to answer the research question posed in this study because the nonverbal cues, such as body language and the voice and intonation I observed during the interview process did not provide additional information. The face-to-face interviews lasted between 50 and 60 minutes, while the telephone interview lasted about 45 minutes. I followed the Interview protocol (see Appendix C) to guide me through the interviews. I recorded the verbal responses obtained through the two face-to-face interviews and one telephone interview using telephone, an iPhone 7® smartphone after I obtained permission to record from each participant.

I briefly described the purpose of the study and the interview process at the beginning of each interview. I verbally went through the informed consent form to ensure that participants have a full understanding of their part in the study. I asked each participant for permission to turn on the audio recording feature of the telephone, iPhone 7, and started recording after obtaining permission. I introduced the participants with generic codes, such as INT1, INT2, and INT3, to conceal their identities. I went through

the open-ended interview questions as shown in Appendix B. I began with question 1 through question 10. I continued the interviews with the additional wrap-up questions. I distributed the interview questions prior to the interview, so that the participants become familiar with the subject and topic and know what to expect. I took notes during the interviews. At the end of each interview I discussed with the participants the member checking process and the next steps. I closed each interview by thanking the participants for their participation.

During the interview process I observed the nonverbal cues, such as body language, and voice and intonation, and took notes. During the face-to-face interviews I observed the participants' body language, and the voice and intonation. The two participants felt comfortable answering the questions. During the telephone interview I looked for changes in voice and intonation. The participant felt comfortable answering the questions. I concluded the non-verbal cues I observed during the face-to-face and telephone interviews did not provide any additional information.

After each interview, I downloaded the recordings on my password protected computer accessible only by me. I deleted the interview recordings from the telephone after I downloaded the recordings. I transcribed verbatim the interview recordings in a transcript by typing what I heard.

I reviewed and analyzed the interview transcripts and prepared interpretative reports which consisted summary answers in a form of synopsis for each question, representing my interpretations of the participants' responses for each interview. I emailed the interpretative reports back to the participants to review and verify the

accuracy of my interpretations of the interview responses. Each participant had an opportunity to engage in member checking and validate the answers and my interpretations. Each participant had approximately 1 week to review and respond. All three participants responded to my invitation to participate in member checking follow-up interviews. I conducted one face-to-face and two telephone follow-up interviews based on the participants' availability and preferences. The member checking follow-up interviews lasted between 10 minutes and 25 minutes. The face-to-face follow-up interview took place in a private room at a library.

During the follow-up interviews I asked each participant to review the report with the summary answers and validate my interpretations. The three participants confirmed the accuracy of my reports and did not provide any corrections. Participant INT1 provided additional information to question 7. Participant INT2 provided additional information for questions 2 and 7. Participant INT3 provided additional information for question 2. I combined the interview transcripts from the initial interviews with the new data collected from the follow-up interviews for data analysis.

Cronin (2014), De Massis and Kotlar (2014), and Houghton et al. (2015) asserted triangulation strengthens the evidence from additional data collection sources focusing on the confirmation of data. I ensured triangulation by comparing data collected from multiple data sources. I triangulated the data collected through interviews and member checking and compared this data to the review of secondary data such as company documents, company websites, and government databases with the intent to show to what

extent the study findings confirm or disconfirm the review of company documents and government databases.

The review of secondary data, such as company documents and government websites, enhanced my understanding of the industry trends, the regulatory environment, and the company operations. Company documents included annual reports, such as Form 10k and Form 10Q, financial information, archived events, marketing material and press releases. The review of the annual reports and archived events gleaned information on the company operations, financial performance, market segmentation, product performance, innovation strategies, corporate initiatives, industry trends, etc. The review of press releases and marketing materials provided information about the company's product, financial and corporate news, events, activities, and marketing tools and techniques. Government databases included government websites, such as U.S. Department of Health and Human Services and the U.S. Food and Drug Administration. The review of government databases gleaned information about pharmaceuticals, the industry, the development and approval process, the regulatory environment, etc.

Documents used in the study were publicly available. De Massis and Kotlar (2014) documented that publicly available documents are unobtrusive data sources. I did not ask the participants for internal documents because internal documents might contain sensitive information or could raise privacy concerns or participants' discomfort. During the research process I was able to easily access the publicly available information and documents.

Pilot Study

I conducted a pilot study after the IRB approval, prior to collecting data for the study. Kallio et al. (2016) documented that conducting a pilot study is useful to test the reliability and validity of the interview questions, can enhance the quality of the interview questions, and can help identify areas of potential bias. Cridland et al. (2015) noted pilot testing of the interview protocol is useful to estimate the time needed to conduct an interview, or identify questions that are confusing or open to misinterpretation. I recruited one individual, a marketing manager, and conducted a face-to-face interview using the initial interview questions I developed for the study. I obtained the individual's contact information via LinkedIn. I recruited the participant by email request. I obtained consent from the participant prior to the interview via email. The interview took place in a private room at a library. The initial interview lasted approximately 50 minutes. I tested the interview questions (are they clear enough, or do they make sense), the length of time of the interview (verified that the interview will not take more than one hour), tested the recording and conducting of the interview, and the member checking process. During the interview I observed the non-verbal cues, such as body language, voice and intonation, and took notes during the interview. Post interview, I asked the participant if the interview questions were clear, critical areas relative to the research question that I have not considered, and for additional suggestions for the interview questions. I received good rich data during the interview. After the interview I transcribed the data, and then prepared summaries of each response for each question to prepare for member checking. I emailed the summarized answers back to the participant and scheduled follow-up

interview to validate my interpretation of the participant's responses. The follow-up interview took place in a private room at a library, approximately 1 week after the initial interview. The follow-up interview lasted approximately 20 minutes. During the member checking, I asked the participant to review the interpretative report of the interview for accuracy. The participant validated the accuracy of the interpretative report. No new information was collected during the follow-up interview. Based on the participant's responses on the interview and follow-up questions, I chose not to revise the interview instrument. The pilot test helped me validate the interview questions and provided clarity whether the interview questions are clear and easily understood.

Data Organization Technique

I conducted two face-to-face interviews and one telephone interview. I made backups of the qualitative data by copying the emails to a word processing document, and by printing out every email sent to the participants and received from the participants and kept them in a secure file. I transcribed verbatim the recorded interviews after each interview. I made written copies of each recording by typing what I heard, including pauses, in a word processing document. I wrote down notes in the text as I transcribed. These notes were useful in data analysis. I made backups of the text documents and the recordings to an external hard drive. I printed out the text documents as an additional security measure, and kept the hard copies in a separate, secure box file.

I organized the files and data received from the participants in folders. I labeled the folders as follows: Email Requests for Participation, Email Communications, Participants Consents, Transcribed Interviews, Interpretative Reports, Member Checking

Follow-up Interviews, Combined Transcripts, etc. I labeled the transcribed interview transcripts from the initial interviews as Transcribed Interview Participant INT1, Transcribed Interview Participant INT2, and Transcribed Interview Participant INT3. I labeled the interpretative reports, which comprised of summary of the interview responses, as Interpretative Report_INT1, Interpretative Report_INT2, and Interpretative Report_INT3. I labeled the combined transcripts, which comprised of the initial interview transcripts combined with the additional data collected through the follow-up interviews, as INT1_Combined Transcript, INT2_Combined Transcript and INT3_Combined Transcript.

I recorded emerging understandings in a codebook, a research log, or a reflective journal. I used the codebook, the research log, and the reflective journal to track and organize the evidence to support the data analysis. A codebook consists of word frequencies generated from the analysis of the interview transcripts, which lead to development of categories and themes (Ando et al., 2014). Researchers use research logs or reflective journals to document issues experienced with the data analysis during the research process (Elo et al., 2014; Williams, 2015). I generated a codebook consisting of codes developed from the interview transcripts using thematic analysis. I used a research log of the data collection instruments and processes, and the methods for data analysis, coding, and interpretation. In the research log, I documented any issues I found when cross-referencing the transcribed interviews with the audio recordings. The reflective journal consisted of analysis notes, process notes, personal notes, and any issues I experienced during the research.

I applied the following measures to secure the data obtained from the participants: the data stored on a personal computer, telephone, and external hard drive were password protected, accessible only by me; and the printed materials were stored in a secure file, accessible only by me. I will store the data for 5 years, after which I will destroy all the data on the following ways: (a) all printed materials will be destroyed by shredding; (b) I will delete permanently all data stored on a personal computer, telephone, and external hard drive; and (c) I will delete permanently all emails received from the participants in the study, and sent to the participants by me from the email account. I received the following types of emails from the participants: consents to participate in the study, communications regarding scheduling the initial interviews, and confirmations on follow-up interviewing.

Data Analysis

I conveyed a qualitative, case study research study through primary interviews to explore the lived experiences of the participants regarding marketing solutions during various stages of product life cycle in the pharmaceutical industry in central Ohio. I obtained multiple facets of the topic under study, which is marketing strategies during product life cycle in the pharmaceutical industry, by conducting three interviews, followed by member checking follow-up interviews. Participants in the study were managers, involved in development and implementation of marketing strategies, employed in an organization in the prescription medicine segment within the pharmaceutical industry. Each interview took approximately 1 hour of each participant's time.

The central research question addressed in the research study was: how do marketing managers within pharmaceutical companies pursue marketing (product, price, place, and promotion) during various stages of the product life cycle? The interview questions (see Appendix B) consisted of open-ended questions and focused on the following business aspects: (a) marketing strategy efforts in the pharmaceutical industry; (b) the factors associated with revenue generation, market share and profitability; (c) the key success factors in the decision-making process; and (d) the strategic activities essential in executing business strategies. The interview questions as shown in Appendix B allowed for response grouping into themes.

I followed Yin's (2017) five-step data analysis process for a case study: (a) compiling, (b) disassembling, (c) reassembling, (d) interpreting, and (e) concluding. The process of data analysis in this study included the following: (a) transcribing the interviews, (b) reading and re-reading the data to gain detailed insights into the topic under study, (c) developing meaningful codes and themes, and (d) linking codes to themes or categories that can provide rich description of the topic under investigation. I used **coding,** content and theme analyses to describe the participants' views in the study.

Colorafi and Evans (2016) documented that researchers use content and theme analysis to describe and present the participants' experiences. Smith and Firth (2011) and St. Pierre and Jackson (2014) defined thematic analysis as an interpretive process in which researchers search data for patterns systematically to provide a rich description of the topic under study and noted that generating themes from data is a widely used analytical method in qualitative research. I used the data analysis process to develop

themes and categories supported with data, and gain an understanding of the analytical process and drawing conclusions based on qualitative data.

Following Yin's five-step analysis process, I started the data analysis with compilation of data from recordings and interview notes. I transcribed the interviews manually after the completion of each interview by typing what I heard in a Microsoft Office Word® document. I did not use any software to transcribe the interviews. Transcribing the interviews manually enabled me to familiarize myself with the participants' responses and understand the data. Listening to, reading the responses for each participant under each interview question, and comparing the transcripts with the recordings word by word helped me ensure accuracy in transcribing.

I de-identified the data collected through interviews. The coding for the participants' responses was INT1, INT2, and INT3. I then analyzed, interpreted, and created a synopsis of each interview question for each interview. I conducted member checking follow-up interviews by reaching out to the three participants who provided information during the interview process to assess and validate the accuracy of the reported information and the interpretations. I combined the data obtained from the follow-up interviews with the initial interview transcripts in Word documents and used the combined reports further in the data analysis process. I entered all data into Excel spreadsheets. I continuously added newly collected data to the previously collected data after each interview. I started grouping the participants' responses under each interview question (for example, I grouped Question 1 answers, Question 2 answers, Question 3 answers, etc.). I read and re-read the answers under each interview question and reviewed

the individual answers under each participant to gain a deeper understanding of the participants' responses. The side-by-side comparison of the participants' responses under each interview question allowed for identifying overreaching themes and determining if data saturation was achieved. After the completion of the third combined interview transcript, I prepared and formatted the combined transcripts in Word documents for each participant for importing in NVivo.

I used coding to reduce the data gathered into segments. Colorafi and Evans (2016) defined the coding process as an establishment of concepts from data and noted that coding involves ongoing interpretation and examination of textual data. To develop codes, I used a combination of preexisting codes and themes developed prior to actual data collection and open codes and themes or emergent categories that emerged from the data collected through interviews. Colorafi and Evans documented that researchers could use a combination of predeveloped codes and emerging codes from the data. St. Pierre and Jackson (2014) argued that the use of preexisting codes only might limit the analysis to the prefigured codes rather than opening up the codes to reflect the views of the participants used in traditional qualitative research and suggested the use of emergent categories to supplement the preexisting codes.

I developed the preexisting codes by using Microsoft Office Excel spreadsheets. I developed the preexisting codes to match the central research question relating to the marketing elements, such as- product, price, place and promotion, supplemented with information about the customers, sales, competition, and marketing goal (see Table 1). The stages of product life cycle were initially identified as premarket phase (focusing on

marketing activities during 1 year prior to launch date), introduction phase, 1 year post-launch, and after one year of launch, given the complexity of the prescription medicine market segment (see Table 1). To answer the question about the factors influencing the decision-making process, the same coding process was applied through developing a combination of preexisting and emergent categories from the textual data (see Table 2).

Table 1 provides a list of initial codes developed from the interview questions relating to the central research question.

Table 1

A List of Initial Codes for Marketing Efforts During the Product Life Cycle in the Prescription Medicine Segment

Codes	Premarket Phase (One Year Prior to Launch)	Introduction Phase	One Year Post-Launch	After One Year Post-Launch
Product				
Thematic Category				
Participants' Responses				
Price				
Thematic Category				
Participants' Responses				
Distribution				
Thematic Category				
Participants' Responses				
Promotion				
Thematic Category				
Participants' Responses				
Sales				
Thematic Category				
Participants' Responses				
Customers				
Thematic Category				
Participants' Responses				
Competition				
Thematic Category				
Participants' Responses				
Marketing goal				
Thematic Category				
Participants' Responses				

Table 2 provides a list of initial codes developed from the interview questions relating to the factors influencing the decision-making process.

Table 2

A List of Initial Codes for Factors Influencing the Decision-Making Process

Codes	Thematic Category	Participants' Responses
Key success factors		
Factors associated with market share, revenue generation, and profitability		
Challenges and factors influencing the current models of product portfolio mix		
Strategic activities in executing business strategies		
Challenges within the industry		

These generated preexisting codes developed from the interview questions needed further exploration and revision. Further development and revisions of the initial codes were established through the development of the open codes that emerged from the textual data obtained from the interview transcripts. The following process applied:

I started the process of developing open codes after the first interview by using Excel spreadsheets. I developed a list of codes and quotes from each interview transcript relating to the marketing efforts during product life cycle and factors influencing the decision-making process. I developed codes by considering each phrase or paragraph of the transcript in an attempt to summarize what the participants in the study were describing. Key phrases were summarized using participants' own words, as a means of staying 'true' to the data (Smith & Firth, 2011). I cross-referenced the codes developed from the three interviews and compiled a list of codes and quotes. I searched for patterns, and organized the codes into interconnected themes, subthemes, and categories. I cross-

referenced the open codes and the themes that emerged from the textual data with the preexisting codes, and compiled the revised list of codes, themes, and subthemes.

I developed the open codes that emerged from the data by using primarily Excel spreadsheets supplemented with the computer program NVivo. I first developed codes, themes, and categories using Excel spreadsheets for the three participants. I then repeated the process of developing codes by using NVivo 11 Plus for the three participants. The use of NVivo software was useful in organizing the data, categorizing the data, discovering themes, and visualization of the data. Using the NVivo software I continued to work through the data, searched for patterns, and grouped the codes and subthemes into broader categories.

Smith and Firth (2011) documented that researchers could use Word documents or Excel spreadsheets to create coding matrices and emphasized the disadvantage of using word or excel spreadsheets when large volumes of data are involved. Smith and Firth also discussed the application of computer programs (such as MAXQDA®, ATLAS.TI®, and NVivo) in qualitative research. Smith and Firth documented that computer programs for data analysis are useful to overcome difficulties associated with managing large volumes of data using spreadsheets and can be used to summarize data in a series of matrices from which it is possible to conduct thematic analysis. Paulus and Lester (2016) discussed the use of a software program in data analysis and documented the benefits of using qualitative data analysis software programs, such as efficient work with large data sets, and easier data management. Zamawe (2015) documented that the

use of a software program in data analysis ensures easier, efficient, and effective coding compared to manual coding.

I evaluated the relationship between the key themes that emerged from the data and the conceptual framework. The conceptual frameworks I used in the study were the general systems theory and the evolutionary systems theory. The general systems theory developed by Bertalanffy (1972) was used to explain the interconnectivity among the departments within an organization and its environment. Drawn from the concept of the general systems theory, the data related to the conceptual framework by describing the participants' views on the strategic activities, such as collaboration with other research companies to co-develop, co-promote, or outsource certain functions within the organization, and the effects of the industry and the market changes on the decision-making processes. The evolutionary systems theory developed by Laszlo and Laszlo (1997) was used to explain the product life cycle model. Drawn from the concept of the evolutionary systems theory, the data related to the conceptual framework of the study by describing and interpreting the participants' views on the marketing strategies, primary objectives, and activities that marketers are undertaking during various stages of product life cycle, from the idea, to result, and maintenance, to accomplish the company's objectives in the marketplace.

The themes that emerged from the data linked and expanded the conceptual framework for both theories through the research findings, participants' responses, and the review of the literature on the conceptual framework. The research findings led to the identification of four main themes and seven subthemes. The four main themes were: (a)

marketing function, (b) product life cycle phases, (c) factors influencing the decision-making process, and (d) strategic activities in executing business strategies. The seven subthemes were further broken down to categories.

Carter, Bryant-Lukosius, DiCenso, Blythe, and Neville (2014); Flick (2017); Houghton et al. (2015); and Yin (2017) documented that qualitative researchers use triangulation to develop a comprehensive understanding of the topic under study and test validity through the use of multiple methods or data sources. De Massis and Kotlar (2014) and Houghton et al. (2015) documented that the purpose of triangulation is to confirm data through comparing data from multiple sources to explore the extent to which findings could be confirmed, and to ensure completeness of data through gathering multiple perspectives from multiple sources to portray as complete picture as possible of the topic under study. Carter et al. (2014) and Flick (2017) discussed the four ways of triangulation: (a) method triangulation-collecting data using multiple methods, (b) data source triangulation-collecting data using multiple data sources, (c) theory triangulation-interpreting data through the use of different theories, and (d) investigator triangulation-using two or more researchers to analyze data and provide multiple observations.

I used methodological triangulation in this study as a data analysis process to validate the findings of the interviews. I triangulated the participants' responses with company documents and government websites, and the literature. For example, if participants being interviewed stated certain product premarket and postmarket strategies, my own experience within the pharmaceutical industry coupled with scholarly research on the effectiveness of the implementation of marketing strategies during various stages

of product life cycle, and a review of company documents and company websites served to support the participants' responses.

The review of secondary data included a review of company documents, press releases, and government websites. The review of company documents yielded insights into the industry trends, the company operations, corporate initiatives, financial performance, product performance, market segmentation, etc. The review of government databases yielded insights into the industry, the development and approval process of pharmaceuticals, the regulatory environment, etc. The review of the secondary data sources provided insightful information about product positioning, promotional activities, the effect of competition on the product and market performance in terms of sales, the effect of timing of market entry, the effect of product life cycle programs, innovation strategies, risk factors, government regulations, etc. I compared the participants' responses to the review of the secondary data sources to show the extents the secondary data sources align with the participants' responses.

Reliability and Validity

Qualitative researchers tend to focus on gaining deep understanding on the topic under study with a limited number of participants, with purpose to explore deeply the topic under study or experience to build further knowledge, while in quantitative research, the objective is to generalize the study to other settings, or cases (Tsang, 2014). To establish quality in qualitative research, researchers need to establish validity and reliability in research (Leung, 2015; Yin, 2013). Yin (2017) documented that the quality of any research design can be judged according to the following logical tests: (a)

construct validity (identifying correct operational measures for the concepts under study, p. 40), (b) credibility, (c) transferability (can the study's findings be generalized), and (d) reliability (demonstrating that data collection procedures can be repeated with the same results). Houghton et al. (2015) documented that qualitative rigor, which is similar to reliability and validity in quantitative research is (a) an attempt to access the accuracy of the findings, as best described by the participants and the researcher; (b) is useful for establishing consistency of the study methods over time; and (c) provides an accurate representation of the population studied. To assess rigor, or validity and reliability in qualitative research, I followed the concepts presented by Morse (2015a) who, drawn from the model of trustworthiness, addressed the following components to build trust: (a) credibility (truth value), (b) transferability (applicability), (c) data dependability (consistency), and (d) confirmability (neutrality). Tracy (2010) presented and explored eight key indicators of quality in qualitative research, such as: (a) worthy topic (the research topic is relevant, interesting, timely, and significant), (b) rich rigor (use of appropriate theoretical constructs, date and time in the field, sample, context, and data collection and analysis processes), (c) sincerity (the study includes reflection of the researcher, potential biases, and transparency about the methods and challenges), (d) credibility (thick description of data, or details) (e) resonance (transferrable findings, and generalization), (f) significant contribution, (g) ethics, and (h) meaningful coherence (the use of methods and procedures are in alignment with the employed research methodology; and showing interconnectivity among interview questions, conceptual framework, findings, and literature review).

Reliability or Data Dependability

Morse (2015a) and Houghton et al. (2015) documented that researchers achieve dependability (audit trail) in qualitative, or reliability in quantitative research by (a) describing the specific purpose of the study, (b) discussing how and why the researchers selected the participants for the study, (c) describing how the data were collected and how long the data collection lasted, (d) explaining how the data were reduced or transformed for analysis, (e) discussing the interpretation and presentation of the research findings, and (f) communicating the specific techniques used to determine the credibility of the data. Houghton et al. proposed the following strategies to establish dependability: (a) peer participation in data analysis, (b) providing a detailed description of the research methodology and design, or (c) repeating the study step by step to see if the results might be similar to the initial findings. Colorafi and Evans (2016) proposed clearly describing the researcher's role in data collection, and the use of the same questions in the same order during interviewing as strategies to achieve dependability. Elo et al. (2014) also documented that dependability in qualitative research is similar to reliability in quantitative research and could be achieved by establishing an audit trail or reflective journal and tracking the process from the beginning to the end. Petty, Thomson, and Stew (2012) documented that to ensure dependability, the researcher needs to track all changes during the research process, and document those changes. To establish dependability in research, I used the following strategies: (a) use of a reflective journal to document and track all changes during the research process, (b) provided detailed description of the research method and design, (c) described the purpose of the study, (d) discussed how

and why the participants were selected, (e) described my role in data collection and analysis, (f) asked each participant in the study the same questions in the same order, (g) described the data collection process, the coding process and the establishment of emergent themes and categories, (h) discussed the interpretation and presentation of findings, (i) discussed the techniques used to determine credibility of data, and (j) conducted a pilot study to test the validity of the interview questions, identify questions that are confusing or could be misinterpreted, and the length of time of the interview.

Validity

Credibility. Morse (2015a) documented that credibility, similar to internal validity in quantitative research, refers to checking for the representativeness of the data as a whole, and could be established through member checking (feedback from participants in the study), reviewing the individual transcripts, looking for similarities within and across study participants, peer examination, or using participants' own words. Houghton et al. (2015) recognized the interpretative nature of the qualitative research, where each participant of the study, the researcher, and the audience have their own personal perspective, influenced by their culture, experience, the curriculum, the environment, and other contextual influences. Member checking as a technique to establish credibility involves obtaining feedback from the participant in the interview to ensure that the researcher's interpretations (reported as themes) are accurate representations of the participants' experiences, and are recognized by the participants (Harvey, 2015; Houghton et al., 2015; Thomas, 2017).

Tracy (2010) and Petty et al. (2012) referred to credibility as trustworthiness and plausibility in findings, and noted that in order to establish credibility, the researcher need to include (a) thick, rich description of data, (b) concrete and sufficient details from the interview transcripts so that the readers can come to their own conclusions on the topic under investigation, and (c) showing the readers the participants' views by using the words of the participants. Tracy suggested the use of triangulation, link with the literature review and the conceptual framework, and multivocality (in terms of recognizing the cultural differences between the researcher, and the participants) as strategies to enhance credibility in qualitative research. Flick (2017) documented that researchers could use triangulation where the researchers use multiple sources, methods, theories and investigators to support the findings to provide evidence. Leung (2015) also documented that triangulation of data could enhance the validity of findings, and address credibility, and defined triangulation as the use of variety of data collection sources, investigators, methods, or theories to provide evidence. Yin (2012) documented that triangulation supports validity in research and incorporates three sources of data that are compared and contrasted to determine whether the sources of data are in alignment and could support the findings.

To establish credibility in the research study, I conducted a pilot study to validate the interview questions and check for clarity. I obtained rich data from carefully selected participants through (a) semistructured interviews, (b) prolonged engagement with the participants by building trust and (c) checking for misinformation that stems from distortions introduced by the research and the participants. I conducted member checking

through follow-up interviews with the participants in the study after the completion of the interviews. I triangulated the data from the semistructured interviews, the member checking, and the research log with company documents, government websites, and the literature.

I clarified the information, the accuracy, and the credibility of the findings through (a) follow-ups with the participants, (b) comparison of the participants' responses to a review of company documents and government websites, and (c) use the words of the participants in data analysis and interpretation and presentation of findings. To convey the meaning of the participants' descriptions, I obtained (a) detailed field notes by recording the face-to-face interviews with a telephone, iPhone 7, and taking notes during the interviews; and (b) accurate transcriptions of the interviews. E-mail interviews would have been transcribed automatically. I did not conduct email interviews.

Transferability. Houghton et al. (2015) defined transferability in qualitative research, that is similar to external research in quantitative research, as "the ability to transfer research findings from one group to another," and referred to the extent of applicability of research findings or study participants to other settings, or situations (p. 153). Colorafi and Evans (2016) documented that transferability shows whether the study findings could be applied to other studies and includes discussions of generalizability. Houghton et al. (2015) provided the following strategies to establish transferability: (a) providing description of the population under study, and (b) the geographical boundaries of the study. Yin (2013) referred to transferability as a criterion of conceptualizing a gradient of similarity for settings, people, times, and contexts, from most closely similar

to least similar to those in the research study and provided strategies to establish transferability: (a) thick description of the participants in the study, (b) the geographical location, and (c) rich description of the topic under investigation. Mojtahed, Nunes, Martins, and Peng (2014) documented that the use of semistructured interviews with open-ended questions allows the researchers to establish transferability of research findings to other settings or populations. Following the strategies proposed by Houghton et al. (2015), I provided rich description of the population under study, and the geographical location of the study to establish transferability.

Confirmability. Houghton et al. (2015) documented that confirmability in qualitative research, or objectivity in quantitative research, means reflexivity, where the researcher needs to provide field notes about their personal biases, personal feelings, and insights, and how they affect the research. Tracy (2010) used the term sincerity to address confirmability in qualitative research. De Massis and Kotlar (2014) recommended truthful presentation of findings and stressed the importance of personal bias. Strategy to establish confirmability is asking the participants in the study to clarify information, or definitions of terms (Houghton et al., 2015; Roy et al., 2015; Tracy, 2010). To establish confirmability, I used the following strategies: (a) described in details my personal biases, preconceived ideas and values, and the possible effects on the participants and the situation in the Reflections section, and (b) described my role in the data collection process and any relationship I have had with the topic, participants, or area in the Role of the Researcher section in the study (Walden University, 2018).

Data Saturation. The concept of data saturation is needed to assess the content validity of the study (Elo et al., 2014; Morse, Lowery, & Steury, 2014; Nelson, 2016). Achieving data saturation is a challenge in qualitative research because of the absence of explicit guidelines of determining data saturation (Nelson, 2016; Marshall et al., 2013; Morse et al., 2014). Researchers achieve data saturation when no new information is obtained during data collection (Ando, et al. 2014; Marshall et al., 2013; Robinson, 2014; Vaprio et al., 2017). Morse (2015b) documented that data saturation is achieved when no new themes emerge from the data, no further coding is needed, and replication of themes and categories is ensured. I collected new data through interviewing participants until no new information is obtained, and no new themes emerged from the data to achieve data saturation.

The constant comparative method relies on the process of constant comparison to ensure data saturation (Cronin, 2014; Fox & Moreland, 2015). Constantinou, Georgiou, and Perdikogianni (2017) documented that the constant comparative method consists of the following four stages: (a) comparing each theme that emerges from the data, (b) integrating themes and properties, and (c) writing the results. The constant comparative method involves comparison of new data to the previously collected data that are already coded, on an ongoing basis (Ando et al., 2014; Constantinou et al., 2017; Fox & Moreland, 2015; Morse, 2015b). I used constant comparative method in this study that allowed for constant comparison of the collected data to ensure data saturation. In data analysis, the newly collected data were added to the previously collected data and developed codes to determine if further coding was needed, and to test the developed

themes by checking if new themes emerged from the data until the data indicated replication or redundancy.

Transition and Summary

The purpose of this qualitative case study was to explore the marketing efforts during various stages of product life cycle in the pharmaceutical industry. A pilot test was conducted to validate the interview questions. Data were collected through in-depth, semistructured interviews, and a review of secondary data. The semistructured interviews (face-to-face interviews and telephone interviews) were recorded, transcribed, analyzed, and validated. Three business professionals on a management level within the same organization in central Ohio, who developed and implemented marketing strategies, participated in the interviews. I began data collection after obtaining permission from Walden University IRB. The secondary data included company documents and government databases. I triangulated the participants' responses with company documents and government websites, and the literature.

Section 2 of the study provided detailed description of the role of the researcher, the participants in the study, the population and sampling, and the ethical research, the research method and design, the data collection process, the coding process, the selection of the participants, data analysis, and the techniques used to establish validity. Section 3 of the study included the presentation of findings, the application to professional practice, and implications to social change, the recommendations for action and further study, and the reflections of my experience with the research process.

Section 3: Application to Professional Practice and Implications for Change

This section included presentation of the findings, applications to professional practice, implications for social change, recommendations for action, recommendations for further research, and reflections.

Introduction

The purpose of this qualitative case study was to determine the best practices among marketing managers within pharmaceutical companies on how to pursue marketing strategies during various stages of product life cycle. Data collection was multidimensional and included semistructured interviews of business professionals on a management level employed within a marketing department at a company in central Ohio of the United States and a review of secondary data. I conducted two face-to-face interviews at public halls, and one telephone interview. Data saturation was achieved with the third participant; therefore, the interviews did not continue. I transcribed the interview responses word for word in a transcript after the completion of each interview. I conducted member checking follow-up interviews after the completion of each interview. The analyses of the interview transcripts resulted in the identification of codes and quotes, and emergent themes. The following emergent themes derived from the data: (a) marketing as a function, (b) product life cycle phases, (c) factors influencing the decision-making processes, and (d) strategic activities in executing business strategies. All emergent themes and subthemes contributed significantly to answering the overarching research question. In presentation of findings, under each emergent theme I documented the approaches that the managers identified as critical or essential. The

results from the interviews included participants' responses. The themes that emerged from the data were compared with themes from the literature. A review of secondary data included company documents, such as annual reports, news releases, and websites, plus government databases. I conducted methodological triangulation of data collected through the interviews and member checking, and compared these data to the review of secondary data, and the literature. I tied the findings to the conceptual framework and the existing literature on effective business practice.

Presentation of Findings

The study findings are of potential value to managers in the pharmaceutical industry who develop and implement marketing programs and strategies during various stages of product life cycle. In this section, I provide a presentation of the findings, an overview of the participants' responses, describe the emerged themes and discuss the findings in relation to the themes, and how themes are tied to the conceptual framework and literature.

The overarching research question in this qualitative case study was: How do marketing managers within pharmaceutical companies pursue marketing (product, price, place, and promotion) during various stages of the product life cycle? I collected data through multiple data sources to answer the research question. Data collected included participants' responses through interviews, a review of secondary data, such as company documents, company websites, and government databases, and a review of the literature. The participants included business professionals on a management level employed within a marketing department at a company in central Ohio of the United States. The

participants took part in semistructured interviews. I conducted two face-to-face interviews, and one telephone interview. The interviews lasted between 45 and 60 minutes. The face-to-face interviews took place at public halls, where the participants felt comfortable with providing responses to the interview questions. Participants were asked 10 open-ended questions (see Appendix B), and responded to follow-up questions. I coded the names of the participants with the pseudonyms INT1, INT2, and INT3. I transcribed the interview responses word by word in a transcript after the completion of each interview.

Data saturation was achieved with the third participant. I did not continue the interviews when no new information or themes emerged from the third interview. Ando et al. (2014) noted that data saturation is achieved when no new information emerges from the data. To ensure data saturation, I used the constant comparison method in data analysis. After each interview I continuously added the newly collected data to the previously collected data. I developed codes to determine if further coding was needed, and to test the developed themes by checking if new themes emerged from the data until the data indicated replication or redundancy. Ando et al. (2014); Constantinou et al. (2017); Cronin (2014); and Fox and Moreland (2015) documented that the constant comparison method involves comparison of new data to the previously collected data that are already coded on an ongoing basis.

Data credibility was achieved through member checking. Member checking was conducted after the completion of each interview. In member checking, each participant received a summary of the responses for each interview question. Member checking was

conducted to validate my interpretations of the participants' responses and to confirm data saturation was achieved. Impellizzeri et al. (2017) documented that researchers use member checking to ensure each participant's response is represented accurately in the reporting and establish trustworthiness in qualitative research.

In data analysis, I combined the interview transcripts with the new data from the member checking follow-up interviews for each participant response. I primarily used Excel spreadsheets to analyze the data supplemented with NVivo software. The analyses of the interview transcripts resulted in the identification of codes and quotes, and emergent themes. The results from the interviews included responses from each participant.

I followed Yin's (2017) five-step data analysis process for a case study. Yin identified the following five steps for data analysis: (a) compiling, (b) disassembling, (c) reassembling, (d) interpreting, and (e) concluding. I read and re-read the collected data through the interviews to familiarize myself with the responses and compared the participants' responses on each question. I entered the data into Excel first, and uploaded the data in the NVivo software. I compiled the data by disassembling, reassembling, and coding of the data. I worked through the data to discover codes, themes, and categories. The themes emerged from the developed codes, patterns, and relationships. I then cross-referenced the themes and the collected data through constant comparison.

The secondary data sources included company documents, such as annual reports, financial information, and archived events located on public websites, news articles, press releases, marketing materials located on public websites, and government databases. I

compared the participants' responses to the company documents and government databases to show the extents the secondary data sources align with the participants' responses and strengthen the study findings. Ospina, Esteve, and Lee (2017) documented that the use of multiple data sources enhances the credibility in research.

Themes that emerged from data analysis were compared with themes from the literature. I conducted methodological triangulation of data collected through the interviews and member checking and compared this data to the review of secondary data sources, such as company documents and government websites, and the literature. Writing a reflective journal helped track research changes and minimize personal bias. I tied the findings to the conceptual framework and the existing literature on effective business practice.

Emergent Themes

The research findings led to identification of emergent themes and subthemes as shown in Figure 1. I grouped the research findings into four main themes. The four main themes encompassed: (a) marketing function, (b) product life cycle phases, (c) factors influencing the decision-making process, and (d) strategic activities in executing business strategies. The four themes were in alignment with the research question. Each main theme was further broken down into subthemes. Each subtheme was further broken down into emergent key terms and categories. I then related the themes to the company documents and government databases, and the literature.

The first main theme was marketing function, and this theme was not broken down further into subthemes. The second main theme was product life cycle phases,

which was broken down into two subthemes. Under the second main theme, the subthemes included premarket phase and postmarket phase. The third main theme was factors influencing the decision-making process, which was broken down into four subthemes. Under the third main theme, the subthemes included factors associated with market share, revenue generation, and profitability, challenges and factors influencing the current models of product portfolio mix, and key success factors to fight competition. The fourth main theme was strategic activities in executing business strategies, which was broken down into two subthemes. Under the fourth main theme, the subthemes included strategic activities in executing business strategies and alignment of marketing programs with corporate and business strategies.

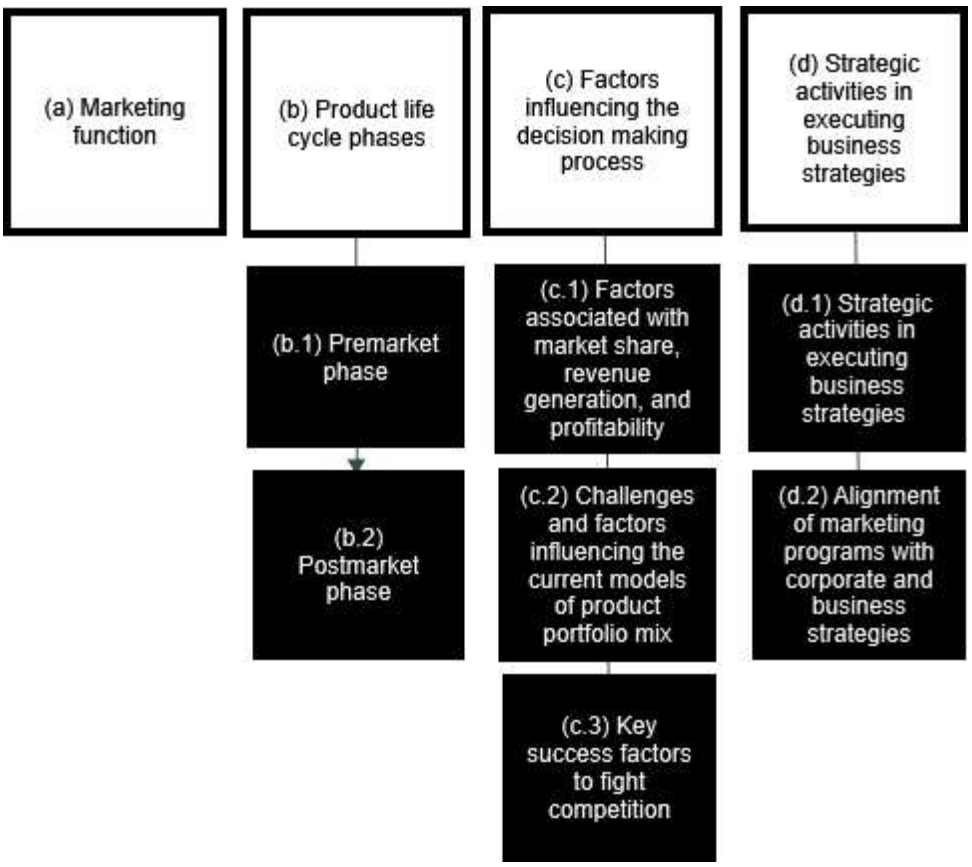

Figure 1. Research results.

Theme 1: Marketing Function

The first main theme was the marketing function. Participants discussed marketing as a function in terms of product, price, place, and promotion during the management of a product life cycle. The following key terms emerged from the data: *marketing activities, product positioning, branding, product life cycle programs, pricing, competition and market, sales, planning of promotional activities,* and *forecasting* (see Table 3).

Table 3 provides a list of initial codes developed from the interview questions relating to the marketing as a function.

Table 3

A List of Emergent Codes for Marketing as a Function

Key Terms	Participants Responses
Product attributes	INT1: Continuous unique offering of high quality, safe, and effective products at a competitive price. INT2: Unique innovative product that is patent protected. INT3: Quality and safe products at a competitive price through our distribution channels.
Branding	INT2: Establish powerful brand differentiation. INT3: Develop and communicate the brand vision and brand positioning.
Product life cycle programs	INT2: It is difficult to generalize and describe just one strategy that would apply to all of our products. INT3: Employing the right life cycle management strategies is a key to success.
Price	INT1: Develop pricing strategies and continuous price revisions of our products.
Competition and market	INT1: We monitor closely the competition, market trends, and the market positioning of our products and respond accordingly. INT2: I monitor the market and the competition to get an insight of the pre-market dynamics for development products, and newly launched products. INT3: The knowledge about the competition, the competitive landscape, and the marketplace needs to be included into the strategic decision making.
Sales	INT1: Customer portfolio management and strong collaboration with the sales team to ensure sales targets are achieved. INT2: Support sales teams in product positioning. INT3: Work closely with the sales force regarding business opportunities and monitor performance.
Promotion	INT1: Design and coordinate promotional activities and campaigns using multiple channels. INT2: Product detailing is important promotional activity. INT3: Invest heavily in promotion and advertisement of certain products through product detailing or samples, and publications and other channels of communication.
Forecasting	INT1: I develop sales forecasts and manage the operating plan budget and profitability. INT2: Develop forecasts, analyze product profit & loss. INT3: Marketing is responsible for developing forecasts.

Marketing activities during premarket and postmarket phase. Research findings revealed marketing teams manage marketing activities and define marketing mix models for development products, new product launches, and commercial products. Participant INT1 responded marketing teams "conduct market research, develop forecasts, target market shares and sales goals, select customers, and define launch plans and marketing mix models." Participant INT2 listed research on market needs, market opportunities, market positioning and segmentation, product positioning, branding, pricing models, forecasting, planning of promotional activities, messages, targeting customers and contracting, competitor analysis; life cycle planning, and defining marketing mix models and reimbursement models. Participant INT3 corroborated the participants INT1 and INT2 responses and stated, "marketing is responsible for developing forecast, defining marketing mix models, defining market positioning, life cycle management, assessing market and competitive landscape, and competitor analysis."

Product positioning. Product positioning included product attributes and patents. Participants identified product quality, safety, and efficacy as key product attributes. Participants responded that marketing teams pursued marketing through the continuous unique offering of high quality, safe, and effective products. Participant INT1 reported "continuous unique offering of high quality, safe, and effective products at a competitive price." Participant INT2 reported "I have to start with the product attributes: product quality, safety and efficacy." Participant INT3 reported "quality and safe products at a competitive price through our distribution channels." Findings aligned with the secondary data sources on product positioning. Paich et al. (2011) and Arafat, Ahmed, and Arafat

(2017) documented safety, efficacy, tolerability, side effects, and mode of administration as factors influencing the key components for treatment options. Camejo et al. (2013), Moe-Byrne et al. (2014), Prajapati et al. (2013), and Schramm and Hu (2013) also discussed product quality, safety, and efficacy for treatment options.

Participants discussed the branded prescription medicines and reported branded drugs are patent protected. Participant INT2 reported "we offer unique innovative product that is patent protected, not a commodity." Arafat et al. (2017), Berger et al. (2016), Kakkar (2015), and Song and Han (2016) discussed patents as a tool to enforce exclusivity in the marketplace.

Branding. Participants INT2 and INT3 reported that marketing teams develop the brand vision, brand positioning, and brand communication plans. Participant INT2 reported "we need to establish powerful brand differentiation in a marketplace based on the product unique features, safety and efficacy." Participant INT3 reported marketing teams "develop and communicate the brand vision and brand positioning." Jasper et al. (2017) documented that brand strategy needs to be an integral part of a marketing strategy. Chen et al. (2016) linked branding strategy to corporate reputation, and documented that branding strategy is useful to gain trust from physicians.

Product life cycle programs. Participants responded that marketing teams develop product life cycle planning strategies, and that marketing programs are product focused, and may not be applicable to all products. Participant INT2 stated "it is difficult to generalize and describe just one strategy that would apply to all of our products." Participant INT3 reported "our marketing programs are product specific." Sabatier et al.

(2012) noted marketing programs are product specific. Paich et al. (2011) addressed the need to investigate the market segments by therapy, product, or patient segments.

Participants emphasized the need to know what the company portfolio mix is, how each product is positioned at what stage of a life cycle in the pipeline, and the customer product portfolio mix. Participant INT3 reported "employing the right life cycle management strategies to each one of the products is a key to success." Findings aligned with the secondary data sources regarding the importance of product life cycle management. Mullins et al. (2010), Prajapati et al. (2013), Nikolopoulos at al. (2016), and Wagner and Wakeman (2016) documented the importance of a product life cycle management, and developed product life cycle models.

Pricing. INT1 and INT3 reported products are offered at a competitive price through selected distribution channels and customers. All participants responded marketing teams develop pricing strategies and models, develop reimbursement models, and conduct continuous product price revisions throughout the product life cycle. Participants INT1 and INT2 reported marketing teams collaborate with payer experts and teams to develop pricing models.

Competition and market. Participants reported that marketing teams conduct research on market needs, market opportunities and market trends, monitor closely the competition, position development and existing products in the marketplace, and respond accordingly to competition. Participant INT1 reported "we monitor closely the competition, market trends, and the market positioning of our products and respond accordingly." Participant INT3 corroborated the participants INT1 and INT2 responses

and stated “the knowledge about the competition, the competitive landscape, and the marketplace needs to be included into the strategic decision making.”

Sales. Participants responded that marketing teams develop sales forecasts, manage customer portfolios, target customers and contracting, and collaborate with the sales team in product positioning, ensuring sales targets are achieved. Participant INT1 reported marketing teams perform “customer portfolio management and strong collaboration with the sales team to ensure sales targets are achieved.” Participant INT2 reported marketing teams “support sales teams in product positioning.” Participant INT3 reported marketing teams “work closely with the sales force regarding business opportunities and monitor performance.” Malshe et al. (2017) and Riggs et al. (2016) documented that salespersons are involved in the formulation and implementation of marketing programs and strategies.

Planning of promotional activities. Participant INT1 reported marketing teams design and coordinate promotional activities and campaigns using multiple channels. Participant INT2 reported “product detailing is important promotional activity.” Participant INT3 added “marketing teams invest heavily in promotion and advertisement of certain products through product detailing or samples, and publications and other channels of communication.” Participant INT3 further added “the investment in promotion and advertising depends on where the product in the life cycle is.” Findings aligned with the secondary data sources regarding the planning of promotional activities.

Forecasting. Participants identified developing forecasts as a marketing function. Participant INT1 reported “I develop sales forecasts and manage the operating plan

budget and profitability." Participant INT2 reported marketing teams develop forecasts and analyze product profit & loss." Participant INT3 corroborated the participants INT1 and INT2 responses and stated "marketing is responsible for developing forecasts and the marketing mix model."

Theme 2: Product Life Cycle Phases

The second main theme was product life cycle phases. Product life cycle phases that emerged from the data could be divided into two categories as shown in Figure 2: premarket phase, and postmarket phase or commercialization. Premarket life cycle phases that emerged from the data are: discovery, phase I of development, phase II of development, and phase III of development. Postmarket phases that emerged from the data are: introduction phase, growth phase, maturity phase, and decline phase.

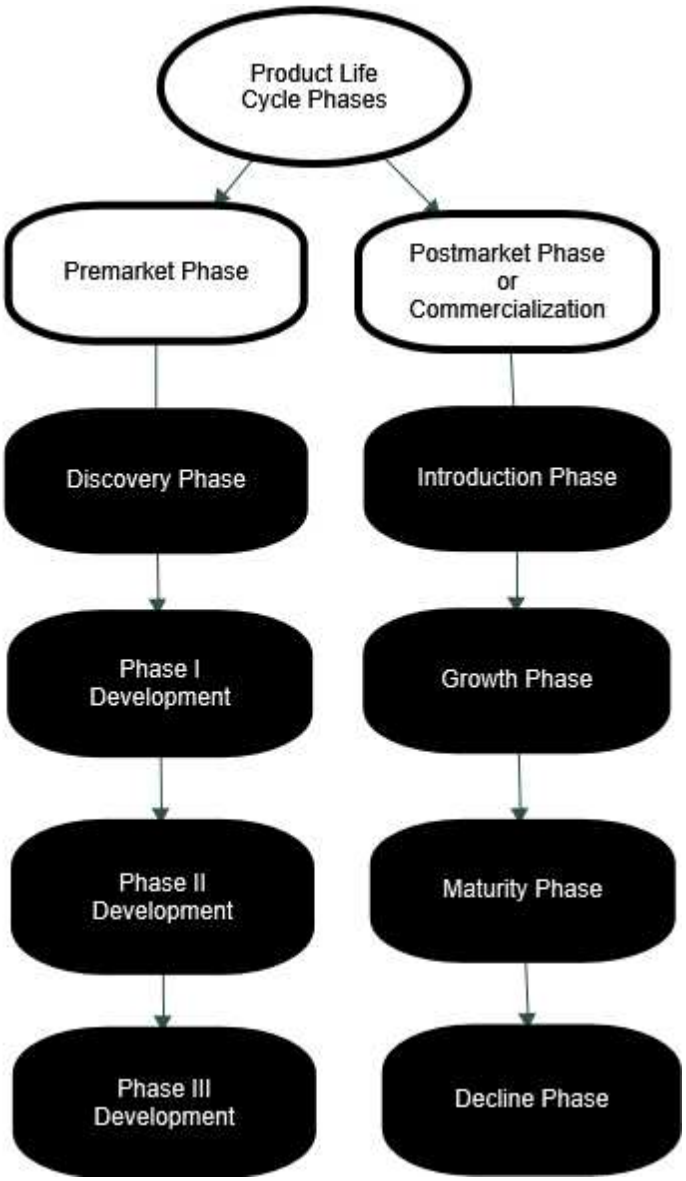

Figure 2. Product life cycle phases.

Premarket phase: The following phases emerged from the data: discovery phase and development phases: Phase I of development, Phase II of development, and Phase III of development. Participant INT2 reported "product goes from discovery to development. Participant INT3 reported "pre-market could be described from discovery, through development phases: Phase I, II, and III." Participant INT1 and INT3 explained in detail the activities associated with each phase. Participant INT1 responded:

> Product goes from discovery phase, where promising molecules are identified; then then enters Phase I , where the research and development team works on establishing safety dosages and manufacturing; then Phase II where safety and efficacy tests are performed; then Phase III where product is defined, clinical trials expand on a larger population; followed with submission to regulatory agencies for approval.

Participant INT3 corroborated participant INT1 response and added in Phase III of development "the data from the trials are usually compared to existing treatments and therapies." Participant INT3 documented that each development phase "could take many years to complete." Findings aligned with the secondary data sources regarding the premarket phase. Prajapati et al. (2013) documented that the development phase of a brand drug involves development of a new product idea, assessment of patentability of the drug formulation, and changes in formulation and methodology.

Marketing involvement during premarket phase. All participants reported that in development phase, their involvement in pre-launch activities is low at early stages of development and increases over time as new development product gets closer to launch.

Participant INT1 added "R&D team decides what products will be launched largely based on medical and regulatory decision making." Participants responded that there are cross-functional teams that oversee all aspects of the upcoming launches and the R&D pipeline, and that marketing has designated personnel focusing on new product launches. Participant INT1 stated "launch strategy is a result of a collaborative effort among various groups." Participant INT2 stated "we work closely with regulatory and the launch team to ensure compliance and align the launch strategies." Eng and Ozdemir (2014), Chang et al. (2014), and Herhausen (2016) discussed the integration of marketing with other functional groups into launch teams, and documented that team leadership, external communication, group cohesiveness, and goal clarity were determinants of new product development team performance.

Marketing focus and marketing strategy. Participants reported marketing focus during the premarket phase is to gain an insight into the market and the market dynamics, develop forecasts, develop marketing plans and marketing mix models for the development products, and define launch plans (see Table 4). Participant INT2 reported "I develop marketing plans and promotional materials; monitor the market and the competition to get an insight on the pre-market dynamics, support the sales teams in product positioning, develop forecasts, and manage the internal regulatory reviews." Participant INT1 reported "we look into the market - if the market is already established, we identify what kinds of existing molecules and treatments are available."

Table 4 provides a list of codes that emerged from the data relating to the marketing efforts during a premarket phase.

Table 4

A List of Emergent Codes for Marketing Efforts During the Premarket Phase in the Branded Prescription Medicine Segment

Codes	Participant INT1 Responses	Participant INT2 Responses	Participant INT3 Responses
Product	INT1: Discovery and development.	INT2: From discovery to development.	INT3: From discovery, through development phases.
Price	No price established.	No price established.	No price established.
Distribution	No distribution exists.		
Promotion	Planning of promotional activities.	Planning of promotional activities.	Planning of promotional activities.
Sales	No sales exist.		
Competition	INT1: Competition could be insignificant, or there might be other market entrants.	INT2: There could be little or no competition, or market could be already established.	INT3: Competition might exist.
Market	INT1: Research and determine the market.	INT2: Research on market needs, market opportunities, market positioning and segmentation.	
Marketing focus	INT1: Determine market size, characteristics, and competition.	INT2: Define marketing mix model, reimbursement models.	INT3: Determine marketing mix model.
Marketing strategy	INT1: Determine market size, characteristics, and competition.	INT2: Define marketing mix model in preparation for lunch, reimbursement models.	INT3: Determine marketing mix model.

Postmarket phase. The following phases emerged from the data: introduction phase, growth phase, maturity phase, and decline phase as shown in Figure 2.

Introduction phase. The following key terms emerged from the data: product, timing of market entry, price, customers, distribution, promotion, sales and market shares, market, competition, marketing focus and marketing strategy, and post product launch period. Camejo et al. (2013), and Matikainen et al. (2015) documented the following factors that influence the success of new product launch: order of market entry, marketing mix instruments (product, price, promotion, and distribution), sales, corporate culture, organization capabilities, market orientation, and customer relationship. Camejo et al. (2013) noted organizational leaders continuously include new products in their product portfolio and documented that the introduction of new drugs is needed because it increases the clinical effectiveness of the drugs within a specific therapeutic area over time.

Product. The following key terms emerged from the data: product attributes (quality, safety, and efficacy), patent protection, and product supply. Participants responded the launch strategy includes offering high quality, safe, and effective branded products to customers. Participants INT1 and INT2 discussed patent protection. Participant INT2 stated "the key is to offer unique innovative product that is patent protected, not a commodity." Participant INT1 stated "when branded drug enters the market, it is patent protected for number of years. That means that no one else can enter the market with the same product or indication offering until patent expiry." Participant INT1 expanded "there could be alternatives to the therapeutic treatment from other

brands or even generics." Participant INT1 listed product supply as an important factor of a launch strategy and reported "if we do not have product ready to supply at the time of regulatory approval, then we are losing revenues and underperform on the market." Findings aligned with the secondary data sources on product attributes, patent protection, and product supply.

Timing of market entry. Participants stated that marketing teams target the product launch at time of regulatory approval. Participants INT1 and INT3 stated any delay in regulatory approval delays launch, which might affect the market performance in terms of loses in market shares and sales, depending on the competition in the marketplace. Findings aligned with the secondary data sources that the timing of market entry might affect market performance in terms of sales and market shares. Participant INT2 added "marketing announces the product launch, prepares and publishes marketing materials, conducts sales training, distributes the product to targeted customers."

Price. Iacocca et al. (2013) documented that newer drugs were associated with higher prices. Participants reported price is high at time of launch. Participant INT1 reported "price incorporates the higher R&D costs, and the costs to manufacture the goods." Participant INT2 corroborated the participant INT1 response and stated "price is high to incorporate higher costs." Participants INT2 and INT3 reported after launch the marketing teams apply continuous price revisions and factors in the influence of the payers' groups and policies regarding reimbursement plans. Participant INT3 stated "strategic pricing changes start from introduction and continue throughout the life of the drug. Pricing strategies depend on the government policies, and there might be issues

with the reimbursement." Camejo et al. (2013) documented that drug prices are expected to decrease over time due to competition, while R&D costs increase.

Customers and distribution. Participants INT1 and INT2 listed the following customers: wholesale distributors, retail pharmacies, group purchasing organizations, hospitals, and the government. Participant INT1 reported that at time of launch the distribution is selective through ordering systems in place. Song and Han (2016) documented that the marketing instrument "place" is insignificant in the marketing of pharmaceuticals because of the market characteristics.

Promotion. Haughton et al. (2015) documented that new product introductions and innovations require substantial marketing efforts with emphasis on promotional instruments, such as detailing, and medical journal advertising. Participants reported at time of launch, the promotional expenditures are high and consist of multiple channels, such as detailing and samples, publications in medical journals, medical meetings, maintaining websites regarding product information, selective advertisement, targeting medical professionals or patients. Participant INT1 indicated "promotion is through sales representatives who reach out to physicians." Participant INT1 reported "we distribute samples and literature to physicians, we advertise our products in medical journals or television for certain products, then medical meetings, websites for key products including information on clinical trials, and so on." Participant INT2 reported "promotion includes providing rebates or discounts to hospitals, or retail pharmacies; maintaining educational websites to provide information to health care professionals or patients regarding certain products; and detailing and distributing samples to physicians."

Participant INT2 documented that detailing and sampling are "important part of the promotion strategy." Participant INT3 corroborated the participants INT 1 and INT2 responses and stated "we generate awareness through promotional activities using different channels- websites, sampling, etc." Findings aligned with the secondary data sources regarding the use of promotional instruments.

Sales and market shares. Participants reported that at time of launch and during introduction phase, sales and market shares are low due to the market not being familiar with the product and its benefits or uses. Participant INT2 added "we have the forecast established, however, we don't know if the drug is going to achieve commercial success." Participant INT1 added "profits are insignificant as well."

Market. Following key terms emerged from the data: market size and market characteristics. Participants indicated at time of launch and during introduction phase, the market is small, and the targeted audience is not familiar with the product, its uses, the effect, and the benefits. Participant INT1 stated "at the time of launch, when product receives regulatory approval, the product is not known to the market." Participant INT2 recorded "the market is small, targeted audience is not familiar with the product and its uses and effect." Participant INT3 corroborated the participants INT1 and INT2 responses and stated "the market is not familiar with the drug or its benefits." Participant INT1 added "uncertain if product will be accepted among the broader population and if it is going to achieve a commercial success."

Participants discussed the market characteristics. Participant INT1 stated:

> We operate in highly regulated and competitive markets. Many new drugs that we introduce to the market compete with other branded or generic medicines at some point of the drug life cycle (as early as at the point of the new drug introduction, or at the point of patent expiry).

Participant INT2 identified "the disease area, the criticality of the patients' illness, and the complexity of the product use" as factors that need to be considered when creating a launch strategy. Participant INT3 stated "the knowledge about the competition, the competitive landscape, and the marketplace needs to be included into the strategic decision making."

Competition. Participants reported the following scenarios regarding the competition in the marketplace at time of lunch: no competition, insignificant competition, or established market, depending on the launch product and the decease area. Participant INT1 stated "competition could be insignificant at this point. Or, there might be other market entrants already there." Participants INT1 and INT2 identified different scenarios regarding competition and market entry. Participant INT1 stated:

> We compete on the market based on product quality, safety, and efficacy. If a treatment is already available on the market for the same condition, then it might be difficult to maintain sales targets and market shares and differentiate from the competition.

Participant INT2 reported the existence of "little or no competition, or market could be already established." Participant INT2 stated:

> That's why the strategies are product specific and these strategies could be timely. What worked for a specific brand 5 years ago or 10 years ago might not be applicable any more due to the rapidly changing regulatory environment, the industry, and the competition.

Participant INT3 reported at time of launch "competition might exist." Findings aligned with the secondary data sources regarding the effects of competition.

Marketing focus and marketing strategy. Participants responded marketing focus and strategy during product launch and introduction phase is to increase product knowledge, generate product awareness through promotion, and establish a market (see Table 5). Participant INT1 reported "the marketing goal and strategy is to establish a market and generate awareness and interest for the product." Participant INT2 stated "the marketing focus is to increase the knowledge about the product attributes through multiple channels, such as web sites, social media, publications, product sampling and campaigns; increase the product usage and establish the market." Participant INT3 stated "we market branded drugs, so, the market is not familiar with the drug or its benefits. Marketing focus is on establishing the market and generating awareness through promotional activities using different channels- websites, sampling, etc."

Participants INT2 and INT3 emphasized the need for establishing brand strategy to differentiate in the marketplace. Participant INT2 stated "a need to establish powerful brand differentiation in a marketplace based on the product unique features, safety and efficacy." Participant INT3 reported that marketing teams "develop and communicate the brand vision and brand positioning."

Post product launch period. All participants reported that introduction phase could take number of years, and during first year post launch, marketing teams are still in introduction phase and in a process to establishing a market for the product, through generating awareness and promotional activities. Participant INT2 reported "introduction phase could take from 2 years to 4 years in an average." Participant INT2 reported "immediately post launch, we start monitoring the markets, the competitor moves, and the industry movement, apply price revisions, invest and improve promotional programs, and analyze product profit & loss, and its position in the company portfolio." Participant INT2 added "we start collecting, monitoring and analyzing patient complaints, and their experience from product usage; start the management of the product life cycle to optimize the life of the product and maximize the value and commercial potential."

Table 5 provides a list of codes that emerged from the data relating to the marketing efforts during an introduction phase.

Table 5

A List of Emergent Codes for Marketing Efforts During the Introduction Phase in the Branded Prescription Medicine Segment

Codes	Participant INT1 Responses	Participant INT2 Responses	Participant INT3 Responses
Product	INT1: Quality, safe, and efficient branded drugs.	INT2: Unique innovative product that is patent protected, not a commodity.	INT3: The launch of the product should be at the time of regulatory approval.
Price	INT1: High price.	INT2: Price is high.	INT3: Pricing strategies depend on the government policies.
Distribution	INT1: Selective.		
Promotion	INT1: High investment in promotion.	INT2: Investment in promotion.	INT3: Investment in promotion.
Sales	INT1: Low sales. Over time, more people are using the product.	INT2: Sales are low.	
Competition	INT1: Competition could be insignificant, or there might be other market entrants.	INT2: There could be little or no competition, or market could be already established.	INT3: Competition might exist.
Market	INT1: Highly regulated and competitive markets.	INT2: The market is small, targeted audience is not familiar with the product and its uses and effect.	INT3: The market is not familiar with the drug or its benefits.
Marketing focus	INT1: Establishing a market for the product though generating awareness.		INT3: Establishing the market and generating awareness.
Marketing strategy	INT1: Investment in promotional activities.	INT2: Establish a powerful brand differentiation.	INT3: Through promotional activities using different channels- websites, sampling, etc.

Growth phase. The following key terms emerged from the data: characteristics, promotion, and marketing focus and marketing strategy.

Characteristics. Participants described the following characteristics of the growth phase: increased and growing market because more people are using the product, formed brand preference, high price, increased sales, increased demand, increased profit, increased distribution, and increased product awareness (see Table 6). Participants INT1 and INT2 reported profits are high because of the increased sales, increasing demand, and high prices. Participant INT1 stated "distribution is increased because of the higher increased demand and sales." Participant INT2 emphasized the need for continuous price revisions and reported "if market is already established, there might be few new players in the marketplace; competition is increasing, which leads to price revisions and reductions." Participant INT3 reported growth phase is characterized with increased product consumption, increased competition, and implemented strategic price changes.

Promotion. Participants INT1 and INT3 discussed the need to continue investing in promotional activities. Participant INT1 reported "moderate investment in promotional and advertising mainly to increase brand preference and brand benefits, and allowing for word of mouth recommendations." Participant INT2 reported "product awareness is increasing". Participant INT3 reported:

> Marketing team could focus on brand loyalty through advertising and promoting the drug benefits and how the formulation works. The rationale is physicians are familiar with the drug. Despite the competition, campaigns like this could be rewarding. Post market, outcome studies are invaluable to prove and strengthen

marketing messages, and build trust in the product, hence, these studies could be very expensive, and might not be part of the R&D budget.

Marketing focus and marketing strategy. Participants INT1 and INT3 identified market penetration, market segmentation and brand preference as powerful strategies to increase the product consumption over time. Participant INT1 reported "the marketing strategy is focusing on market penetration and brand preference." Participant INT3 recorded "in growth phase, focus is on maximizing brand loyalty through scientific and clinical evidence." Participant INT3 expanded "if product is safe, effective, and convenient for the patient (for example, offering once daily or twice daily formulations), the interest in the product and consumption might increase over time." Participant INT3 added "if multiple formulations exist, LCM strategy could be maximizing market share through targeting different customers for selected formulations, in combination of different pricing strategies."

Table 6 provides a list of codes that emerged from the data relating to the marketing efforts during a growth phase.

Table 6

A List of Emergent Codes for Marketing Efforts During the Growth Phase in the Branded Prescription Medicine Segment

Codes	Participant INT1 Responses	Participant INT2 Responses	Participant INT3 Responses
Product	INT1: Product line extensions.	INT2: Add additional services and features.	INT3: Formulation expansions.
Price	INT1: Price revisions.	INT2: Price revisions and reductions.	INT3: Strategic price changes.
Distribution	INT1: Increased distribution.		
Promotion	INT1: Moderate investment in promotional and advertising.	INT2: Product awareness is increasing.	INT3: Advertising and promoting the drug benefits and how the formulation works.
Sales	INT1: More people are using the product, brand preference is formed.	INT2: More people are trying and using the innovator drug.	
Competition		INT2: Few new players in the marketplace.	INT3: Increasing competition.
Market	INT1: Market is increasing.	INT2: Market grows.	INT3: Increased consumption.
Marketing focus	INT1: Increase brand preference and brand benefits.	INT2: Brand diversification and differentiation.	INT3: Maximize brand loyalty through scientific and clinical evidence.
Marketing strategy	INT1: Market penetration and brand preference.	INT2: Monitor product performance and competitor moves, manage promotional activities.	INT3: Increase market presence and enter into new market segments.

Maturity phase. The following key terms emerged from the data: characteristics, marketing focus and marketing strategy, and collaboration.

Characteristics. Participants described the following characteristics of the maturity phase: established market, peak in sales and market shares, increased distribution, continuous price revisions, high competition, lower profit margins, and increased product awareness (see Table 7). Participants INT1 and INT2 emphasized the need for price revisions. Participant INT1 stated "in a mature phase, price revisions are required due to the high competition to maintain sales or growth." Participant INT2 stated "profits remain the same or decline." Participant INT1 reported "investment in advertising and promotion is moderate since most people are aware of the brand benefits and product characteristics." Participant INT1 added "publication strategy is effective tool to demonstrate clinical superiority but timely and might not be usable within a year or two due to changing regulatory environment."

Marketing focus and marketing strategy. Participant INT1 reported "in maturity phase, the goal is to maximize the commercial value, increase the patients' usage, defend market share, maximize profits, and extend the life of the product." Participant INT2 reported "the marketing goal is to maximize the value of the product and define successful strategies to defend the product value from new competitors." Participant INT3 reported the marketing focus is to "increase the market presence and enter into new market segments."

Participants identified the following strategies during maturity or growth phase: product innovations in the forms of line extensions, reformulations and repositioning,

packaging innovations, pricing strategies, maximizing brand loyalty through promotional activities, entering into licensing agreements with other pharmaceutical companies, etc. Product line extensions and reformulations included introducing new dosage forms (for example, liquids), added safety features, introducing new indications, reformulations to improve dosing, extended release formulations, and fixed dose formulations. Repositioning strategies included finding new uses of existing drugs and entering new markets. Participant INT1 stated "new market penetration could be entering new markets for new uses or entering into emerging markets internationally." Packaging innovations included co-packaging with complementary drugs. Pricing strategies included applying price revisions and strategic pricing.

Participant INT2 added "a need of brand diversification and differentiation to maintain or increase market share." Participant INT3 added "each line extension or reformulation might require unique approach, management, and execution." Findings aligned with the secondary data sources that the strategic activities during maturity phase included innovation strategies.

Participants reported these strategic activities could start as early as the launch phase, or during growth phase. Participants INT1 and INT3 reported the investments in line extensions and reformulations are highest in maturity phase. Participant INT3 stated "activities around formulation expansions, such as introducing different forms, dosages, or new improved technologies to meet the unmet market needs might happen right after the product is introduced to the market, and it might take years to develop."

Collaboration. The participants emphasized the importance of collaboration with other departments and the existence of cross-functional teams to establish product strategies. Participant INT2 reported:

> These strategies are not solely marketing strategies; they are company strategies where various groups are involved into the decision making. Marketing is focused on ensuring a mutually agreed strategy is implemented in the marketplace through strong collaboration with the sales force and the customers, monitor product performance and competitor moves, leverage product portfolio, price revisions, manage promotional activities targeting healthcare professionals and patients, collaboration with R&D and regulatory to ensure compliance and obtaining all necessary approvals, and so on.

Participant INT3 corroborated the participant INT2 response and reported "line extensions and reformulations are "R&D activities, hence a powerful LCM strategy to increase market presence and enter into new market segments during growth or maturity phase."

Table 7 provides a list of codes that emerged from the data relating to the marketing efforts during a maturity phase.

Table 7

A List of Emergent Codes for Marketing Efforts During the Maturity Phase in the Branded Prescription Medicine Segment

Codes	Participant INT1 Responses	Participant INT2 Responses	Participant INT3 Responses
Product	INT1: Add new features.	INT2: Introduce new indications, new dosage forms, new package forms, reformulations.	INT3: Product line extensions.
Price	INT1: Price revisions.	INT2: Price revisions and reductions.	INT3: Strategic price changes.
Promotion	INT1: Publication strategy is effective tool to demonstrate clinical superiority but timely.	INT2: People are well aware of the drug.	
Sales	INT1: Maintain sales.	INT2: Sales volume peaks.	INT3: Peak in sales.
Competition	INT1: The competition is high.	INT2: Competition is increasing.	
Market	INT1: Established market.	INT2: Market is saturated.	INT3: Established market.
Marketing focus	INT1: Maximize the commercial value, increase the patients' usage, defend market share, maximize profits, and extend the life of the product.	INT2: Maximize the value of the product.	INT3: Increase market presence and enter into new market segments.
Marketing strategy	INT1: Introducing new dosage forms, added safety features, new indications, product repositioning strategies.	INT2: Reimbursement support, product line extensions and reformulations, entering into licensing agreements.	INT3: Investment in line extensions and reformulations.

Decline phase. The following key terms emerged from the data: characteristics, marketing focus and marketing strategy, and exceptions.

Characteristics. Participants described the following characteristics of the decline phase: preparations to phase out the product, rapid decline in sales, market shares, profits, and revenues at time of patent expiry when generics enter the market, minimum investment in promotional activities, minimum expenditures to phase out the product (see Table 8). Findings aligned with the secondary data sources on the characteristics of the decline phase. Participant INT2 reported "at the point of patent expiry generic drugs enter the market and the brand sales might decline up to 80% or even 90%." Participant INT2 added "in most of the cases, sales, revenues, and market shares decline rapidly immediately or in few months following generic launch. This depends on the number of competitors." Participant INT2 reported "price might remain the same, or lower to a certain extent, but not to the level of the generic drug price. There might be consumers out there who are price insensitive and loyal to the brand."

Marketing focus and marketing strategy. Participant INT1 identified the following strategies: adding new features, decision whether to discontinue the product or not, strategies to reduce costs, and strategies to extend the life of the product by extending the patent after patent expiry. Participant INT3 added common LCM strategy is to protect critical customers and exit unprofitable segments." Participant INT2 supported the participant INT1 response regarding strategic activities to extend the life of the product beyond patent expiry. Participant INT3 corroborated the participants INT1 and INT2 responses on product life extension beyond patent expiry and added "this

works well if the product is complex enough and difficult to establish bioequivalence." Participant INT3 listed the following strategies that could be applied to extend the product life after patent expiry: co-packaging with other branded drugs to address unmet patient needs and launch of authorized generics.

Table 8 provides a list of codes that emerged from the data relating to the marketing efforts during a decline phase.

Table 8

A List of Emergent Codes for Marketing Efforts During the Decline Phase in the Branded Prescription Medicine Segment

Codes	Participant INT1 Responses	Participant INT2 Responses	Participant INT3 Responses
Product	INT1: Add new features, product phase out.	INT2: Add new features, product phase out.	INT3: Product phase out.
Price	INT1: Price revisions.	INT2: Price revisions and reductions.	INT3: Strategic price changes.
Distribution	INT3: Increased distribution.		
Promotion	INT1: Promotional activities are minimal.		
Sales	INT1: Sales declines rapidly at time of patent expiry.	INT2: The brand sales might decline up to 80% or even 90%.	INT3: Sales drop rapidly.
Competition	INT1: High competition.	INT2: High competition.	INT3: Competition is high.
Market	INT1: Competition from generics.	INT2: At the point of patent expiry generic drugs enter the market.	INT3: Generics enter and take over the market.
Marketing focus	INT1: Decision whether to discontinue the product, or not.	INT2: Product phase out, drug life extensions.	INT3: Phasing out the product.
Marketing strategy	INT1: Phase out strategies.	INT2: Phase out strategies, drug life extension strategies.	INT3: Drug life extension strategies and exit unprofitable segments.

Exceptions. Participants reported not all products follow the life cycle curve and go through all of the phases. Participant INT2 reported:

> Some products might never increase a certain market share, or might experience second launch if new uses, indications, or dosage forms prove to be more effective than the initial ones. For some products it might take many years before commercial success. The disease area, the criticality of the patients' illness, the complexity of the product use, could be important factors for achieving commercial success. If product is complicated to use, then highly likely it will achieve limited commercial success.

Participant INT3 reported "one product might not go through all phases of the life cycle, but, on a high level, most drugs follow introduction phase, growth, maturity, and decline phase." Mullins et al. (2010) documented that some products do not follow the life cycle curve because of multiple factors.

Theme 3: Factors Influencing the Decision-Making Process

The third main theme was factors influencing the decision-making process. This theme included the following subthemes: (a) factors associated with market share, revenue generation, and profitability, (b) challenges and factors influencing the current models of product portfolio mix, and (c) key success factors to fight competition (Table 9).

Table 9 provides a list of initial codes developed from the interview questions relating to factors influencing the decision-making processes.

Table 9

A List of Emergent Codes for Factors Influencing the Decision-Making Processes

Subtheme	Key Term	Emergent Code
(a) Factors associated with market share, revenue generation, and profitability	Influencing factors	(a) The market size and market characteristics, (b) the competition, (c) the company product portfolio mix, (d) the product life cycle management strategies, and (e) the insurance preferences for therapeutically comparable drugs
(b) Factors influencing product portfolio mix models	Influencing factors	(a) The product attributes (b) the product portfolio mix (c) the life cycle stage of each product, (d) price, (e) sales revenues, (f) profitability, (g) ability to produce/manufacture, (h) continuous product supply, (i) the market access, (j) the market dynamics, (k) new market development and new clinical data, (l) the competition, and (m) the regulatory environment.
	Managerial implications and challenges	(a) Loss of market exclusivity and patent expirations, (b) product safety concerns, (c) pricing strategies,(d) competition from other branded medicines, biotech, and generics, (e) paragraph IV challenges, (f) third party reliance, (g) manufacturing difficulties and commodity shortages, (h) increasing costs for R&D and commercialization, (i) health insurance coverages and reimbursement plans, (j) high level of uncertainty in research and development and uncertainty in commercialization, (k) the ability to develop the right LCM and marketing strategy, and (l) strategy execution and implementation.
(c) Key success factors to fight competition	Influencing factors	(a) Offering effective, safe, and high quality products, (b) timing of market entry, (c) price, (d) continuous product supply, (e) investment in research and development, (f) continuous introduction of new product launches, and (g) innovation.

Factors associated with market share, revenue generation, and profitability. The following factors emerged from the data: (a) the market size and market characteristics, (b) the competition, (c) the company product portfolio mix, (d) the product life cycle management strategies, and (e) the insurance preferences for therapeutically comparable drugs (see Table 5).

Market and competition. Participant INT1 elaborated "the market characteristics include the disease characteristics, therapeutic treatments available, and the competition": Participant INT1 indicated the importance of identifying the number of competitors and the type of competition- branded medicines, or generics competition. Participant INT1 added: "when generics enter the market, then we are facing rapid declines in revenues." Participant INT2 reported:

> If the market is saturated and there are generics or other branded drugs that are therapeutically comparable, then the sales, market shares and the profits are lower. If the company is innovator and no one else is out there on the market, then sales, profits and market shares are usually higher, but this again depends on the market size and where the product in the life cycle is.

Findings aligned with the secondary data sources regarding the market characteristics and the effects of competition. Hunt (2015) and Kozlenkova et al. (2014) documented that the competition influences the strategy formulation.

Relationship between decisions on determining a marketing strategy and the effects on market share, revenue generation, and profitability. The following theme categories emerged from the data: (a) optimization of life cycle management strategies

and marketing mix strategies and programs, (b) investment in promotion and direct-to-consumer advertising, and (c) competition.

Optimization of life cycle management strategies and marketing mix strategies and programs. Participant INT1 responded "implementing the right marketing mix and strategy at the right time during the product life cycle while considering the company portfolio mix is the key to success." Participant INT3 corroborated this statement and responded "optimizing the company's product portfolio mix, applying different LCM strategies at different life cycle stages to maximize the value of the drug." Dauksevičiute and Simkin (2015), Ruiz-Conde et al. (2014), and Song and Han (2016) documented that different marketing programs differ in their effectiveness and recommended resource allocation model for optimal mix. Kumar et al. (2017) also discussed resource allocation in marketing variables during product life cycle as a result of the timely effectiveness of the marketing efforts.

Investment in promotion and direct to consumer advertising. Participant INT1 responded "investment in promotional and direct to consumer advertising during launch and growth phase means higher promotional expenditures and lower profit margins, but in the long run, this pays off in achieving future sales at a later time." Participant INT1 added "this investment in marketing expenditures in not needed during decline phase." Participant INT2 explained:

> You invest in promotion and direct to consumer advertisement to raise awareness and introduce the unique product to the market at a competitive price, then convince the audience on the effectiveness with clinical studies from patient

> usage. In a meantime, you work with payers on reimbursement plans to ensure patient coverages. If you did a good job, sales will increase over time and with that, revenues generated from the sales, along with the market shares and profitability during the life of the drug.

Participants INT3 supported participants INT1 and IT2 and stated "at the time of introduction the company does not make profit because of the higher R&D and promotional costs, but that is expected. Market shares, sales, and profitability are realized years later when market is established." Ruiz-Conde et al. (2014) documented that increased investment in marketing activities directed to the physician in the first 12 months after new product introduction to increase the trial rate, and decline in spend during maturity stage and increase of return on investment.

Competition. Participants responded that existing competition in the marketplace meant lower profits and lower market shares. Participant INT1 responded "competitive pricing is the key" if competition existed in the marketplace. Participant INT2 added:

> A competitor enters the market with a new treatment, branded drug that has proven to be more effective than ours. If this occurs, then we need to review the pricing and possibly reduce the price, but we will face loss in market shares and decreased sales.

Findings aligned with the secondary data sources on the effects of competition.

Challenges and factors influencing the current models of product portfolio mix. The following subthemes emerged: influencing factors, implications, and challenges (see Table 9).

Factors influencing the current models of product portfolio mix. The following factors emerged from the data: (a) the product attributes (quality, safety and efficacy), (b) the company product portfolio mix of existing products and the portfolio mix of prospective molecules in development stages, (c) the life cycle stage of each product within the portfolio mix, (d) price, (e) sales of existing products and the projected sales from prospective development products, (f) profitability, (g) ability to produce/manufacture, (h) continuous product supply, (i) the market access, (j) the market dynamics, (k) new market development and new clinical data, (l) the competition, and (m) the regulatory environment. Participant INT1 listed the following factors:

> The product portfolio mix of commercialized products and the mix of prospective products in development stages, the quality and the safety of our products, the projected sales from each molecule in the pipeline, the competition and the market dynamics, the regulatory environment, new clinical data, the market access, the ability to produce highly complex products and continuously supply to the market without interruptions, and the price.

Participant INT2 listed "the product attributes: product quality, safety and efficacy; product portfolio mix and the portfolio of new products, the competition within each therapy class, then price, sales and profitability, and capability to manufacture." Participant INT3 was in alignment with participants INT1 and INT2 and listed the following influencing factors:

> Ability to continuously supply quality and safe products, the competition within each market/therapy class, new market developments and new clinical data, the

life cycle stage of each product within the portfolio mix and molecules in development pipeline, their profitability, price, and market access.

Findings were mostly in line with the secondary data sources and agree to a certain extent on the factors influencing the product portfolio mix.

Kanitz and Burmann (2012) documented the importance of having robust brand drug portfolio on different levels, such as- product line level, therapeutic category level, or corporate brand level, and opportunities for product differentiation in the marketplace within each level. Pramod et al. (2016) discussed the importance of project and product portfolio performance in early phases of development drugs. Similarly, Gascón, Lozano, Ponte, and de la Fuente (2017) discussed the importance of having a robust portfolio during research and development phase driven by organizational strategies and documented that the investment in research and development might require reallocation of resources.

Managerial implications and challenges. The following managerial implications and challenges emerged from the data: (a) loss of market exclusivity and patent expirations, (b) product safety concerns, (c) pricing strategies, (d) competition from other branded medicines, biotech, and generics, (e) paragraph IV challenges, (f) third party reliance, (g) manufacturing difficulties and commodity shortages, (h) increasing costs for R&D and commercialization, (i) health insurance coverages and reimbursement plans, (j) high level of uncertainty in research and development of new molecules and uncertainty in commercialization, (k) the ability to develop the right LCM and marketing strategy,

and (l) strategy execution and implementation (see Table 9). Findings aligned with the secondary data sources related to risk factors.

Loss of market exclusivity and patent expirations. Participant INT1 stated "most of our products are patent protected and our revenues and sales depend on their commercial success on the market. When patents expire, sales and revenues generated from those products decline." Participant INT2 reported:

> A number of products in our pipeline are facing loss of patent protection or have already lost patent protection. With that, we are facing fierce competition from the generics that are about to enter the market or have already entered the market. For us this means rapid decline in market share and revenues, and loss of market exclusivity.

Findings aligned with the secondary data sources regarding the patent protection and the exclusivity period.

Product safety concerns. Participants identified product safety concerns as a factor influencing product sales, market positioning, and portfolio positioning. Findings aligned with the secondary data sources regarding the effect of product safety concerns on product sales. Participants documented that marketing teams use the post clinical tests on safety and efficacy to better understand the product market positioning. Participants INT1 and INT2 discussed and explained the safety concerns.

Participant INT1 reported: over time, more people are using the product, so, our medical and regulatory teams are conducting post clinical tests from product consumptions on the safety and efficacy." Participant INT2 corroborated participant

INT1 response and stated “clinical trials are usually focused on smaller group of people for a specific period of time. After product launch, more patients start using the product, and some unexpected safety issues might occur.” Participant INT2 added “a medical team and other experts deal with these kinds of issues and make decisions about next steps.” Findings aligned with the secondary data sources regarding post clinical trials.

Participant INT1 reported a product safety concern “could significantly impact the product sales, and the positioning of the brand in the company’s portfolio. Participant INT2 corroborated the participant INT1 response and stated that product safety concerns “could have serious impact on the sales, or even narrowing down the target market. Participant INT2 added ”for us in marketing, it is important to know what is happening with the product from a quality and safety perspective to understand better the market position.”

Participants documented that brand manufacturers use labeling change, which is a change of the package insert, to update information on new safety and efficacy data. Participants reported the labeling contains information on the product safety and efficacy, and is used as a guide for promotional activities. Findings aligned with the secondary data sources regarding the use of labeling changes.

Pricing strategies. Participants emphasized the need for continuous price revisions during various stages of product life cycle. Findings aligned with the secondary data sources on the pricing strategies related to the need for continuous price revisions. Participant INT2 stated “pricing strategies are more important in situations when competition from other branded therapeutically comparable drugs exists within a therapy

class." Participants INT1 and INT3 were in alignment with participant INT2 that competition highly affected the price.

Competition from other branded medicines, biotech, and generics. Participants discussed the effect of competition from other branded medicines, and generics. Participants reported that the competition from the generics is highest at time of patent expiry, when generics enter and take over the market, hence market shares and brand drop rapidly. Participant INT2 reported:

> Generic drugs are lower cost alternatives to the brand due to the lower R&D costs, and coupled with the insurance and government initiatives to lower healthcare costs by stimulating the use of generic drugs over the brand are major drivers for the rapid decline in sales and market shares of branded drugs.

Findings aligned with the secondary data sources on the effects of competition from other branded medicines, biotech, and generic medicines. Costa-Font et al. (2014), Hartman et al. (2015), and Moe-Byrne et al. (2014) documented that generic drugs are low cost alternatives to brand drugs that offer opportunities to the health care insurance organizations and governments to reduce the health care costs.

Paragraph IV challenges. Participant INT2 explained the Paragraph IV challenges and reported:

> Generics might enter the market earlier than the patent expiration date. This is done through patent challenges or Paragraph IV certifications. In this scenario, generic manufacturer files ANDA challenging one or more patents of the innovator branded drug with an allegation that patents might be invalid or

expired. The branded manufacturer then files a lawsuit to defend the patents. The brand manufacturer could defeat the challenge and continue with market exclusivity until patent expiration date, or could lose the challenge, allowing for generic manufacturers to enter the market early prior to patent expiration date.

Findings aligned with the secondary data sources on the paragraph IV challenges. Branstetter et al. (2016), Grabowski et al. (2014), and Grabowski et al. (2016) discussed Paragraph IV challenges and documented that under Paragraph IV, generic entry is allowed in the marketplace before patent expiry. Branstetter et al. explained in detail the Paragraph certifications options for generic manufacturers and the filing process.

Third party reliance. Participants responded that organizations engage in partnership and collaboration with other research organizations, pharmaceutical companies, or health care institutions to co-develop, co-promote products, outsourcing agreements, alliances, and so on. Participant INT1 stated "our third parties, such as suppliers, alliances, or distributors might not perform to the level they are contractually obligated to, and failure to do so might jeopardize our business performance or brand image." Findings aligned with the secondary data sources regarding the collaboration with third parties.

Manufacturing difficulties and commodity shortages. Participants responded difficulties with manufacturing and commodity supply could lead to interruptions in product supply to customers and inability to meet the demand for a specific product. Participant INT1 reported "continuous product supply after launch is of critical importance. Delays in manufacturing and supply at the time of regulatory approval might

cause adverse effects like losing revenues and underperforming on the market." Participant INT2 added "there could be number of reasons for manufacturing issues: technical, or shortages in raw materials or other commodities needed to manufacture the drug coupled with long lead times." Findings aligned with the secondary data sources regarding the importance of continuous product supply and the effects of manufacturing difficulties or commodity shortages. Kozlenkova et al. (2014) and Thomas et al. (2015) documented manufacturing capability as an organizational competitive capability that affects market performance.

Health insurance coverages and reimbursement plans. Participants responded that drug manufacturers compete for formulary placement. Findings aligned with the secondary data sources regarding the effects of government regulations and reimbursement programs. Participant INT2 reported "health care insurance organizations provide coverage and reimbursement plans to patients for a specific condition under the plan's formulary." Participnat INT2 documented "when multiple drugs therapeutically comparable for a specific decease exist, higher out of pocket costs could lead to reduced used of a drug." Participant INT2 added "the government and payer groups play important role in establishing reimbursement programs for prospective consumers, pricing, and patient access to our drugs." Lee et al. (2015) and Rémuzat et al. (2017) discussed the effects of government regulations and reimbursement plans on pricing.

High level of uncertainty in research and development of new molecules and uncertainty in commercialization. Participants documented high levels of uncertainty in research and development of new molecules and uncertainty in commercialization.

Findings aligned with the secondary data sources that organizations face high levels of uncertainty during development. Kakkar (2015) and Shabaninejad et al. (2014) discussed the levels of uncertainty during drug development.

Participants INT1 and INT3 discussed uncertainty in research and development of new molecules, and during commercialization. Participant INT3 stated "a lot of prospective molecules fail during earlier stages of development, prior to reaching regulatory approval." Participant INT3 also stated uncertainty in receiving regulatory approval: "a number of factors affect the timing of regulatory approval, such as time needed for the agency to evaluate the submitted date, the decease, the complexity of data, and so on." Participant INT1 reported: t is difficult to predict if new products in the pipeline will generate sales volumes to the extent other established products did, and for us, we need to be able to make up the lost revenues from new launches."

Effectiveness of life cycle management programs and marketing strategies. Participants reported that development and implementation of effective life cycle management strategies are product specific, with a goal is to maximize the life of the product, its value and market share. Participant INT1 identified the ability to develop effective life cycle management programs and marketing strategies as a factor influencing the current management of portfolio mix. Kozlenkova et al. (2014) and Sabatier et al. (2012) discussed business models, and organizational competencies, and documented that determination of a marketing strategy depends on organizations' capabilities, priorities, and opportunities. Participant INT3 reported:

> For life cycle decisions, one needs to consider the existing drug portfolio, determine the strategic position of each drug, how important the drug is in the portfolio or the therapy class, and start from there. There might be a need to withdraw a drug due to prioritization of another drug.

Findings aligned with the secondary data sources regarding the effects of the product life cycle management programs.

Strategy execution and implementation. Möller and Parvinen (2015) documented a gap in the research of marketing focusing on the theory implementation to practice and the effectiveness of the strategy execution. Möller and Parvinen asserted successful implementation of marketing strategies leads to superior returns. Möller and Parvinen identified the level of complexity as an influencing factor on managerial decisions and practices. Möller and Parvinen documented the following drivers of implementation complexity in marketing: (a) the characteristics of the implementation target, (b) the degree of inter-organizational cooperation, (c) uniqueness versus repetitiveness, (d) the level of embeddedness, (e) the newness of the innovation, and (f) the pace of implementation.

Participants emphasized the need of successful implementation of a marketing strategy. Participant INT 1 identified the ability to execute a marketing strategy as a factor influencing the results in the marketplace and stated “how a strategy is executed depends on company’s internal capability, personnel knowledge, leadership support, and strategy alignment with the business strategy.” Participant INT2 reported “marketing is

focused on ensuring a mutually agreed strategy is implemented in the market place through strong collaboration with the sales force and the customers."

Key success factors to fight competition. The following key success factors emerged from the data: (a) offering effective, safe, and high quality products, (b) timing of market entry, (c) price, (d) continuous product supply, (e) investment in research and development, (f) continuous introduction of new product launches, and (g) innovation. Participant INT1 stated "making effective, safe, and convenient drugs, timing of new product launches, price, and continuous supply of our existing products to our customers." Participant INT2 corroborated the participant INT1 response and stated "offering safe and high quality products to our customers, timing of market entry, and price." Participant INT2 added additional key success factors ad stated "investment in research and development function, and continuous introduction of new innovative products." Participant INT3 corroborated participants INT1 and INT2 responses and stated "making high quality, safe and effective products." INT3 also listed "timing of regulatory approvals and new product launches" as key success factors. Findings aligned with the secondary data sources on the key success factors to fight competition.

Pronker, Weenen, Commandeur, Claassen, and Osterhaus (2015) identified the following factors: (a) safety, (b) efficacy, (c) quality, (d) costs of goods sold, (e) regulatory environment, (f) intellectual property, (g) commercial, such as channels of communication and distribution, (h) risk management, (i) innovation, and (j) feasibility. Camejo et al. (2013) and Matikainen et al. (2015) emphasized the importance of continuous introduction of new product launches, investment in innovation and research

and development. DiMasi, Grabowski, and Hansen (2016) also emphasized the importance of investment in innovation and research and development of new drugs.

Theme 4: Strategic Activities in Executing Business Strategies

The forth main theme was strategic activities in executing business strategies. Two subthemes emerged from the interview questions: strategic activities in executing business strategies, and alignment of marketing programs with corporate and business strategies (see Table 10).

Table 10 provides a list of initial codes developed from the interview questions relating to strategic activities in executing business strategies.

Table 10

A List of Emergent Codes for Strategic Activities in Executing Business Strategies

Theme	Key Terms	Participants' Responses
Strategic activities	Innovation and diversification	INT1: Continuous introduction of new innovative products to the market is the key of long term success. INT1: Line extensions, reformulations, and finding new uses of our existing products, effective product lifecycle management strategies to maximize the value of each product and the company portfolio. INT2: Launch of new drugs, maintaining wide portfolio mix of products, finding new uses, reformulations and line extensions, launch of authorized generics, biosimilars or switching to over the counter medicines where can be done.
	Collaboration with third parties	INT1: We enter into alliances with other pharmaceutical companies to commercialize certain products, research and develop innovative drugs, outsource manufacturing. INT2: Partnering with third parties to co-develop, or co-market new drugs, or conduct clinical trials. INT3: Partnering and collaborating with other organizations to co-develop or co-promote products, conduct clinical trials.
Alignment of marketing programs	Alignment of marketing programs	INT1: Our marketing strategies need to be defined in a way to support the corporate strategies, goals and objectives. INT3: Our strategic marketing programs need to carry out the corporate strategic programs and objectives. INT2: Through cross-functional teams where we discuss launch strategies and priorities, and commercial planning.

Strategic activities in executing business strategies. Strategic activities included innovation and diversification strategies, and collaboration with third parties. Participants INT1 and INT2 reported the following strategic activities: (a) innovation in the forms of new product launches, line extensions of existing products through reformulations to

improve dosing or introduce new forms, or find new uses, or technological advances (b) implementation of effective product life cycle management strategies to maximize the value of each product, (c) maintaining wide company portfolio mix of products, (d) launch of authorized generics, (e) biosimilars, (f) switching to over the counter medicines where can be done, (h) decisions whether to discontinue product, (g) forming alliances, (h) acquisitions, (i) partnering with third parties to co-develop, or co-market new drugs, and (j) outsourcing agreements (i.e. manufacturing). Participant INT2 added: (a) collaboration with third parties to perform clinical trials and (b) international market expansion. Participant INT3 corroborated the participants INT1 and INT2 responses and discussed the partnership and collaboration with other research organizations, pharmaceutical companies, or health care institutions to co-develop, co-promote products, or conduct clinical trials.

Findings aligned with the secondary data sources that the strategic activities included innovation strategies and collaboration with third parties. Sabatier et al. (2012) discussed these strategies as a way to extend the commercial life of the products and remain competitive in the marketplace. Song and Han (2016) documented the following strategies that organizational leaders that market brand name medicines could employ to extend the commercial life of a drug and retain market shares: (a) extension of patent protection through legal measures, (b) product innovations, such as product line extensions, introduction of new indications, introduction of follow-on drugs, (c) switches from prescription to over-the-counter drugs, (d) launch of authorized branded generics, (e) selling or licensing the drug before patent expiry to a generic manufacturer, and (f)

pricing strategies, marketing campaigns, promotion, and cost reduction initiatives of existing drugs.

Innovation and diversification. Participants reported innovation as an important strategic activity, and documented that innovation could take different forms, such as introductions of new products, line extensions of existing products through reformulations to improve dosing or introduce new forms, or find new uses, or technological advances. Findings aligned with the secondary data sources regarding innovation. Barei et al. (2015) documented re-innovation through improvement of existing product attributes, introduction of new configurations, and using new technology to produce new innovative products as strategic activities in executing business strategies. Ambrammal and Sharma (2015), Barei at al. (2015), Dubois et al. (2015), Park et al. (2014), Spieth and Schneider (2016), Sternitzke (2014), and Khanna et al. (2016) discussed different types of innovation, and documented that innovation is critical in obtaining a competitive advantage in the marketplace. Barrales-Molina et al. (2014) discussed the importance of investing in R&D capabilities and innovation.

Participants emphasized the importance of new product launches. Participant INT1 indicated "continuous introduction of new innovative products to the market is the key to long term success." Findings aligned with the secondary data sources regarding the importance of new product introductions. Chang et al. (2014) documented that organizational ability to successfully develop and introduce new products to the market is critical determinant of organizational performance. Rusu et al. (2011) emphasized the

importance of the pipeline management strategies that include continuous introduction of new compounds, and timing of market entry.

Collaboration with third parties as an effective business strategy. Participants responded that organizations collaborate and create partnerships with other research organizations, pharmaceutical companies, or health care institutions to co-develop, or co-promote products; conduct clinical trials; create outsourcing agreements; form alliances, etc. Findings aligned with the secondary data sources regarding the importance of collaboration with third parties. Liu et al. (2016) and Rusu et al. (2011) documented that strategic partnerships with other organizations in the area of marketing, research and development, or manufacturing drive innovation and strengthen business strategies. Love, Roper, and Vahter (2014) documented that openness to external knowledge or partners in new product development drives innovation.

Spithoven and Teirlinck (2015) focused on R&D outsourcing and documented that internal capabilities combined with outsourcing R&D activities help organizations to remain competitive in the marketplace, or to achieve competitiveness. Gascón et al. (2017) provided a model to measure the efficiency of drug development function within an organization. Gascón et al. indicated organizational leaders could use this model to determine whether the research and development function for a specific drug needs to be insourced or outsourced. Sabatier et al. (2012) and Vidal and Mitchell (2018) documented that strategic alliances and networks are necessary for product innovation.

Alignment of marketing programs with corporate and business strategies. Participants INT1 and INT3 indicated the marketing programs need to be defined in a

way to include the corporate strategies, goals, and objectives. Mullins et al. (2010) documented that an organization is likely to achieve superior revenue growth, market share, and profitability when its competitive strategy is aligned with its marketing program. All participants stated that this is done through a strong collaboration between departments and cross-functional teams.

Participant INT2 explained that the cross-functional teams meet to "discuss launch strategies and priorities, and commercial planning." Participants INT2 and INT3 provided examples of representations of cross-functional teams and mentioned: research and development, marketing, sales, manufacturing/operations, regulatory, supply chain, project management for new product launches, finance and other business units or teams. Eng and Ozdemir (2014) and Herhausen (2016) documented the need for cross-functional teams between research and development and marketing to achieve higher market and technical performance in the marketplace, and launch new products in a timely manner. Paich et al. (2011) documented that cross-functional teams are essential to effective strategic decision making, marketing initiatives, and resource allocation.

Conceptual Framework and Research Findings

The conceptual frameworks I used in the study were the general systems theory and the evolutionary systems theory. Bertalanffy (1972) developed the general systems theory and used the theory to explain the interconnectivity among the departments within an organization and its environment. The participants' responses were in alignment with the general systems theory regarding the interconnectivity among the marketing department with other departments within the organization to execute business strategies,

its environment, and the collaboration with third parties to drive innovation. The interrelationship between the marketing unit and other units, such as research and development included providing management with timely information and marketing plans, programs, and strategies for making critical business decisions. The findings included fostering cross-functional collaborations between marketing and other functional areas, such as research and development, regulatory, finance, operations, supply chain, etc., and fostering business-to-business relationships with third parties to co-develop or co-promote products, outsource manufacturing or R&D functions, or form strategic alliances.

Laszlo and Laszlo (1997) developed the evolutionary systems theory and used this theory to explain the dynamics, the evolution, and the coevolution of complex systems. The product life cycle model was drawn from the concept of the evolutionary systems theory. The participants' responses were in alignment with the evolutionary systems theory regarding the product life cycle model. Participants described the product life cycle model where the product goes through the life stages from the idea generation, to development phases, then market introduction, followed by commercialization and maintenance through growth, maturity, and decline phases, until patent expiry. In each phase, the primary focus of a marketing strategy was to effectively allocate and coordinate marketing resources and activities within a specific product-market to maintain market competitiveness and accomplish company goals.

The research findings yielded four main themes and additional subtheme elements within each theme that linked and expanded the conceptual framework for both theories

through the in-depth analysis of the interview responses and the literature on conceptual framework. Klag and Langley (2013) discussed the conceptual gap in qualitative research and documented the importance of the movement from the mass of words and other data through analysis to meaningful concepts, relations, and explanations. The identification of the emergent themes and subthemes and their relationship, as well as the patterns was critical in analyzing their meaning and how they relate to the development and implementation of marketing strategies and programs during various stages of product life cycle.

Literature Review and Research Findings

This subsection included an analysis in what ways the research findings confirm, disconfirm, or extend the knowledge in the area of marketing strategy development and implementation within the pharmaceutical industry. I compared and contrasted the study findings with the literature. In summary, the research findings did not entirely align with the literature. While the findings included a synthesis of numerous management activities as outlined in the literature, the results from the study extended the insights into the management of marketing of pharmaceuticals.

Marketing function. This first main theme included the following key emergent categories: marketing activities, product positioning, branding, product life cycle programs, pricing, competition and market, sales, planning of promotional activities, and forecasting. While the study findings and the literature were in line with participants' responses on marketing as a function, the participants' responses revealed new insights in rich details in the area of marketing as a function specific to the pharmaceutical industry.

The participants' responses added to the literature findings in the area of pharmaceutical marketing and product life cycle management.

Marketing activity. This emergent category provided insights into pharmaceutical marketing as a function. The research findings revealed marketing teams are involved in management of marketing activities for development products, new product launches, and commercial products. The participants identified these marketing activities: conducting market research, developing forecasts, researching market opportunities, market positioning and segmentation, establishing target market shares and sales goals, selecting customers, defining launch plans for new products, competitor analysis, defining reimbursement models, product positioning, branding, developing pricing models, product life cycle planning and management, and defining marketing mix models (product, price, promotion and place) for new and existing products.

Kumar (2015), Mullins et al. (2010), and Olson et al. (2018) discussed marketing as a function and provided an overview of the evolution of marketing. Möller and Parvinen (2015) discussed the concepts of business to business marketing and marketing research. Song and Han (2016) discussed marketing instruments (product, price, place, and promotion) in the pharmaceutical industry. Payne and Frow (2017) discussed relationship marketing in the pharmaceutical industry and focused on marketing capabilities. Nätti et al. (2014) discussed the market sensing and customer linking capabilities in the pharmaceutical industry. Stros and Lee (2015) contributed to the area of pharmaceutical marketing and identified order of market entry, price, promotion, product, distribution, and selling as marketing determinants. Paich et al. (2011) examined

the impact of marketing strategies on market penetration, sales, and product quality in the pharmaceutical industry. While the research findings aligned with the literature, the interview responses yielded insights into pharmaceutical marketing as a function. The research findings extended the knowledge in the area of marketing of pharmaceuticals.

Market. The consistency between the participants' responses regarding the market and the literature was evident. The study findings and the literature were aligned with the participants' responses on the market. The participants discussed the market size, market characteristics, and market performance throughout the product life cycle phases. The research findings revealed the market characteristics include the disease characteristics, the therapeutic treatments available, and the competition. This was in line with the literature. Duflos and Lichtenberg (2012), Min et al. (2017), and Paich (2011) discussed the market characteristics, market size, and market performance. The literature and the study findings were in line with the participants' responses that the market characteristics influenced the decision-making processes. The literature and the study findings were in line with the participants' responses that the disease area, the criticality of the patients' illness, and the complexity of the product use are critical factors driving market success.

The participants discussed the industry characteristics and the regulatory framework. Berndt et al. (2015), Grabowski et al. (2015), Grabowski et al. (2015), Gray et al. (2015), Martin et al. (2016), Schumock et al. (2017), and Song and Han (2016) discussed the regulatory framework within the industry, the rapidly changing environment and the industry trends, and the increased competition. The literature and the

study findings were in line with the participants' responses that the pharmaceutical market is highly regulated industry and is characterized by rapid changes.

Competition. The consistency between the participants' responses regarding the competition and the literature was evident. The study findings and the literature were aligned with the participants' responses on the competition. Participants discussed the effects of competition on the market performance throughout the product life cycle phases. Participants emphasized the importance of identifying the number of competitors and the type of competition (branded medicines or generic medicines). Participants reported the number of competitors influence the profits and market shares.

Camejo et al. (2013), Duflos and Lichtenberg (2012), Dunne and Dunne (2015), Frank and Hartman (2015), Kang and Montoya (2014), Kelton et al. (2014), Liao et al. (2015), Schramm and Hu (2013), and Tenn and Wendling (2014) discussed the effect of competition on the drug prices, marketing expenditures, and market entry. Kelton et al. (2014) documented that the number of competitors influence the price and market share, and that brand prices react to competition. The literature and the study findings were in line with the participants responses that competition influenced the decision-making processes.

Product life cycle phases. This second main theme included the following subthemes: premarket phase, and postmarket phase or commercialization. The premarket life cycle phases included: discovery, phase I of development, phase II of development, and phase III of development. The postmarket phases included: introduction phase, growth phase, maturity phase, and decline phase. The emergent themes from the data did

not follow the product life cycle models and phases outlined in the literature. While the research findings were in line with the literature to a certain extent, the participants' responses added to the literature findings in the area of product life cycle management within the pharmaceutical industry.

Mullins et al. (2010), Nikolopoulos at al. (2016), Prajapati et al. (2013), and Wagner and Wakeman (2016) discussed product life cycle models and phases. Mullins at al. documented that products go through five stages during their life cycle, such as introduction, growth, shakeout, maturity, and decline. Nikolopoulos at al. (2016) and Wagner and Wakeman (2016) presented product life cycle phases during the life of a molecule: from discovery of a new molecule, through development, introduction of a branded drug, then commercialization under patent exclusivity, and post patent expiry as a generic drug. Prajapati et al. identified the following product life cycle phases: development, approval, introduction, commercialization, and decline. The research findings extended the knowledge in the area of product life cycle management.

Marketing mix instruments. The research findings included the following instruments: product, timing of market entry, price, promotion, product life cycle management strategies, and branding. Stros and Lee (2015) evaluated the impact of marketing activities on sales, focusing on product, price, promotion, distribution, and order of entry effects. While the research findings were in line with the literature to a great extent, the participants' responses added to the literature findings regarding the use of marketing mix instruments.

Product. The research findings included product attributes (efficacy, quality, and safety), patent protection, innovativeness, and differentiation as key determinants for product positioning. The consistency between the participants' responses regarding product positioning and the literature was evident. The research findings revealed organizations pursue marketing through the continuous offering of high quality, safe, and effective products. Arafat et al. (2017), Camejo et al. (2013), Moe-Byrne et al. (2014), Prajapati et a. (2013), and Schramm and Hu (2013) discussed product attributes in terms of product quality, safety, and efficacy. Paich (2011) documented that safety, efficacy, tolerability, side effects, and mode of administration are key components for treatment options of a specific indication. The literature and the study findings were in line with the participants' responses regarding product attributes (quality, safety, and efficacy). The research findings revealed product safety concerns after launch could have serious impact the sales and market positioning. The literature and the study findings were in line with wit the participants' responses that product safety is factor influencing market performance.

Patents. The consistency between the participants' responses regarding patent protection and patent challenges and the literature was evident. Arafat et al. (2017), Berger at al. (2016), Branstetter et al. (2016), Grabowski et al. (2015), Kakkar (2015), Rusu et al. (2011), and Song and Han (2016) discussed patent protection and patent challenges. The research findings were in line with the literature that patents are primary tools to establish brands in the marketplace and enforce market exclusivity of inventions.

Innovation and differentiation. The consistency between the participants' responses regarding innovation and differentiation and the literature was evident. The research findings revealed the following forms of innovation and differentiation: introduction of new dosage forms, introduction of new indications, added safety features, reformulations to improve dosing, extended release formulations, fixed dose formulations, packaging innovations, product repositioning strategies, launches of branded authorized generics, OTC switches if applicable, new market penetration, entering into licensing agreements with other pharmaceutical companies to co-market or co-develop products, or introduction of new improved technologies. Frank and Hartman (2015), Kalepu and Nekkanti (2015), Sabatier et al. (2012), Schramm and Hu (2013), and Song and Han (2016) discussed innovation and differentiation in the marketplace. The research findings were in alignment with the literature that product differentiation, innovation, and product line extensions have the potential to improve drug efficacy and safety features, extend the life of a molecule after patent expiration, and increase market shares and revenues.

Timing of market entry. The consistency between the participants' responses regarding timing of market entry and the literature was evident. The research findings revealed that marketing teams target the product launch at time of regulatory approval. The research findings further revealed that any delay in product launch might affect the market performance in terms of loses in market shares and sales, depending on the competition in the marketplace. Andrade et al. (2016), DiMasi and Chakravarthy (2016), Fatokun et al. (2016), Min et al. (2017), Ridley and Régnier (2016), Smith (2012), Stros

and Lee (2015), and Yu and Gupta (2014) discussed timing of market entry in the pharmaceutical industry. The research findings were in alignment with the literature that the market access influenced the success or failure of any new pharmaceutical or medical technology to a large degree.

Price. The research findings revealed strategic pricing changes start from introduction and continue throughout the life of the drug. The participants reported high prices at time of launch followed by continuous price revisions and reductions during the growth, maturity, and decline phases, especially in established markets and increased competition. Costa-Font et al. (2014), Frank and Hartman (2015), Iacocca et al. (2013), Kanavos (2014), and Van der Shans et al. (2017) discussed pricing patterns of available treatments.

Iacocca et al. (2013) focused on examining influencing factors to explain variations in drug prices. Frank and Hartman (2015), Kanavos (2014), and Van der Shans et al. (2017) focused on the impact of generic drug launches and increased competition on branded drug prices, including loss of patent exclusivity period. Costa-Font et al. (2014) focused on generic drug entries and the effects of price regulations in the marketplace. While the research findings were in line with the literature to a great extent, the participants' responses added to the literature findings in the area of pricing of branded prescription medicines during product life cycle within the pharmaceutical industry.

Promotion. The consistency between the participants' responses regarding promotion and advertisement and the literature was evident. The participants identified

product detailing or samples, publications, medical journal advertising and publications, medical meetings, maintaining websites regarding product information, and selective advertisement as important marketing activities. The participants responded marketing managers use promotional activities to target medical professionals or patients. The research findings revealed high expenditures during the introduction phase to generate product and brand awareness, moderate investment during the growth and maturity phases to increase brand preference and brand benefits, and minimum investment during the decline phase.

Datta and Dave (2017), Haughton et al. (2015), Ju and Park (2015), Ruiz-Conde et al. (2014), and Schulz et al. (2014) discussed promotion and advertisement strategies and investment strategies during various stages of product life cycle. The research findings were in alignment with the literature that promotion is used as a tool to raise awareness. The research findings revealed the investment in promotion and advertising depends on the product life cycle phase, which is in alignment with the literature.

Product life cycle management strategies. The research findings revealed marketing teams develop product life cycle planning strategies and marketing programs are product focused. The research findings further revealed marketing leaders need to know the company portfolio mix including development and commercial products, the life cycle stage of each product in the pipeline, and the customer product portfolio mix to better balance the company portfolio. Haezendonck et al. (2016), Kanitz and Burmann (2012), and Stros and Lee (2015) discussed product life cycle management strategies and the importance of identifying the state for each product in the company's portfolio mix so

that business leaders can better identify strategies to balance the company's portfolio. The research findings were mostly in line with the literature regarding the importance of having a robust portfolio on different levels.

Branding. The research findings included creation of brand strategy and brand communication plans as tools to differentiate in the marketplace. Participant INT2 discussed branding based on product attributes (safety, efficacy and tolerability). The research findings emphasized the need for brand positioning in the marketplace. The research findings were in alignment with the studies in the literature regarding the brand strategies. Jasper et al. (2017), Kamyabi et al. (2017), and Stros and Lee (2015) discussed branding strategies and emphasized the importance of implementing a branding strategy to differentiate in the marketplace. Chen et al. (2016) and Kamyabi et al. (2017) linked branding strategy to corporate reputation. Kamyabi et al. evaluated the brand impact on the pharmaceutical market in the Iranian market, and presented four types of branding: (a) therapy area branding, (b) condition branding, (c) corporate branding, and (d) product branding. Kamyabi et al. found corporate branding to be most useful, followed by therapy area, product branding, and condition branding.

Marketing focus and marketing strategy. Prajapati et al. (2013) identified challenges and opportunities in different phases of product life cycle in the pharmaceutical industry. Prajapati et al. documented that during the introduction phase, the organizational focus is on the execution of technology transfer, preparation for new product supply, and coordination of production, sales, and marketing to meet the launch date. Prajapati et al. asserted in the commercialization and the quality management

phases teams reevaluate opportunities to add new patents aspects of the drug formulation (such as changes in dose, forms, reformulations, product line extensions, repackaging, combining the product with other products, and new scale-up strategies). Prajapati et al. identified the following organizational strategies: patent extensions, pricing strategies, in-licensing, and OTC switches if applicable.

Song and Han (2016) discussed strategies to extend the life of a commercial product through strong collaboration among departments, good understanding of industry environment, and the use of marketing mix instruments (combination of product attributes, pricing, and promotional strategies). Dauksevičiute and Simkin (2015) and Kumar et al. (2017) documented the need to allocate different marketing variables resources during different stages of the product life cycle. Schramm and Hu (2013) discussed the importance of product differentiation as a successful strategy to extend the life of a molecule. Kalepu and Nekkanti (2015) examined the impact of product line extensions on market performance. Kakkar (2015) discussed strategies to mitigate revenue losses after patent expiry. Mullins et al. (2010) discussed generalized marketing efforts and strategies during various stages of product life cycle applicable to many industries.

The studies in the literature did not provide an explicit and holistic overview of the marketing efforts and strategies during the different stages of product life cycle specific to branded prescription medicines within the pharmaceutical industry. While the research findings were in line with the studies in the literature to some extent, the research findings extended the knowledge of marketing focus and strategy development

and implementation during various stages of product lifecycle in the pharmaceutical industry. The interview responses revealed new insights and added new knowledge into the body of literature.

In the premarket phase the research findings revealed the marketing focus was to gain insight into the market and the market dynamics, develop forecasts, develop marketing plans and marketing mix models for the development products, create promotional materials, define launch plans, manage the internal regulatory reviews for upcoming new products, life cycle planning, and support sales teams in product positioning. In the introduction phase participants reported the marketing focus was on product launch through coordination of marketing and sales to introduce the product to the market on the launch date and post launch activities as part of the introduction phase. These strategic activities as part of the introduction phase included efforts to increase product knowledge, generate product awareness through promotion, establish a market, price revisions, establish brand strategy and brand differentiation, develop and communicate the brand vision and brand positioning, and monitor the competition and market developments.

In the growth phase the study findings showed the marketing focus was on market penetration, market segmentation, and brand preference to increase the product consumption over time. In the maturity phase participants documented the marketing focus was to maximize the commercial value, increase the patients' usage, defend market shares, maximize profits, and extend the life of the product. The participants discussed

strategies to defend the product value from new competitors through price revisions and strategic pricing and maximize brand loyalty through promotional activities.

The research findings revealed the following strategies during the maturity or the growth phases in collaboration with other departments: introducing new dosage forms (for example, liquids), added safety features, introducing new indications, reformulations to improve dosing, extended release formulations, fixed dose formulations, packaging innovations (for example, co-packaging with complementary drugs), labeling changes, product repositioning strategies, discussions on launches of branded authorized generics, OTC switches if applicable, new market penetration, entering into licensing agreements with other pharmaceutical companies, or new, improved technologies. In the decline phase the study findings included marketing focus on adding new features, decision whether to discontinue the product or not, preparations to phase out a product, strategies to reduce costs, minimum promotional activities, price revisions, strategies to extend the life of the product by extending the patent after patent expiry if applicable, co-packaging with other branded drugs to address unmet patient needs, and launch of authorized generics if applicable.

Factors influencing the decision-making process. The third main theme included the following subthemes: (a) factors associated with market share, revenue generation, and profitability; (b) challenges and factors influencing the current models of product portfolio mix; and (c) key success factors to fight competition. This main theme included the managerial implications and challenges. While the research findings were mostly in line with the studies in the literature, the interview responses revealed new

insights and added new knowledge into the body of literature regarding the factors influencing the decision-making processes. The research findings extended the knowledge in the area of managerial implications and challenges.

Strategy formulation and implementation. The research findings revealed the market characteristics (the treatments available, the market size, and the decease characteristics), the competition (the number of competitors, the types of competition, such as branded medicines, biotech, and generics, the degree of generic medicines market presence, and the changing price of competitive products), the stage of the product life cycle, product attributes (quality, safety, and efficacy), the improvements in clinical effectiveness, the launch of new drugs, the industry, and the regulatory environment influence the strategy formulation and implementation. The research findings were in alignment with the studies in the literature regarding the factors influencing the strategy formulation and implementation. Fatokun et al. (2016), Kelton et al. (2014), Schulz et al. (2014), Thomas et al. (2015), and Van der Shans et al. (2017) discussed the effects of market characteristics, the competition, and the generic entries on price, market shares, marketing communication plans, and strategy formulation and implementation.

The research findings revealed the marketing programs and strategies differ in their effectiveness and emphasized the need to apply different marketing programs and strategies during different life cycle stages to maximize the value of the drug. Dauksevičiute and Simkin (2015), Kumar et al. (2017), Mullins et al. (2010), Ruiz-Conde et al. (2014), and Song and Han (2016) discussed resource allocation for optimal mix and documented the need to optimize the product life cycle management strategies, and the

marketing mix strategies and programs. While the research findings were mostly in line with the studies in the literature, the interview responses revealed new insights and added new knowledge into the body of literature regarding the effectiveness of the marketing programs. The research findings included detailed, in-depth, rich data regarding marketing practices during premarket and postmarket phases.

The research findings revealed high level of uncertainty in research and development of new molecules and uncertainty in commercialization. The study findings were in line with the literature regarding the uncertainty in research and development. Kakkar (2015), Shabaninejad et al. (2014), and Wagner and Wakerman (2016) documented the presence of uncertainty during drug development and patenting process. The study participants discussed the level of uncertainty during the commercialization whether the new launch is going to achieve market success and generate the projected sales revenues. Included in the data analysis was an extension of insights regarding the existence of uncertainty during the commercialization.

Marketing capabilities. The study findings identified the ability to develop the right product lifecycle management strategies, the ability to develop marketing strategies, the ability to successfully introduce new products to the market, the ability to innovate, and the ability to execute the formulated strategies as influencing factors on strategy formulation, implementation, which in turn influences the organizational performance and market success. The research findings on marketing capabilities were in line with the literature. Barrales-Molina et al. (2014) and Diestre et al. (2017) discussed marketing dynamic capabilities and competencies to succeed in the marketplace. Chang et al. (2014)

discussed the effects of the capabilities of new product launch teams on market performance. Sabatier et al. (2012) discussed the impact of managerial competencies and perceptions on the organizational and market performance. Möller and Parvinen (2015) and Narayana et al. (2014) focused on strategy execution and implementation. Shabaninejad et al. (2014) discussed the capability to innovate.

Strategic activities in executing business strategies. This fourth main theme included the following key emergent categories: strategic activities in executing business strategies, and alignment of marketing programs with corporate and business strategies. While the research findings regarding strategies to extend the commercial life of the products, drive innovation, and remain competitive in the marketplace were mostly in line with the studies in the literature, the interview responses revealed new insights and added new knowledge into the body of literature. The research findings extended the knowledge in the area of development and implementation of marketing strategies within the pharmaceutical industry.

Strategic activities. The study findings included the following strategic activities in executing business strategies: (a) innovation in the form of new product launches, or line extensions of existing products through reformulations to improve dosing or introduce new forms, and find new uses; (b) implementation of effective product life cycle management strategies to maximize the value of each product; (c) maintaining wide company portfolio mix of products; (d) launch of authorized generics; (e) biosimilars; (f) switching to over the counter medicines where can be done, (g) decisions whether to discontinue product, (h) forming alliances, (i) acquisitions, (j) partnering with third

parties to co-develop, co-market new drugs, or conduct clinical trials, (k) outsourcing agreements (i.e. manufacturing), and (l) international market expansion. The research findings of implementation of various innovation strategies, product life cycle management strategies, outsourcing, partnering with third parties, etc. were in line with the literature. Ambrammal and Sharma (2014), Dubois et al. (2015), Park et al. (2014), Spieth and Schneider (2016), and Sternitzke (2014) discussed different types of innovation strategies and documented that innovation is critical in obtaining a competitive advantage in the marketplace. Barei and Ross (2015) and Rusu et al. (2011) discussed diversification strategies including new market expansions, portfolio expansions, and geographical expansions. Liu et al. (2016), Rusu et al. (2011), and Vidal and Mitchell (2018) identified formation of alliances and strategic partnerships with other organizations as important drivers of innovation.

Alignment of marketing programs with corporate and business strategies. The research findings revealed the marketing programs need to carry out the corporate strategies, goals, and objectives. Möller and Parvinen (2015) discussed the fit among business strategy, marketing strategy, and market performance. Herhausen (2016), Kang and Montoya (2014), and Obeidat et al. (2017) discussed strategy alignment between different levels within an organization. While the research findings aligned with the literature, the interview responses yielded insights into marketing strategy and implementation within pharmaceutical industry. The research findings extended the knowledge in the area of marketing of pharmaceuticals.

The participants responded the alignment of the marketing programs with the corporate strategies is done through strong collaboration with other departments and cross-functional teams. Eng and Ozdemir (2014), Herhausen (2016), and Paich et al. (2011) discussed the need for cross-functional teams to develop and implement explicit strategies and programs and generate returns. The research findings of aligning marketing programs with corporate strategies through collaboration with other departments were aligned with the literature.

Summary

The research findings from this study aligned with the overarching research question and the purpose of this research. All themes and subthemes that emerged from the data contributed to the understanding of the research question. This study could contribute to the understanding of the marketing strategies and processes organizational leaders used to successfully deliver products to the marketplace, effective management of product life cycle through effective allocation of marketing mix instruments during commercialization, extend the life of the molecules through innovation and re-innovation, and maintain market competitiveness. Organizational leaders should identify the factors influencing the decision-making processes and align the marketing strategies with business strategies to maintain competitiveness.

Application to Professional Practice

This study increases the body of the literature for marketing strategy and product life cycle management of branded prescription medicines within the pharmaceutical industry. Four major themes emerged from the study findings that were used as a

foundation for recommendations for application to professional practice and further research. This research could potentially increase the opportunities for organizational leaders to capitalize on tools for optimal allocation of marketing expenditures over time, and assist organizational leaders to better understand the marketing practices and challenges related to the product life cycle management, to successfully deliver products in the marketplace, maximize the profitability of a product over its life cycle, extend the life of the molecule, or successfully maintain competitiveness in the marketplace.

The application to professional practice of this study's findings could include the application of the strategies to successfully manage marketing and product life cycle programs to maintain competitiveness. The participants' marketing efforts included development and implementation of (a) product life cycle planning strategies and programs, (b) marketing strategies and programs that are product and market specific, (c) different marketing mix instruments in terms of product, price, place, and promotion for different product life cycle stages due to the time varying factor in terms of effectiveness, (d) business processes and tools used during new product introductions, commercialization and patent expiry, and (e) strategies and processes used to align marketing with business goals. The participants' efforts also included management of communication, decision-making, coordination, and execution of the marketing strategies and programs, and life cycle programs.

The participants' decision-making processes included assessments of internal capabilities (such as personnel knowledge and skills, interdepartmental collaboration, innovation capability, and collaboration with third parties), external factors (such as

reliance on third parties, the competition and market trends, industry dynamics, and the regulatory environment), and the need for alignment of marketing programs with corporate and business strategies, and their effect on the organizational performance. Cacciolatti and Lee (2016) developed a conceptual model showing the interaction between the marketing capabilities (such as accountability, interdepartmental collaboration, customer connection, and innovativeness), marketing strategies, and the influence of the marketing department within an organization and their effects on the organizational performance.

Implications for Social Change

The implications for positive social change include effective marketing strategies and product life cycle management. The study findings may contribute new knowledge to pharmaceutical organizations attempting to adopt effective strategies and programs for addressing product life cycle management and continuous introductions of new products or variations to the market. The discoveries from the study may assist organizational leaders to better understand the challenges and business practices in implementing strategies during various stages of product life cycle to successfully deliver products in the marketplace. This new knowledge from the study findings could help the marketing community in gaining insight into managerial tactics and strategies that may lead to innovations, differentiation, and competitiveness in the marketplace.

The study findings revealed the organizational leaders' commitment to delivering high quality, safe, and effective products to patients and addressing product safety concerns may contribute to increasing the patients' trust in the products consumed and

improved patients' health within the communities. The new knowledge revealed that organizational leaders are dedicated to continuous product innovation, such as finding new cures or expanding product uses to other disease areas, improving existing products, or finding new innovative technologies to sustain in the marketplace and improve patients' health. The study findings revealed that organizational leaders work with payers' groups to establish reimbursement programs for prospective consumers, pricing, and patient access to medications. This in turn would help improve market access to medications and optimal pricing under the reimbursement plans, which has direct effect on patients' spending and health care costs. Organizational leaders may increase company revenues, improve financial performance, and sustain in the marketplace using the strategies identified in this study. This in turn would have an effect on spending within the communities.

Recommendations for Action

Organizational leaders may consider evaluating their current marketing strategies and programs, and product life cycle management programs with the strategies listed in the main themes: (a) marketing as a function, (b) product life cycle phases, (c) the decision-making processes, and (d) strategic activities in executing business strategies. The themes involve designing marketing plans and strategies for (a) development products prior to market introduction, (b) new product launches at time of launch and during introduction period, (c) growth phase, (d) maturity phase, (e) decline phase and (f) patent expiry. The findings from this research study might strengthen the use of resource allocation model of marketing mix instruments (product, price, place, and promotion),

and the product life cycle model within marketing organizations. The findings also involve fostering cross-functional collaborations between marketing and other functional areas, such as research and development, regulatory, finance, supply chain, etc., and fostering business-to-business relationships with third parties to co-develop or co-promote products, outsource manufacturing or R&D functions, or form strategic alliances.

Aligning marketing strategies and tactics with business strategies may improve organizational performance, strengthen market position, and focus on the right goals. The findings from this study stressed the importance of continuous innovation and re-innovation to extend the life of the product and maintain market competitiveness. A process to analyze internal and external capabilities and industry trends is a necessary recommendation to plan proactively a marketing strategy. The findings indicated that organizational leaders need to perform a thorough evaluation of the company product portfolio of development and commercial products, the product attributes, the disease area/market, the competition, identify strategic products, etc. before deciding on a strategy.

Business professionals, managers, who have direct responsibility in development and implementation of marketing strategies and programs within marketing departments may benefit from the findings of the study. Organizational leaders who have direct responsibility in creating organizational business strategies and are involved in the decision-making may benefit from the results of the study. Organizational leaders interested in product life cycle management could also benefit from the study findings. I

will disseminate the results of this study through scholarly journals, training venues, seminars, and conferences.

Fellow researchers conducting qualitative case studies through interviews may benefit from the study. In data collection I recorded the interviews using an iPhone 7 smartphone. Recording the face-to-face interviews using voice memo app was simple and easy way to record interviews. The recordings were clear, and the sound quality was good. The processing of the files was successful. Recording the telephone interview using a call recorder app was easy and simple way to record an interview. The processing of the file was successful and the recording was clear. I recommend to other researchers using a telephone as a recording device for face-to-face or telephone interviews because of the ease of use. When using a telephone as a recording device, researchers need to make sure the telephone has enough capacity and memory space to record the interviews.

Recommendations for Further Research

Recommendations for further research include conducting additional exploration of development and implementation of marketing strategies and processes and product life cycle management to extend the life of the molecule and maintain market competitiveness. Recommendations for further research include addressing the limitations of this study, such as the selection of the research method, the study population, and the geographical area. I used qualitative research method in this study. A major limitation of the qualitative research method is the interpretative nature. Recommendation for future research could include a mixed-methods approach that includes both qualitative and quantitative research methods and allows for quantifying

outcomes and examining relationships. Future researchers could conduct studies that include population from geographic areas outside of central Ohio.

Recommendations for future research include participants' suggestions on the research topic. This research study focuses on development and implementation of marketing mix instruments and strategies for the brand prescription medicines market. This approach is not specific to a marketing segment or a product and provides a broad view of the marketing management of the branded prescription medicines market. Future researchers could focus on a specific market segment or disease area, a specific product, or specific marketing instrument. Participant INT1 suggested "If you want more specific life cycle management strategies, research a product, the competitive landscape, the decease area market, and explore the strategic activities from discovery, through launch, and then commercialization, including the promotional activities. Another suggestion is to narrow down the topic on a single marketing activity, for example, promotion." Participant INT3 suggested "focusing on a single disease, therapeutic area or even a product and then investigate company activities and strategies in place for that specific product: what kind of strategies were implemented, what kind of challenges was the company facing at the time of launch and then during commercialization, and so on."

Reflections

My expectation of conducting this research study was to gain a deeper understanding of the topic under study. The research I conducted expanded my knowledge in the area of marketing branded prescription medicines within the pharmaceutical industry in the United States. The process of conducting this study from

idea generation, through theory, to application to practice was challenging. Effective time management was a key to successful completion of the study. Prior to data collection, I expanded my knowledge on the existing literature, the research methods and designs, the role of the researcher, and the procedures to ensure ethical research, data confidentiality, and integrity. Understanding and following the procedures to conduct ethical research, the protocols of the *Belmont Report* to protect the participants' confidentiality and treat the participants in an ethical manner, and the interview protocol I developed helped me conduct effective interviews. Cridland et al. (2015) and Haahr et al. (2014) discussed the steps involved in conducting effective semistructured interviews, focusing on the procedure to conduct ethical research. The conduct of data collection and data analysis exposed me to acquiring new skills I could use further in my career. The data that emerged from the interview responses increased my understanding on the research topic.

I identified areas of potential personal bias prior to data collection. My role in the data collection and analysis was to serve as a key instrument to collect, organize, and analyze data to capture the meaning of the topic under study as described by the participants. To help mitigate bias, I maintained self-awareness during the interviewing process. Contacting individuals with whom I do not have a professional relationship helped me proactively manage any potential conflicts of interest. The completion of the Protecting Human Research Participants course provided by the National Institute of Health (NIH), and the documentation of the data collection and data analysis process prior to commencing the data collection, helped mitigate personal bias during data collection.

I transcribed each interview word by word into a transcript after completion and used primarily Excel spreadsheets supported with the use of NVivo software to sort and analyze the data. The Excel spreadsheets and NVivo software helped in the data analysis process in developing codes and themes. When I conduct future research studies that would involve interviews, I will forward the recordings for transcription to a professional service and will use software analysis tool as a primary tool supported with Excel spreadsheets to analyze and sort the data and develop code and themes.

The findings from this research study expanded my knowledge in the area of marketing branded prescription medicines. The key discovery was the level of uncertainty that organizational leaders face when managing marketing and product life cycle programs from the moment of product introduction to the market to patent expiration. The findings from this research study could be utilized in my career.

Conclusion

The study makes several significant contributions to the existing literature on development and implementation of marketing strategies and programs during various stages of product life cycle specific to branded prescription medicines market within the pharmaceutical industry in the United States. Guided by the general systems theory and the evolutionary systems theory, the purpose of this qualitative case study was to determine the best practices among marketing managers within pharmaceutical companies on how to pursue marketing strategies during various stages of product life cycle. The data gathered in this study was multidimensional and included semistructured, interviews and secondary data sources. I collected the data through interviews and

secondary data sources to understand the strategies and processes necessary for improved product life cycle management, and the challenges and factors influencing the decision-making processes within marketing.

The semistructured interviews included responses from three managers within a marketing department at a pharmaceutical company in central Ohio of the United States. I conducted member checking follow-up interviews to ensure trustworthiness of the interview responses. The review of secondary data included company documents and government databases. I triangulated the data collected through interviews and member checking and compared the interview data to company documents, government databases, and the literature.

The themes that emerged from the data allowed for recommendations for innovations and learning, resource allocation models of marketing mix instruments during various stages of product life cycles, factors influencing the decision-making processes, and promoting best practices in the area of marketing. I grouped the research findings into four main emergent themes: (a) marketing as a function, (b) product life cycle phases, (c) factors influencing the decision-making processes, and (d) strategic activities in executing business strategies. All emergent themes and subthemes contributed significantly to answering the overarching research question.

The first main theme (a) marketing as a function was broken down to the following subtheme elements: product, branding, product life cycle programs, price, competition and market, sales, promotion, and new product launches. The second main theme (b) product life cycle phases could be divided into two categories: premarket

phase, and postmarket phase or commercialization. Premarket life cycle phases that emerged from the data were: discovery, phase I of development, phase II of development, and phase III of development. Postmarket phases that emerged from the data are: introduction phase, growth phase, maturity phase, and decline phase. The third main theme (c) factors influencing the decision-making processes included the following subthemes: (i) factors associated with market share, revenue generation, and profitability, (ii) challenges and factors influencing the current models of product portfolio mix, and (iii) key success factors to fight competition. The fourth main theme (iv) strategic activities in executing business strategies was broken down to the following two subthemes: strategic activities in executing business strategies, and alignment of marketing programs with corporate and business strategies.

If marketing management and product life cycle management are beneficial to organizations, this study's value is the contribution to the identification and resolution of issues that companies face when developing and implementing marketing strategies and programs during various stages of product life cycle within the branded prescription medicines market segment. The study may contribute to the understanding of the marketing strategies and processes organizational leaders used to manage the resource allocation of marketing mix instruments during various stages of product life cycle to extend the life of the molecule, successfully deliver products to the marketplace, and maintain market competitiveness. Organizational leaders should evaluate their organizations' business strategies and align their resources and marketing plans before making a decision on a strategy. This study's results may also have implications for

positive social change, such as assisting organizational leaders to better understand the challenges and business practices in implementing marketing strategies during various stages of product life cycle to successfully deliver products in the marketplace, improve patients' health and their access to medication, and improve financial performance and spending within the communities.

References

Abatecola, G., Belussi, F., Breslin, D., & Filatotchev, I. (2015). Darwinism, organizational evolution and survival: Key challenges for future research. *Journal of Management & Governance*, *20*(1), 1-17. doi:10.1007/s10997-015-9310-8

Ahearne, M., Lam, S. K., & Kraus, F. (2014). Performance impact of middle managers' adaptive strategy implementation: The role of social capital. *Strategic Management Journal*, *35*, 68-87. doi:10.1002/smj.2086

Alt, S., & Helmstädter, A. (2018). Market entry, power, pharmacokinetics: What makes a successful drug innovation? *Drug Discovery Today*, *23*, 208-212. doi:10.1016/j.drudis.2017.09.009

Alvarez, S. A., Barney, J. B., McBride, R., & Wuebker, R. (2014). Realism in the study of entrepreneurship. *Academy of Management Review*, *39*, 227-233. doi:10.5465/amr.2013.0244

Ambrammal, S. K., & Sharma, R. (2014). R&D and patenting by firms in India in high- and medium-high-technology industries. *Journal of Chinese Economic and Business Studies, 12*, 181-207. doi:10.1080/14765284.2014.900957

Anderson, C. A., Leahy, M. J., DelValle, R., Sherman, S., & Tansey, T. N. (2014). Methodological application of multiple case study design using modified consensual qualitative research (CQR) analysis to identify best practices and organizational factors in the public rehabilitation program. *Journal of Vocational Rehabilitation*, *41*, 87-98. doi:10.3233/JVR-140709

Anderson, K., Stowasser, D., Freeman, C., & Scott, I. (2014). Prescriber barriers and

enablers to minimising potentially inappropriate medications in adults: A systematic review and thematic synthesis. *BMJ open*, *4*, e006544. doi:10.1136/bmjopen-2014-006544

Ando, H., Cousins, R., & Young, C. (2014). Achieving saturation in thematic analysis: Development and refinement of a codebook. *Comprehensive Psychology*, *3*, 3-10. doi:10.2466/03.CP.3.4

Andrade, L. F., Sermet, C., & Pichetti, S. (2016). Entry time effects and follow-on drug competition. *European Journal of Health Economics: HEPAC: Health Economics in Prevention and Care*, *17*, 45-60. doi:10.1007/s10198-014-0654-9

Appelt, S. (2015). Authorized generic entry prior to patent expiry: Reassessing incentives for independent generic entry. *Review of Economics & Statistics*, *97*, 654-666. doi:10.1162/REST_a_00488

Arafat, M., Ahmed, Z., & Arafat, O. (2017). Comparison between generic drugs and brand name drugs from bioequivalence and thermoequivalence prospective. *International Journal of Pharmacy and Pharmaceutical Sciences, 9*(6), 1-5. doi:10.22159/ijpps.2017v9i6.18735

Barrales-Molina, V., Martínez-López, F. J., & Gázquez-Abad, J. C. (2014). Dynamic marketing capabilities: Toward an integrative framework. *International Journal of Management Reviews*, *16*, 397-416. doi:10.1111/ijmr.12026

Barei, F., & Ross, M. (2015). The refinement of the super generic concept: Semantic challenge for product re-innovation? *Generics and Biosimulars Initiative (GaBI) Journal, 4*(1), 25-32. doi:10.5639/gabij.2015.0401.007

Berger, J., Dunn, J. D., Johnson, M. M., Karst, K., R., & Shear, W. C. (2016). How drug life cycle management patent strategies may impact formulary management. *American Journal of Managed Care, 22*, 487-490. Retrieved from http://www.ajmc.com

Berndt, E. R., Nass, D., Kleinrock, M., & Aitken, M. (2015). Decline in economic returns from new drugs raises questions about sustaining innovations. *Health Affairs, 34*, 245-252. doi:10.1377/hlthaff.2014.1029

Bertalanffy, L. (1972). The history and status of general systems theory. *Academy of Management Journal, 15*, 407-426. doi:10.2307/255139

Birkinshaw, J., Zimmermann, A., & Raisch, S. (2016). How do firms adapt to discontinuous change? *California Management Review*, *58*, 36-58. doi:10.1525/cmr.2016.58.4.36

Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: A tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research*, *26*, 1802-1811. doi:10.1177/1049732316654870

Boell, S. K., & Cecez-Kecmanovic, D. (2015). On being 'systematic'in literature reviews in IS. *Journal of Information Technology*, *30*, 161-173. doi:10.1057/9781137509888_3

BOLD Educational Software (2018). *Writing the delimitations*. Retrieved from http://bold-ed.com/barrc/limitations.htm

Brewis, J. (2014). The ethics of researching friends: On convenience sampling in qualitative management and organization studies. *Journal of British Management,*

25, 849-862. doi:10.1111/1467-8551.12064

Branstetter, L., Chatterjee, C., & Higgins, M. J. (2016). Regulation and welfare: evidence from paragraph IV generic entry in the pharmaceutical industry. *RAND Journal of Economics, 47*, 857-890. doi:10.1111/1756-2171.12157

Brossart, D. F., Vannest, K. J., Davis, J. L., & Patience, M. A. (2014). Incorporating nonoverlap indices with visual analysis for quantifying intervention effectiveness in single-case experimental designs. *Neuropsychological Rehabilitation*, *24*, 464-491. doi:10.1080/09602011.2013.868361

Cacciolatti, L., & Lee, S. H. (2016). Revisiting the relationship between marketing capabilities and firm performance: The moderating role of market orientation, marketing strategy and organisational power. *Journal of Business Research, 69*, 5597-5610. doi:10.1016/j.jbusres.2016.03.067

Camejo, R. R., McGrath, C., Miraldo, M., & Rutten, F. (2013). The determinants of cost-effectiveness potential: An historical perspective on lipid-lowering therapies. *Pharmacoeconomics*, *31*, 445-454. doi:10.1007/s40273-013-0041-x

Camejo, R. R., Miraldo, M., & Rutten, F.(2017). Cost-effectiveness and dynamic efficiency: Does the solution lie within? *Value in Health*, *20*, 240-243. doi:10.1016/j.jval.2016.12.004

Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Neville, A. J. (2014). The use of triangulation in qualitative research. *Oncology Nursing Forum*, *41*, 545-547. doi:10.1188/14.ONF.545-547

Chang, W., Franke, G. R., Butler, T. D., Musgrove, C. F., & Ellinger, A. E. (2014).

Differential mediating effects of radical and incremental innovation on market orientation-performance relationship: A meta-analysis. *Journal of Marketing Theory & Practice*, *22*, 235-250. doi:10.2753/MTP1069-6679220301

Chao, C. K., Hu, H., Zhang, L., & Wu, J. (2016). Managing the challenges of pharmaceutical patent expiry: A case study of Lipitor. *Journal of Science and Technology Policy Management 7*, 258-272. doi:10.1108/JSTPM-12-2015-0040

Chen, C. C. M., Chen, C. C. M., Nguyen, B., Nguyen, B., Melewar, T. C., & Melewar, T. C. (2016). An investigation of the uses of corporate reputation: A managerial perspective in the Taiwanese pharmaceutical industry. *Qualitative Market Research: An International Journal, 19*, 357-376. doi:10.1108/QMR-06-2015-0053

Chen, Y. S., Shih, C. Y., & Chang, C. H. (2014). Explore the new relationship between patents and market value: A panel smooth transition regression (PSTR) approach. *Scientometrics*, *98*, 1145-1159. doi:10.1007/s11192-013-1110-9

Cleary, M., Horsfall, J., & Hayter, M. (2014). Data collection and sampling in qualitative research: Does size matter? *Journal of Advanced Nursing*, *70*, 473-475. doi:10.1111/jan.12163

Cocks, G. (2014). Optimising pathways for an organisational change management programme. *The TQM Journal, 26*, 88-97. doi:10.1108/TQM-02-2013-0015

Collins, C. S., & Cooper, J. E. (2014). Emotional intelligence and the qualitative researcher. *International Journal of Qualitative Methods, 13,* 88-103. doi:10.1177/160940691401300134

Colorafi, K. J., & Evans, B. (2016). Qualitative descriptive methods in health science research. *HERD: Health Environments Research & Design Journal, 9*, 16-25. doi:10.1177/1937586715614171

Constantinou, C. S., Georgiou, M., & Perdikogianni, M. (2017). A comparative method for themes saturation (CoMeTS) in qualitative interviews. *Qualitative Research*, doi:10.1177/1468794116686650

Costa-Font, J., McGuire, A., & Varol, N. (2014). Price regulation and relative delays in generic drug adoption. *Journal of Health Economics, 38,* 1-9. doi:10.1016/j.jhealeco.2014.04.004

Cridland, E. K., Jones, S. C., Caputi, P., & Magee, C. A. (2015). Qualitative research with families living with autism spectrum disorder: Recommendations for conducting semistructured interviews. *Journal of Intellectual & Developmental Disability*, *40*, 78-91. doi:10.3109/13668250.2014.964191

Cronin, C. (2014). Using case study research as a rigorous form of inquiry. *Nurse Researcher*, *21*, 19-27. doi:10.7748/nr.21.5.19.e1240

Darawsheh, W. (2014). Reflexivity in research: Promoting rigour, reliability and validity in qualitative research. *International Journal of Therapy & Rehabilitation*, *21*, 560-568. doi:10.12968/ijtr.2014.21.12.560

Datta, A., & Dave, D. (2017). Effects of physician□directed pharmaceutical promotion on prescription behaviors: Longitudinal evidence. *Health Economics*, *26*, 450-468. doi:10.1002/hec.3323

Dauksevičiute, I., & Simkin, L. (2015). Optimising relationship marketing programmes: A holistic approach. *Journal of Strategic Marketing, 24*, 500-518. doi:10.1080/0965254X.2015.1063681

Davcik, N. S., & Sharma, P. (2016). Marketing resources, performance, and competitive advantage: A review and future research directions. *Journal of Business Research*, *69*, 5547-5552. doi:10.1016/j.jbusres.2016.04.169

De Massis, A. & Kotlar, J. (2014). The case study method in family business research: Guidelines for qualitative scholarship. *Journal of Family Business Strategy, 5*(1), 15-29. doi:10.1016/j.jfbs.2014.01.007

Denzin, N. K. (2017). Critical qualitative inquiry. *Qualitative Inquiry*, *23*(1), 8-16. doi:10.1177/1077800416681864

Diestre, L., Rajagopalan, N., & Dutta, S. (2015). Constraints in acquiring and utilizing directors' experience: An empirical study of new-market entry in the pharmaceutical industry. *Strategic Management Journal*, *36*, 339-359. doi:10.1002/smj.2215

DiMasi, J. A., & Chakravarthy, R. (2016). Competitive development in pharmacologic classes: Market entry and the timing of development. *Clinical Pharmacology & Therapeutics*, *100*, 754-760. doi:10.1002/cpt.502

DiMasi, J. A., Grabowski, H. G., & Hansen, R. W. (2016). Innovation in the pharmaceutical industry: New estimates of R&D costs. *Journal of Health Economics*, *47*, 20-33. doi:10.1016/j.jhealeco.2016.01.012

Dubois, P., de Mouzon, O., Scott-Morton, F., & Seabright, P. (2015). Market size and

pharmaceutical innovation. *RAND Journal of Economics (Wiley-Blackwell)*, *46*, 844-871. doi:10.1111/1756-2171.12113

Duflos, G., & Lichtenberg, F. R. (2012). Does competition stimulate drug utilization? The impact of changes in market structure on US drug prices, marketing and utilization. *International Review of Law and Economics, 32*, 95-109. doi:10.1016/j.irle.2011.08.003

Duggleby, W. & Williams, A. (2016). Methodological and epistemological considerations in utilizing qualitative inquiry to develop interventions. *Qualitative Health Research, 26,* 147-153. doi:0.1177/1049732315590403

Dunne, S. S., & Dunne, C. P. (2015). What do people really think of generic medicines? A systematic review and critical appraisal of literature on stakeholder perceptions of generic drugs. *BMC Medicine*, *13*(1), 173-200. doi:10.1186/s12916-015-0415-3

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *Sage Open*, *4*(1), 1-10. doi:10.1177/2158244014522633

Eng, T. Y., & Ozdemir, S. (2014). International R&D partnerships and intrafirm R&D-marketing–production integration of manufacturing firms in emerging economies. *Industrial Marketing Management*, *43*, 32-44. doi:10.1016/j.indmarman.2013.07.013

Erden, Z., Klang, D., Sydler, R., & Von Krogh, G. (2015). How can we signal the value of our knowledge? Knowledge-based reputation and its impact on firm

performance in science-based industries. *Long Range Planning*, *48*, 252-264. doi:10.1016/j.lrp.2014.07.003

Fatokun, O., Ibrahim, M. I. M., & Hassali, M. A. (2016). Generic medicines entry into the Malaysian pharmaceutical market. *Generics and Biosimulars Initiative (GaBI) Journal, 5*, 180-181. doi:10.5639/gabij.2016.0504.046

Faulds, M. C., Bauchmuller, K., Miller, D., Rosser, J. H., Shuker, K., Wrench, I., . . . & Mills, G. H. (2016). The feasibility of using 'bring your own device'(BYOD) technology for electronic data capture in multicentre medical audit and research. *Anaesthesia*, *71*, 58-66. doi:10.1111/anae.13268

Fiat, A. E., Cook, C. R., Zhang, Y., Renshaw, T. L., DeCano. P., & Merrick, J. S. (2017). Mentoring to promote courage and confidence among elementary school students with internalizing problems: A single-case design pilot study. *Journal of Applied School Psychology, 33*, 261-287. doi:10.1080/15377903.2017.1292975

Flick, U. (2017). Mantras and myths the disenchantment of mixed-methods research and revisiting triangulation as a perspective. *Qualitative Inquiry*, *23*, 46-57. doi:10.1177/1077800416655827

Fox J. & Moreland J. J. (2015). The dark side of social networking sites: An exploration of the relational and psychological stressors associated with Facebook use and affordances. *Computers in Human Behavior, 19,* 168-176. doi:10.1016/j.chb.2014.11.083

Frank, R. G., & Hartman, R. S. (2015). The nature of pharmaceutical competition: Implications for antitrust analysis. *International Journal of the Economics of*

Business, *22*, 301-343. doi:10.1080/13571516.2015.1045745

Fusch, P. I., & Ness, L. R. (2015). Are we there yet? Data saturation in qualitative research. *The Qualitative Report, 20*, 1408-1416. Retrieved from http://tqr.nova.edu

Gascón, F., Lozano, J., Ponte, B., & de la Fuente, D. (2017). Measuring the efficiency of large pharmaceutical companies: An industry analysis. *The European Journal of Health Economics: HEPAC: Health Economics In Prevention And Care*, *18*, 587-608. doi:10.1007/s10198-016-0812-3

Gill, M. J. (2014). The possibilities of phenomenology for organizational research. *Organizational Research Methods*, *17*, 118-137. doi:10.1177/1094428113518348

Gould, N. J., Lorencatto, F., Stanworth, S. J., Michie, S., Prior, M. E., Glidewell, L., . . . Francis, J. J. (2014). Application of theory to enhance audit and feedback interventions to increase the uptake of evidence-based transfusion practice: An intervention development protocol. *Implementation Science, 9*, 92-103. doi:10.1186/s13012-014-0092-1

Govindan, K, & Fattahi, M. (2017). Investigating risk and robustness measures for supply chain network design under demand uncertainty: A case study of glass supply chain. *International Journal of Production Economics, 183*, 680–699. doi:10.1016/j.ijpe.2015.09.033

Grabowski, H. G., DiMasi, J. A., & Long, G. (2015). The roles of patents and research and development incentives in biopharmaceutical innovation. *Health Affairs, 34*, 302-310. doi:10.1377/hlthaff.2014.1047

Grabowski, H., Long, G., & Mortimer, R. (2014). Recent trends in brand-name and generic drug competition. *Journal of Medical Economics*, *17*, 207-214. doi:10.3111/13696998.2013.873723

Grabowski, H., Long, G., Mortimer, R., & Boyo, A. (2016). Updated trends in US brand-name and generic drug competition. *Journal of Medical Economics*, *19*, 836-844. doi:10.1080/13696998.2016.1176578

Gray, J. V., Siemsen, E., & Vasudeva, G. (2015). Colocation still matters: Conformance quality and the interdependence of R&D and manufacturing in the pharmaceutical industry. *Management Science*, *61*, 2760-2781. doi:10.1287/mnsc.2014.2104

Grimmer, M., Kilburn, A. P., & Miles, M. P. (2016). The effect of purchase situation on realized pro-environmental consumer behavior. *Journal of Business Research*, *69*, 1582-1586. doi:10.1016/j.jbusres.2015.10.021

Guiette, A., & Matthyssens, P. (2014). Organizing mindfully for relevant process research on strategic change. *Journal of Business & Industrial Marketing, 29*, 610-618. doi:10.1108/JBIM-09-2013-0206

Haahr, A., Norlyk, A., & Hall, E. O. C. (2014). Ethical challenges embedded in qualitative research interviews with close relatives. *Nursing Ethics, 21*(1), 6-15. doi:10.1177/0969733013486370

Haezendonck, E., Willems, K., & Hillemann, J. (2016). Doing good while performing well at Flemish universities: Benchmarking higher education institutions in terms of social inclusion and market performance. *International Journal of Inclusive Education, 21,* 31-47. doi:10.1080/13603116.2016.1184325

Halabi, A. K., & Carroll, B. (2015). Increasing the usefulness of farm financial information and management: A qualitative study from the accountant's perspective. *Qualitative Research in Organizations and Management: An International Journal*, *10*, 227-242. doi:10.1108/QROM-07-2014-1240

Hartman, M., Martin, A. B., Lassman, D., & Catlin, A. (2015). National health spending in 2013: Growth slows, remains in step with the overall economy. *Health Affairs, 34*, 150-160. doi:10.1377/hlthaff.2014.1107

Harvey, L. (2015). Beyond member checking: A dialogic approach to the research interview. *International Journal of Research & Method in Education*, *38*, 23-38. doi:10.1080/1743727X.2014.914487

Haughton, D., Hua, G., Jin, D., Lin, J., Wei, Q., & Zhang, C. (2015). Optimization of the promotion mix in the healthcare industry. *International Journal of Pharmaceutical and Healthcare Marketing*, *9*, 289-305. doi:10.1108/IJPHM-03-2013-0008

Herhausen, D. (2016). Unfolding the ambidextrous effects of proactive and responsive market orientation. *Journal of Business Research 69*, 2585–2593. doi:10.1016/j.jbusres.2015.10.139

Hirsch, B. R., Balu, S., & Schulman, K. A. (2014). The impact of specialty pharmaceuticals as drivers of health care costs. *Health Affairs*, *33*, 1714-1720. doi:10.1377/hlthaff.2014.0558

Hlady-Rispal, M., & Jouison-Laffitte, E. (2014). Qualitative research methods and epistemological frameworks: A review of publication trends in entrepreneurship.

Journal of Small Business Management, *52*, 594-614. doi:10.1111/jsbm.12123

Hogle, J. A., & Moberg, D. P. (2014). Success case studies contribute to evaluation of complex research infrastructure. *Evaluation & the Health Professions*, *37*, 98-113. doi:10.1177/0163278713500140

Houghton, C., Murphy, K., Shaw, D., & Casey, D. (2015). Qualitative case study data analysis: An example from practice. *Nurse Researcher, 22*, 8-12. doi:10.7748/nr.22.5.8.e1307

Hunt, S. D. (2015). Strategic marketing, sustainability, the triple bottom line, and resource-advantage (R-A) theory: Securing the foundations of strategic marketing theory and research. *AMS Review, 7*, 52-66. doi:10.1007/s13162-017-0090-y

Hyett, N., Kenny, A., & Virginia Dickson-Swift, D. (2014). Methodology or method? A critical review of qualitative case study reports. *International Journal of Qualitative Studies on Health and Well-being*, *9*. doi:10.3402/qhw.v9.23606

Iacocca, K., Sawhill, J., & Zhao, Y. (2013). A multiple regression model to explain the cost of brand-drugs. *Socio-Economic Planning Sciences*, *47*, 238-246. doi:10.1016/j.seps.2012.11.001

Impellizzeri, J., Savinsky, D. M., King, J. A., & Leitch-Alford, L. (2017). Conceptual mapping task: An effective verification tool for qualitative counseling research. *Counseling Outcome Research and Evaluation, 8*(1), 31-47. doi:10.1080/21501378.2017.1327745

Jamal, L., Sapp, J. C., Lewis, K., Yanes, T., Facio, F. M., Biesecker, L. G., & Biesecker, B. B. (2014). Research participants' attitudes towards the confidentiality of

genomic sequence information. *European Journal of Human Genetics: EJHG*, *22*, 964-968. doi:10.1038/ejhg.2013.276

Jasper, S., Leenders, M. A. A. M., & O'Shannassy, T. (2017). The dramatic breakdown of the market orientation concept in the pharmaceutical industry: Lessons from Vioxx. *Journal of Strategic Marketing,* 1-21. doi:10.1080/0965254X.2017.1384752

Ju, I., & Park, J. S. (2015). Communication strategies in direct-to-consumer prescription drug advertising (DTCA): Application of the six segment message strategy wheel. *Journal of Health Communication*, *20*, 546-554. doi:10.1080/10810730.2014.999890

Kakkar, A. K. (2015). Patent cliff mitigation strategies: Giving new life to blockbusters. *Expert Opinion on Therapeutic Patents, 25,* 1353-1359. doi:10.1517/13543776.2015.1088833

Kalcheva, I., McLemore, P., & Pant, S. (2018). Innovation: The interplay between demand-side shock and supply-side environment. *Research Policy*, *47*, 440-461. doi:10.1016/j.respol.2017.11.011

Kalepu, S., & Nekkanti, V. (2015). Insoluble drug delivery strategies: Review of recent advances and business prospects. *Acta Pharmaceutica Sinica B*, *5*, 442-453. doi:10.1016/j.apsb.2015.07.003

Kallio, N., Pietila, A., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: Developing a framework for a qualitative semi-structured

interview guide. *Journal of Advanced Nursing, 72,* 2954 to 2965. doi:10.1111/jan.13031

Kamyabi, A., Zaboli, P., Kebriaeezadeh, A., Saeedi, M., Morteza-Semnani, K., Akbari, J., & Rohani, E. (2017). Evaluation of branding impact on Iranian pharmaceutical market: A qualitative study. *Value in Health*, *20*, 674-684. doi:10.1016/j.jval.2017.08.1663

Kanavos, P. (2014). Measuring performance in off-patent drug markets: A methodological framework and empirical evidence from twelve EU Member States. *Health Policy*, *118*, 229-241. doi:10.1016/j.healthpol.2014.08.005

Kang, W., & Montoya, M. (2014). The impact of product portfolio strategy on financial performance: The roles of product development and market entry decisions. *Journal of Product Innovation Management*, *31*, 516-534. doi:10.1111/jpim.12111

Kanitz, C., & Burmann, C. (2012). The challenge of pharmaceutical brand architecture: A theoretical analysis based on the brand architecture model (B.A.M.). *Marketing Review*, *12*, 309-326. doi:10.1362/146934712X13420906885520

Karatas, K., & Oral, B. (2015). Teachers' perceptions on culturally responsiveness in education. *Journal of Ethnic and Cultural Studies, 2*, 47-57. Retrieved from: http://www.ejecs.org

Kelton, C. M., Chang, L. V., Guo, J. J., Yu, Y., Berry, E. A., Bian, B., & Heaton, P. C. (2014). Firm-and drug-specific patterns of generic drug payments by US

Medicaid programs: 1991–2008. *Applied Health Economics and Health Policy*, *12*, 165-177. Retrieved from http://link.springer.com/journal/40258

Ketokivi, M., & Choi, T. (2014). Renaissance of case research as a scientific method. *Journal of Operations Management*, *32*, 232-240. doi:10.1016/j.jom.2014.03.004

Khankeh, H., Ranjbar, M., Khorasani-Zavareh, D., Zargham-Boroujeni, A., & Johansson, E. (2015). Challenges in conducting qualitative research in health: A conceptual paper. *Iranian Journal of Nursing & Midwifery Research*, *20*, 635-641. doi:10.4103/1735-9066.170010

Khanna, R., Guler, I., & Nerkar, A. (2016). Fail often, fail big, and fail fast? Learning from small failures and R&D performance in the pharmaceutical industry. *Academy of Management Journal*, *59*, 436-459. doi:10.5465/amj.2013.1109

Klag, M., & Langley, A. (2013). Approaching the conceptual leap in qualitative research. *International Journal of Management Reviews*, *15*, 149-166. doi:10.1111/j.1468-2370.2012.00349.x

Kozlenkova, I., Samaha, S., & Palmatier, R. (2014). Resource-based theory in marketing. *Journal of the Academy of Marketing Science*, *42*(1), 1-21. doi:10.1007/s11747-013-0336-7

Kumar, V. (2015). Evolution of marketing as a discipline: What has happened and what to look out for. *Journal of Marketing*, *79*(1), 1-9. doi:10.1509/jm.79.1.1

Kumar, V., Brianna, J. W., & Greene, C. M. (2017). Synergistic effects of social media and traditional marketing on brand sales: Capturing the time-varying effects.

Journal of the Academy of Marketing Science, 45, 268-288. doi:10.1007/s11747-016-0484-7

Laszlo, E., & Laszlo, C.H. (1997). *The insight edge: An introduction to the theory and practice of evolutionary management.* Westport, CT: Quorum Books.

Lee, I., Bloor, K., Hewitt, C., & Maynard, A. (2015). International experience in controlling pharmaceutical expenditure: Influencing patients and providers and regulating industry - a systematic review. *Journal of Health Services Research & Policy*, *20*(1), 52-59. doi:10.1177/1355819614545675

Leitao, P., Colombo, A. W., & Karnouskos, S. (2016). Industrial automation based on cyber-physical systems technologies: Prototype implementations and challenges. *Computers in Industry, 81,* 11-25. doi:10.1016/j.compind.2015.08.004

Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of Family Medicine & Primary Care*, *4*, 324-327. doi:10.4103/2249-4863.161306

Lewis, S. (2015). Qualitative inquiry and research design: Choosing among five approaches. *Health Promotion Practice*, *16*, 473-475. doi:10.1177/1524839915580941

Liao, T., Rice, J., & Lu, J. (2015). The Vicissitudes of competitive advantage: Empirical evidence from Australian manufacturing SMEs. *Journal of Small Business Management*, *53*, 469-481. doi:10.1111/jsbm.12078

LinkedIn. (2018, March 25). About us [company website]. Retrieved from http://press.linkedin.com/about

Liu, D., Pu, X., & Schramm, M. E. (2016). Stock market response to strategic technical alliances between drug and biotechnology firms. *Journal of Product Innovation Management, 33*, 549-569. doi:10.1111/jpim.12305

Love, J. H., Roper, S., & Vahter, P. (2014). Learning from openness: The dynamics of breadth in external innovation linkages. *Strategic Management Journal*, *35*, 1703-1716. doi:10.1002/smj.2170

Maguire, R., Stoddart, K., Flowers, P., McPhelim, J., & Kearney, N. (2014). An interpretative phenomenological analysis of the lived experience of multiple concurrent symptoms in patients with lung cancer: A contribution to the study of symptom clusters. *European Journal of Oncology Nursing*, *18*, 310-315. doi:10.1016/j.ejon.2014.02.004

Malshe, A. Johnson, J. S., & Viio, P. (2017). Understanding the sales-marketing interface dysfunction experience in business-to-business firms: A matter of perspective. *Industrial Marketing Management 63,* 145–157. doi:10.1016/j.indmarman.2016.10.014

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: Guided by information power. *Qualitative health research*, *26*, 1753-1760. doi:10.1177/1049732315617444

Mariotto, F. L., Zanni, P. P., & Moraes, G. H. S. (2014). What is the use of a single-case study in management research? *Revista de Administração de Empresas*, *54*, 358-369. doi:10.1590/s0034-759020140402

Marquis, P., Lasch, K. E., Delgado-Herrera, L., Kothari, S., Lembo, A., Lademacher, C.,

. . . & Rosa, K. (2014). Qualitative development of a patient-reported outcome symptom measure in diarrhea-predominant irritable bowel syndrome. *Clinical and Translational Gastroenterology*, *5*, 59-72. doi:10.1038/ctg.2014.7

Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does sample size matter in qualitative research?: A review of qualitative interviews in IS research. *The Journal of Computer Information Systems, 54*, 11-22. doi:10.1080/08874417.2013.11645667

Martin, A. B., Hartman, M., Benson, J., & Catlin, A. (2016). National health spending in 2014: Faster growth driven by coverage expansion and prescription drug spending. *Health Affairs, 35*, 150-160. doi:10.1377/hlthaff.2015.1194

Matikainen, M., Rajalahti, T., Peltoniemi, M., Parvinen, P., & Juppo, A. (2015). Determinants of new product launch success in the pharmaceutical industry. *Journal of Pharmaceutical Innovation, 10,* 175-189. doi:10.1007/s12247-015-9216-7

McKinley, J. (2015). Critical argument and writer identity: Social constructivism as a theoretical Framework for EFL academic writing. *Critical Inquiry in Language Studies, 12,* 184-207. doi:10.1080/15427587.2015.1060558

McNally, R. C., & Schmidt, J. B. (2011). From the special issue editors: An Introduction to the special issue on decision making in new product development and innovation. *Journal of Product Innovation Management*, *28*, 619-622. doi:10.1111/j.1540-5885.2011.00843.x

Mealer, M., & Jones, J. (2014). Methodological and ethical issues related to qualitative

telephone interviews on sensitive topics. *Nurse Researcher*, *21*, 32-37. doi:10.7748/nr2014.03.21.4.32.e1229

Meara, J. M., Leather, A. J. M., Hagander, L., Alkire, B. C., Alonso, N., Ameh, E. A., … Yip, W. (2016). Global Surgery 2030: Evidence and solutions for achieving health, welfare, and economic development. *The Lancet, 386,* 569-624. doi:10.1016/S0140-6736(15)60160-X

Min, S., Kim, N., & Zhan, G. (2017). The impact of market size on new market entry: A contingency approach. *European Journal of Marketing*, *51*(1), 2-22. doi:10.1108/EJM-12-2013-0696

Moe-Byrne, T., Chambers, D., Harden, M., & McDaid, C. (2014). Behaviour change interventions to promote prescribing of generic drugs: A rapid evidence synthesis and systematic review. *BMJ open*, *4*, e004623. doi:10.1136/bmjopen-2013-004623

Mojtahed, R., Nunes, M. B., Martins, J. T., & Peng, A. (2014). Equipping the constructivist researcher: The combined use of semistructured interviews and decision-making maps. *Electronic Journal of Business Research Methods*, *12*(2), 87-95. Retrieved from http://www.ejbrm.com

Möller, K., & Parvinen, P. (2015). An impact-oriented implementation approach in business marketing research: Introduction to the Special Issue on "Implementing strategies and theories of B2B marketing and sales management". *Industrial Marketing Management, 45*, 3-11. doi:10.1016/j.indmarman.2015.02.025

Morley, M. J., Scullion, H., Collings, D. G., & Schuler, R. S. (2015). Talent

management: A capital question. *European Journal of International Management*, *9*(1), 1-8. doi:10.1504/EJIM.2015.066668

Morse, J. M. (2015a). Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative Health Research, 25*, 1212-1222. doi:10.1177/1049732315588501

Morse, J. M. (2015b). Data were saturated... *Qualitative Health Research, 25*, 587-588. doi:10.1177/1049732315576699

Morse, W. C., Lowery, D. R., & Steury, T. (2014). Exploring saturation of themes and spatial locations in qualitative public participation geographic information systems research. *Society & Natural Resources, 27*, 557-571. doi:10.1080/08941920.2014.888791

Moustakas, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage.

Muhammad, Y., & Torbjørn, T. (2014). Competitive forces and innovation strategies: A study of the Indonesian crab industries. *Journal of Agribusiness in Developing and Emerging Economies, 4*, 78-96. doi:10.1108/JADEE-02-2013-0008

Mulki, J. P., Jaramillo, F., Goad, E. A. & Pesquera, M. R. (2015). Regulation of emotions, interpersonal conflict, and job performance for salespeople. *Journal of Business Research, 68,* 623-630. doi:10.1016/j.jbusres.2014.08.009

Mullins, J. W., Walker, O. C., Boyd, H. W. Jr., & Jamieson, B. (2010). *Marketing.* New York, NY: McGraw-Hill/Irwin.

Naci, H., Carter, A. W. & Mossialos, E. (2015). Why the drug development pipeline is not delivering better medicines. *BMJ: British Medical Journal, 351,* 5542-5555. doi:10.1136/bmj.h5542

Nagasaka, N. (2016). Visualising historical trends in global maritime boundary delimitations since the1940s. *Marine Policy, 71,* 29-37. doi:10.1016/j.marpol.2016.05.017

Narayana, S. A., Pati, R. K., & Vrat, P. (2014). Managerial research on the pharmaceutical supply chain–A critical review and some insights for future directions. *Journal of Purchasing and Supply Management*, *20*, 18-40. doi:10.1016/j.pursup.2013.09.001

Nätti, S., Pekkarinen, S., Hartikka, A., & Holappa, T. (2014). The intermediator role in value co-creation within a triadic business service relationship. *Industrial Marketing Management*, *43*, 977-984. doi:10.1016/j.indmarman.2014.05.010

Nelson, J. (2016). Using conceptual depth criteria: Addressing the challenge of reaching saturation in qualitative research. Qualitative Research, doi:10.1177/1468794116679873

Nenonen, S., & Storbacka, K. (2014). Management of customer assets for increased value capture in business markets. *Management Decision*, *52*, 101-121. doi:10.1108/MD-04-2013-0213

Nenonen, S., & Storbacka, K. (2016). Driving shareholder value with customer asset management: Moving beyond customer lifetime value. *Industrial Marketing Management*, *52*, 140-150. doi:10.1016/j.indmarman.2015.05.019

Nikolopoulos, K., Buxton, S., Khammash, M., & Stern, P. (2016). Forecasting branded and generic pharmaceuticals. *International Journal of Forecasting*, *32*, 344-357. doi:10.1016/j.ijforecast.2015.08.001

Oates, J. (2015). Use of skype in interviews: The impact of the medium in a study of mental health nurses. *Nurse Researcher 22*, 13-18. doi:10.7748/nr.22.4.13.e1318

Obeidat, B. Y., Al-Hadidi, A., Tarhini, A., & Masa'deh, R. E. (2017). Factors affecting strategy implementation: A case study of pharmaceutical companies in the Middle East. *Review of International Business and Strategy*, *27*, 386-408. doi:10.1108/RIBS-10-2016-0065

Office of National Research Protection, National Institutes of Health, U.S. Department of Health and Human Services, (2018). *The Belmont report: Ethical principles and guidelines for the protection of human subjects of research* (NIH Publication No. L. 93-348). Retrieved from http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html

Olson, E. M., Slater, S. F., Hult, T. M. & Olson, K. M. (2018). The application of human resource management policies within the marketing organization: The impact on business and marketing strategy implementation. *Industrial Marketing Management, 69*, 62-73. doi:10.1016/j.indmarman.2018.01.029

Ospina, S. M., Esteve, M., & Lee, S. (2017). Assessing qualitative studies in public administration research. *Public Administration Review, 78*, 593-605. doi:10.1111/puar.12837

Özturan, P., Özsomer, A., & Pieters, R. (2014). The role of market orientation in

advertising spending during economic collapse: The case of Turkey in 2001. *Journal of Marketing Research (JMR)*, *51*, 139-152. doi:10.1509/jmr.11.0528

Paich, M., Peck, C., & Valant, J. (2011). Pharmaceutical market dynamics and strategic planning: A system dynamics perspective. *System Dynamics Review (Wiley)*, *27*, 47-63. doi:10.1002/sdr.458

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research*, *42*, 533-544. doi:10.1007/s10488-013-0528-y

Park, B. J. R., Srivastava, M. K., & Gnyawali, D. R. (2014). Walking the tight rope of coopetition: Impact of competition and cooperation intensities and balance on firm innovation performance. *Industrial Marketing Management*, *43*, 210-221. doi:10.1016/j.indmarman.2013.11.003

Parsons, H. M., Schmidt, S., Karnad, A. B., Yuanyuan, L., Pugh, M. J., & Fox, E. R. (2016). Association between the number of suppliers for critical antineoplastics and drug shortages: Implications for future drug shortages and treatment. *Journal of Oncology Practice*, *12*, 249-298. doi:10.1200/JOP.2015.007237

Paulus, T. M., & Lester, J. N. (2016). ATLAS.ti for conversation and discourse analysis studies. *International Journal of Social Research Methodology*, *19*, 405-428. doi:10.1080/13645579.2015.1021949

Payne, A., & Frow, P. (2017). Relationship marketing: Looking backwards towards the future. *Journal of Services Marketing, 31*(1), 11-15. doi:10.1108/JSM-11-2016-0380

Pearce, G., Thøgersen-Ntoumani, C., & Duda, J. L. (2014). The development of synchronous text-based instant messaging as an online interviewing tool. *International Journal of Social Research Methodology*, *17*, 677-692. doi:10.1080/13645579.2013.827819

Petty, N. J., Thomson, O. P., & Stew, G. (2012). Ready for a paradigm shift? Part 2: Introducing qualitative research methodologies and methods. *Manual Therapy*, *17*, 378-384. doi:10.1016/j.math.2012.03.004

Popa, F., Guillermin, M., & Dedeurwaerdere, T. (2015). A pragmatist approach to transdisciplinarity in sustainability research: From complex systems theory to reflexive science. *Futures, 65,* 45-56. doi:10.1016/j.futures.2014.02.002

Porter, M. E. (1985), *Competitive Advantage.* New York, NY: The Free Press.

Prajapati, V., Tripathy, S., & Dureja, H. (2013). Product lifecycle management through patents and regulatory strategies. *Journal of Medical Marketing*, *13*, 171-180. doi:10.1177/1745790413497388

Pramod, K., Tahir, M. A., Charoo, N. A., Ansari, S. H., & Ali, J. (2016). Pharmaceutical product development: A quality by design approach. *International Journal of Pharmaceutical Investigation*, *6*, 129-138. doi:10.4103/2230-973X.187350

Pronker, E., Weenen, T., Commandeur, H., Claassen, E., & Osterhaus, A. D. M. E. (2015). Scratching the surface: Exploratory analysis of key opinion leaders on rate

limiting factors in novel adjuvanted-vaccine development. *Technological Forecasting and Social Change*, *90*, 420-432. doi:10.1016/j.techfore.2014.04.017

Quy Nguyen, H., Corley, K. G., & Kraatz, M.S. (2014). From support to mutiny: Shifting legitimacy judgements and emotional reactions impacting the implementation of radical change. *Academy of Management Journal*, *57*, 1650-1680. doi:10.5465/amj.2012.0074

Rambe, P., & Nel, L. (2015). Technological utopia, dystopia and ambivalence: Teaching with social media at a South African university. *British Journal of Educational Technology*, *46*, 629-648. doi:10.1111/bjet.12159

Rémuzat, C., Kapuśniak, A., Caban, A., Ionescu, D., Radière, G., Mendoza, C., & Toumi, M. (2017). Supply-side and demand-side policies for biosimilars: An overview in 10 European member states. *Journal of Market Access & Health Policy*, *5*(1), 1307315. doi:10.1080/20016689.2017.1307315

Reypens, C., Lievens, A., & Blazevic, V. (2016). Leveraging value in multi-stakeholder innovation networks: A process framework for value co-creation and capture. *Industrial Marketing Management, 56,* 40-50. doi:10.1016/j.indmarman.2016.03.005

Ridley, D. B., & Régnier, S. A. (2016). The commercial market for priority review vouchers. *Health Affairs*, *35*, 776-783. doi:10.1377/hlthaff.2015.1314

Riggs, J. F., Widmier, S., Plank, R. E. (2016). The impact of pharmaceutical industry salesperson regulations, guidance statements, and laws on their sales behaviours:

A taxonomy with managerial insights. *International Journal of Pharmaceutical and Healthcare Marketing, 10*, 161-191. doi:10.1108/IJPHM-05-2015-0019

Roberts, L. D. (2015). Ethical issues in conducting qualitative research in online communities. *Qualitative Research in Psychology*, *12*, 314-325. doi:10.1080/14780887.2015.1008909

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology*, *11*, 25-41. doi:10.1080/14780887.2013.801543

Roulston, K., & Shelton, S. A. (2015). Reconceptualizing bias in teaching qualitative research methods. *Qualitative Inquiry*, *21*, 332-342. doi:10.1177/1077800414563803

Roy, K., Zvonkovic, A., Goldberg, A., Sharp, E., & LaRossa, R. (2015). Sampling richness and qualitative integrity: Challenges for research with families. *Journal of Marriage & Family*, *77*(1), 243-260. doi:10.1111/jomf.12147

Ruiz-Conde, E., Wieringa, J. E., & Leeflang, P. S. (2014). Competitive diffusion of new prescription drugs: The role of pharmaceutical marketing investment. *Technological Forecasting and Social Change*, *88*, 49-63. doi:10.1016/j.techfore.2014.06.006

Rusu, A., Kuokkanen, K., & Heier, A. (2011). Current trends in the pharmaceutical industry – A case study approach. *European Journal of Pharmaceutical Sciences, 44*, 437-440. doi:10.1016/j.ejps.2011.07.008

Sabatier, V., Craig-Kennard, A., & Mangematin, V. (2012). When technological

discontinuities and disruptive business models challenge dominant industry logics: Insights from the drugs industry. *Technological Forecasting and Social Change*, *79*, 949-962. doi:10.1016/j.techfore.2011.12.007

Schramm, M. E., & Hu, M. Y. (2013). Perspective: The evolution of R&D conduct in the pharmaceutical industry. *Journal of Product Innovation Management*, *30,* 203-213. doi:10.1111/jpim.12072

Schulz, S. A., Broekemier, G. M., & Burkink, T. J. (2014). Attitudes and beliefs regarding direct-to-consumer advertising of pharmaceutical drugs: An exploratory comparison of physicians and pharmaceutical sales representatives. *Health Marketing Quarterly*, *31*, 279-291. doi:10.1080/07359683.2014.936297

Schumock, G. T., Li, E. C., Wiest, M. D., Suda, K. J., Stubbings, J., Matusiak, L. M., & ... Vermeulen, L. C. (2017). National trends in prescription drug expenditures and projections for 2017. *American Journal of Health-System Pharmacy*, *74*, 1158-1173. doi:10.2146/ajhp170164

Shabaninejad, H., Mehralian, G., Rashidian, A., Baratimarnani, A., & Rasekh, H. R. (2014). Identifying and prioritizing industry-level competitiveness factors: evidence from pharmaceutical market. *DARU Journal of Pharmaceutical Sciences*, *22*(1), 22-35. doi:10.1186/2008-2231-22-35

Shapka, J. D., Domene, J. F., Khan, S., & Yang, L. M. (2016). Online versus in-person interviews with adolescents: An exploration of data equivalence. *Computers in Human Behavior*, *58*, 361-367. doi:10.1016/j.chb.2016.01.016

Simon, R., Latreille, J., Matte, C., Desjardins, P., & Bergeron, E. (2014). Adherence to

adjuvant endocrine therapy in estrogen receptor-positive breast cancer patients with regular follow-up. *Canadian Journal of Surgery*, *57*, 26-32. doi:10.1503/cjs.006211

Singaraju, S. P., Nguyen, Q. A., Niininen, O., & Sullivan-Mort, G. (2015). Social media and value co-creation in multi-stakeholder systems: A resource integration approach. *Industrial Marketing Management, 54,* 44-55. doi:10.1016/j.indmarman.2015.12.009

Singh, J., & Jayanti, R. K. (2013). When institutional work backfires: Organizational control of professional work in the pharmaceutical industry. *Journal of Management Studies*, *50*, 900-929. doi:10.1111/joms.12022

Smith, B. (2012). Excellence in market access strategy: A research-based definition and diagnostic tool. *Journal of Medical Marketing: Device, Diagnostic and Pharmaceutical Marketing*, *12*, 259-266. doi:10.1177/1745790412467641

Smith, J., & Firth, J. (2011). Qualitative data analysis: The framework approach. *Nurse Researcher, 18*, 52-62. doi:10.7748/nr2011.01.18.2.52.c8284

Smith, J. A., & Osborn, M. (2014). Interpretative phenomenological analysis as a useful methodology for research on the lived experience of pain. *British Journal of Pain, 8*, 41-42. doi:10.1177/2049463714541642

Song, C. H., & Han, J. W. (2016). Patent cliff and strategic switch: Exploring strategic design possibilities in the pharmaceutical industry. *SpringerPlus, 5*(1), 1-14. doi:10.1186/s40064-016-2323-1

Spieth, P., & Schneider, S. (2016). Business model innovativeness: Designing a formative measure for business model innovation. *Journal of Business & Economics, 86*, 671-696. doi:10.1007/s11573-015-0794-0

Spithoven, A., & Teirlinck, P. (2015). Internal capabilities, network resources and appropriation mechanisms as determinants of R&D outsourcing. *Research Policy*, *44*, 711-725. doi:10.1016/j.respol.2014.10.013

St. Pierre, E. A., & Jackson, A. Y. (2014). Qualitative data analysis after coding. *Qualitative Inquiry, 20*, 715-719. doi:10.1177/1077800414532435

Sternitzke, C. (2014). Drug repurposing and the prior art patents of competitors. *Drug Discovery Today, 19*, 1841-1847. doi:10.1016/j.drudis.2014.09.016

Story, V. M., Raddats, C., Burton, J., Zolkiewski, J., & Baines, T. (2016). Capabilities for advanced services: A multi-actor perspective. *Industrial Marketing Management, 60*, 54-68. doi:10.1016/j.indmarman.2016.04.015

Stros, M., & Lee, N. (2015). Marketing dimensions in the prescription pharmaceutical industry: A systematic literature review. *Journal of Strategic Marketing*, *23*, 318-336. doi:10.1080/0965254X.2014.931878

Tenn, S., & Wendling, B. W. (2014). Entry threats and pricing in the generic drug industry. *Review of Economics and Statistics*, *96*, 214-228. doi:10.1162/REST_a_00382

Thomas, A., Pham, D. T., Francis, M., & Fisher, R. (2015). Creating resilient and sustainable manufacturing businesses – a conceptual fitness model. *International Journal of Production Research*, *53*, 3934-3946.

doi:10.1080/00207543.2014.975850

Thomas, D. R. (2017). Feedback from research participants: Are member checks useful in qualitative research? *Qualitative Research in Psychology, 14*(1), 23-41. doi:10.1080/14780887.2016.1219435

Tight, M. (2016). Phenomenography: The development and application of an innovative research design in higher education research. *International Journal of Social Research Methodology*, *19*, 319-338. doi:10.1080/13645579.2015.1010284

Touboulic, A., & Walker, H. (2015). Theories in sustainable supply chain management: A structured literature review. *International Journal of Physical Distribution & Logistics Management*, *45*, 16-42. doi:10.1108/IJPDLM-05-2013-0106

Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative Inquiry, 16*, 837-851. doi:10.1177/1077800410383121

Tsang, E. W. (2014). Case studies and generalization in information systems research: A critical realist perspective. *The Journal of Strategic Information Systems*, *23*, 174-186. doi:10.1016/j.jsis.2013.09.002

United States Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics. (2018, March). May 2013 National industry-specific occupational employment and wage estimates: NAICS 325400 - Pharmaceutical and medicine manufacturing. Retrieved from http://www.bls.gov/oes/CURRENT/naics4_325400.htm

Van der Shans, S., Goossens, L. M. A., Boland, M. R. S., Kocks, J. W. H., Postma, M. J., Van Boven, J.,F.M., & Rutten-van Mölken, M.,P.M.H. (2017). Systematic review

and quality appraisal of cost-effectiveness analyses of pharmacologic maintenance treatment for chronic obstructive pulmonary disease: Methodological considerations and recommendations. *PharmacoEconomics, 35*(1), 43-63. doi:10.1007/s40273-016-0448-2

Varpio, L., Ajjawi, R., Monrouxe, L. V., O'Brien, B. C., & Rees, C. E. (2017). Shedding the cobra effect: Problematising thematic emergence, triangulation, saturation and member checking. *Medical Education*, *51*, 40-50. doi:10.1111/medu.13124

Venkatesh, V., Brown, S. A., & Sullivan, Y. W. (2016). Guidelines for conducting mixed-methods research: An extension and illustration. *Journal of the Association for Information Systems*, *17*, 435-495. doi:10.17705/1jais.00433

Vidal, E., & Mitchell, W. (2018). Virtuous or vicious cycles? The role of divestitures as a complementary Penrose effect within resource□based theory. *Strategic Management Journal, 39*(1), 131–154. doi:10.1002/smj.2701

Visiongain (2018a). *5th pharmaceutical lifecycle management*. Retrieved from http://www.visiongain.com

Visiongain (2018b). *Pharmaceutical product life cycle management 2010-2020*. Retrieved from http://www.visiongain.com

Wagner, S., & Wakeman, S. (2016). What do patent-based measures tell us about product commercialization? Evidence from the pharmaceutical industry. *Research Policy*, *45*, 1091-1102. doi:10.1016/j.respol.2016.02.006

Walden University. (2018). DDBA_Rubric (2016, March). Retrieved from http://academicguides.waldenu.edu/researchcenter/osra/dba

Ward, K., Gott, M., & Hoare, K. (2015). Participants' views of telephone interviews within a grounded theory study. *Journal of Advanced Nursing, 71*. doi:10.1111/jan.12748

Wiggins, N., Hughes, A., Rodriguez, A., Potter, C., & Rios-Campos, T. (2014). La palabra es salud (the word is health) combining mixed methods and CBPR to understand the comparative effectiveness of popular and conventional education. *Journal of Mixed Methods Research, 8*, 278-298. doi:10.1177/1558689813510785

Williams, B. (2015). How to evaluate qualitative research. *American Nurse Today, 10*(11), 31‑38. Retrieved from http://americannursetoday.com

Wirtz, J., Tuzovic, S., & Kuppelwieser, V. G. (2014). The role of marketing in today's enterprises. *Journal of Service Management*, *25*, 171-194. doi:10.1108/JOSM-01-2014-0037

Xie, X., & O'Neill, H. M. (2014). Learning and product entry: How diversification patterns differ over firm age and knowledge domains in U.S. generic drug industry. *Strategic Management Journal*, *35*, 440-449. doi:10.1002/smj.2101

Xu, Z., Frankwick, G. L., & Ramirez, E. (2016). Effects of big data analytics and traditional marketing analytics on new product success: A knowledge fusion perspective. *Journal of Business Research, 69,* 1562-1566. doi:10.1016/j.jbusres.2015.10.017

Yin, R. K. (2012). *Applications of case study research* (3rd ed.). Thousand Oaks, CA: Sage.

Yin, R. K. (2013). Validity and generalization in future case study evaluations.

Evaluation, *19*, 312-332. doi:10.1177/1356389013497081

Yin, R. K. (2017). *Case study research: Design and methods* (6th ed.). Thousand Oaks, CA: Sage.

Yu, Y., & Gupta, S. (2014). Pioneering advantage in generic drug competition. *International Journal of Pharmaceutical and Healthcare Marketing, 8*, 126-150. doi:10.1108/IJPHM-11-2013-0063

Yüksel, P. p., & Yıldırım, S. s. (2015). Theoretical frameworks, methods, and procedures for conducting phenomenological studies in educational settings. *Turkish Online Journal of Qualitative Inquiry*, *6*(1), 1-20. doi:10.17569/tojqi.59813

Zamawe, F. C. (2015). The implication of using NVivo software in qualitative data analysis: Evidence-based reflections. *Malawi Medical Journal, 27*(1), 13-15. doi:10.4314/mmj.v27i1.4

Appendix A: Email Invitation to Participants

Dear _____,

My name is Natasa Naneva. I am a doctoral candidate at Walden University. I invite you to participate in my research study.

The purpose of my study is to explore the views and experiences of marketing/business professionals who develop and implement marketing strategies (product price, place, promotion) to target markets, related to the marketing efforts in the pharmaceutical industry in the United States. Your experience will be of huge interest to my study. I hope to receive three to five volunteers to participate in a single case study.

If you are interested in participating, please review the attached informed consent before replying with your name and contact information. The first 5 volunteers will be accepted as potential participants. In order of receipt, I will extend an interview invitation beginning with the first to the fifth respondent until successfully completing the data collection process to support a single case study. I will reply to all volunteers notifying you of your initial status among volunteers.

Thank you kindly in advance for your time and consideration.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Natasa Naneva

Natasa Naneva
Doctoral Candidate
Doctorate of Business Administration: Marketing Management
Walden University - College of Management and Technology

Appendix B: Qualitative Interview Questions

Date:
Location:
Interviewee:

Primary Research Topic under Study

The primary research topic is "Marketing Strategies during Product Life Cycle in the Pharmaceutical Industry" in the United States.

A qualitative case study will be posed through interviews to explore the lived experiences of the participants regarding marketing solutions in the pharmaceutical industry, in the United States.

Primary Research Goal

The primary research goal is to explore and understand the marketing strategic aspects and identify the factors that are most strongly associated with the revenue generation and market shares in the pharmaceutical industry, in the United States.

Questions:

1. How do you pursue marketing (product, price, place, and promotion) during various stages of the product life cycle?
2. Briefly describe the premarket and postmarket strategies in terms of (a) marketing mix: product, price, place, and promotion, (b) sales goals, (c) customers, (d) competition/market, (e) targeted market shares, and (f) marketing goal, for each of the following stages: launch strategy, first year post-launch, and post first year of product launch.
3. How do these decisions relate to the company's revenue generation, market share, and profitability?

4. What factors (variables) are most strongly associated with revenue generation, market shares, and profitability?
5. What factors influence the decision-making process?
6. What factors influence the company's product portfolio management?
7. What are the marketing implications and the challenges in the current models of the company's product portfolio management?
8. What are the strategic activities that are essential in executing business strategies?
9. How does your company align the strategic marketing programs with the corporate strategies, and business strategies?
10. What are the key success factors for a pharmaceutical drug manufacturer (generic drug manufacturer or brand drug manufacturer) in order to fight competition, and the challenges within the industry?

Wrap Up Questions

1. What additional information would you like to add to the interview?
2. What are your suggestions for my research topic?
3. Who else do you think I should interview?

Appendix C: Interview Protocol

Introduce myself to the participant.

Thank the participant for voluntary participation in the study.

Briefly describe the purpose of the study.

Briefly describe the interview process.

Go over the consent form, discuss confidentiality and ethical issues, and answer participant's questions regarding participation in the study.

Ask for permission to turn on the audio recording device and start recording after obtaining permission.

Introduce the participant with generic code, such as INT1, INT2, and so on, to conceal his/her identity.

Begin the interview with question #1 and follow through question #10.

Continue the interview with the additional wrap up questions.

Take notes during the interview.

Check for verbal cues (such as changes in voice, or intonations) and nonverbal cues (such as body language) during the interview.

Inform the participant that I will summarize the answers for each question in a form of synopsis and email a copy for verification.

Discuss member checking with the participant:

Close the interview by thanking the participant for the cooperation and contribution to the study.