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Strategies for Improving Customer Retention for Medical Imaging Devices

Guillermo Sander
Walden University

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Walden University

College of Management and Technology

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Guillermo Sander

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Walden University
2022

Abstract

Strategies for Improving Customer Retention for Medical Imaging Devices

by

Guillermo Sander

MBA, Lake Forest Graduate School of Management, 2005

BA, Lake Forest College, 1988

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

March, 2022

Abstract

Some sales managers of medical imaging devices lack strategies to improve long-term customer retention. Increasing retention can save these sales managers up to 50% of their customer acquisition costs. Grounded in the service profit chain theory, the purpose of this qualitative multiple case study was to explore strategies sales managers of medical imaging devices use to improve long-term customer retention. The participants comprised seven sales managers of medical imaging devices from three companies who successfully achieved long-term customer retention. Data were collected using semistructured interviews and public documents. Thematic analysis was used to analyze the data. Three themes emerged: value-added services influence customer satisfaction and retention; providing employees resources, training, and support to ensure prompt resolution to unexpected events; and incentivizing personnel to build relationships and meet customer needs to improve customer satisfaction. A key recommendation is for sales managers to ensure product availability and minimize product downtime. The implications for positive social change include the potential for increased sales and satisfaction of healthcare service providers.

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Dedication

This study is dedicated to my family, mentors, and friends. You teach me something every day. Your help and encouragement to learn something new every day make me a better person.

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Section 1: Foundation of the Study

Customer retention is the process of engaging existing customers to continue buying products or services from a business (Youssef et al., 2018). In contrast, customer loyalty is a complex construct used by researchers to explore the customer's attitudes and behaviors about the product, service, or supplier that may influence the customer's decision to purchase a product or service (Dikcius et al., 2019). Youssef et al. (2018) explained that sales managers face the challenge of retaining customers and ensuring that customers will buy their products when they need to grow or when the product has reached the end of its useful life. Many authors consider retention closely related to customer loyalty (Debnath et al., 2016; Otto et al., 2020). However, researchers have found that firms may fail to retain loyal customers due to function or costs (Pandey & Mookerjee, 2018). For practical purposes, the focus and purpose of this study was customer retention. The goal of performing this study was to explore strategies used by sales managers of medical imaging devices to improve long-term customer retention

Background of the Problem

Some researchers have found that acquiring a new customer costs more than retaining one (Min et al., 2016, p. 738). Min et al. (2016) explained that the costs related to customer acquisition and retention might influence business performance. Medical imaging devices have lifespans exceeding 10 years, carry a high cost, and require regular maintenance, demanding a long-term service relationship with the supplier and requiring retention strategies that rely on the product and long-term service delivery (DeStigter et

al., 2019; Feng et al., 2020). Customer retention is considered critical to long-term business success (Youssef et al., 2018). Sales managers of medical imaging devices face the challenge of achieving customer retention when many years can pass between purchases, and many rely on postsale maintenance and repair services to improve long-term customer retention (Feng et al., 2020). Once a customer has purchased, installed, and put medical imaging equipment in operation, the device becomes part of the workflow. There is little need to engage the manufacturer beyond preventive maintenance and the occasional repair. There is no industry benchmark for customer retention, and sharing sales or customer information is discouraged by the code of ethics of the Medical Imaging and Technology Alliance (MITA) industry group (National Electrical Manufacturers Association, 2020).

Some researchers have found that users may approach replacement purchases as a completely new process because of the medical imaging device's longevity and advances in technology, exploring all available options and placing little value on long-term satisfaction (Pedeliento et al., 2016). Researchers have not fully explored the business-to-business (B2B) environment in general (Lilien, 2016), and research exploring the repurchase of medical imaging devices is minimal. Customer retention in medical imaging devices may be relevant to business because the U.S. medical device market is the largest globally and is expected to grow to \$208 billion by 2023 (International Trade Administration, 2020). The cost of acquiring and retaining customers can impact profitability for all firms in an industry (Min et al., 2016). In this study, I explored the

strategies used by sales managers of medical imaging devices to improve long-term customer retention. The intent of performing this study was to help others increase customer retention to improve their business performance.

Problem and Purpose

Service delivery significantly influences customer retention (Chao & Cheng, 2019, p. 1351). However, medical imaging devices have an average replacement cycle that exceeds 10 years, making customer retention a long-term challenge (DeStigter et al., 2019, p. 6). The general business problem is that some sales managers lack strategies to improve long-term customer retention. The specific business problem is that some sales managers of medical imaging devices lack strategies to improve long-term customer retention.

Therefore, the purpose of this qualitative multiple case study was to explore the strategies used by sales managers of medical imaging devices to improve long-term customer retention. The implications for positive social change include influencing the strategies used by sales managers to improve customer satisfaction, increase repurchases, and invest in developing technologies that can help accelerate accurate diagnosis, improve patient care, and reduce healthcare providers' costs.

Population and Sampling

The purpose of this qualitative multiple case study was to explore the strategies used by sales managers of medical imaging devices to improve long-term customer retention. Answering the research question required an understanding of successful

strategies. Therefore, the targeted population was seven managers successfully overseeing sales of medical imaging devices in the U.S. East Coast region.

Nature of the Study

Researchers use quantitative methods, qualitative methods, or a mix of both (Yin, 2018). The quantitative methodology is used to analyze numerical data to examine variables' characteristics or the significance of relationships among variables. In contrast, using qualitative methods helps researchers develop rich data and thick descriptions by using text, images, and other nonnumerical data to explore attitudes and perceptions of a phenomenon (Saunders et al., 2015). Mixed-method researchers combine both methodologies (Schutt, 2015). The purpose of this qualitative multiple case study was to explore the strategies used by sales managers of medical imaging devices to improve long-term customer retention. Quantitative and mixed methodologies are designed to examine and explore relationships between defined variables and cannot fully capture the depth and breadth of information needed for a complete exploration of phenomena with unknown variables. Therefore, quantitative and mixed methodologies were not appropriate for this study.

I considered the four research designs for a qualitative study proposed by Saunders et al. (2015): (a) ethnography, (b) phenomenology, (c) narrative, and (d) case study. Researchers using ethnography seek to understand groups of people by observing their behavior without intervention (Fusch et al., 2017). Phenomenological designs are used to understand constructs or the meanings of personal lived experiences as perceived

by individuals and communities (Flynn & Korcuska, 2018). Qualitative researchers use narrative designs to collect personal life stories and supporting materials from individuals to recreate the context and chain of events of specific lived experiences (Creswell & Poth, 2017). The purchase of medical imaging devices is rarely a part of everyday life (ethnography), does not have a disruptive or lasting effect on the community (phenomenology), and not a result of a chain of events (narrative). Therefore, ethnography, phenomenology, and narrative designs were not adequate to answer the research question. In contrast, the case study methodology is used to explore a process or method as experienced by the people involved (Yin, 2018). Researchers using the case study method rely on asking open-ended questions such as “why,” “how,” or “what” to participants to identify and explore research phenomena (Yin, 2018). In addition to questions, researchers triangulate their findings by observing actual behaviors to better understand phenomena (Elsäßer & Wirtz, 2017). The multiple case study method builds upon a single case study by expanding the number of cases to increase the possibility of replication and generalization (Yin, 2018). Purchasing medical imaging devices is a complex short-term process used by multiple health organizations. Therefore, the single case, event, or narrative phenomenological designs were not well suited for this research. For these reasons, the qualitative, multiple case study design was appropriate for exploring the strategies used by sales managers of medical imaging devices to improve long-term customer retention.

Research Question

What strategies are used by sales managers of medical imaging devices to improve long-term customer retention?

Interview Questions

1. What are the strategies you use for retaining customers?
2. Based on your organization's experience, what role does product or service satisfaction play in customer retention?
3. What were the key barriers to implementing your organization's successful strategies for retaining customers of medical imaging devices?
4. How did your organization address the key barriers to implementing its successful strategies for retaining medical image device customers?
5. How does your organization assess the effectiveness of its strategies for retaining its medical image device customers?
6. What methods do you use to ensure customer feedback is captured and used to improve long-term customer retention?
7. How do you address situations that hinder customer retention?
8. How does the service you provide bring additional value to the customer?
9. How do the services you offer help improve customer retention?
10. What else can you share with me about your organization's strategies to create value and retain medical imaging device customers?

Conceptual Framework

The service profit chain (SPC) theory and model were used to facilitate my understanding of the strategies used by sales managers of medical imaging devices to improve long-term customer retention. The authors of the conceptual SPC model, introduced by Heskett et al. (1994), proposed a series of links describing how employee satisfaction can lead to customer satisfaction, retention, and increased revenue. SPC theorists proposed that creating internal conditions that improve employee satisfaction (internal service quality) positively influences employee productivity and the ability to provide better services to the customer. For example, an employee with the necessary tools, training, and authority can perform their function faster, with higher quality, and at a lower cost. Internal efficiencies help influence the quality of the service provided to customers (external service quality) to affect customer satisfaction, leading to retention, repeat business, and referrals, defined as customer loyalty by Heskett et al. (1994). Researchers of the SPC theory have shown that service satisfaction has varying levels of influence on customer satisfaction, loyalty, and repurchases in B2B transactions (Huang et al., 2019). In a contrasting fashion, some researchers have found that creating value for customers through value-added services can go beyond influence to become a differentiation factor in the decision to repurchase (Youssef et al., 2018). However, the researchers who proposed the theory of the value-added service explained that value is dependent on the customer's perception (Dan et al., 2018). The SPC theory was chosen as the guideposts to explore the strategies used by sales managers of medical imaging

devices to improve long-term customer retention because SPC theorists focused on the intrafirm factors that influence customer retention.

Operational Definitions

External service quality: External service quality is a customer-focused construct that encompasses the perceptions of the quality of the service received and includes outcome quality, overall quality, performance, and value received (Hogreve et al., 2017).

Internal service quality: Internal service quality is an employee-focused construct that encompasses the processes, policies, tools, training, support services, leadership, and authority to enable employees to perform their duties and collaborate and support other internal departments (Wong et al., 2019).

Medical imaging devices: Medical imaging devices are different types of equipment used to view the human body to diagnose, monitor, or treat medical conditions. Medical imaging devices include X-ray, fluoroscopy, ultrasound, magnetic resonance imaging (MRI), and computed tomography (CT).

Repurchase intent: Repurchase intent is a customer's willingness and ability to purchase a product from an existing supplier (Russo et al., 2016).

Value-added services: Value-added services are the various services, beyond product warranties, that suppliers perform to add value to the product, meet consumers' demands, and create a competitive advantage (Dan et al., 2018).

Assumptions, Limitations, and Delimitations

Assumptions

Assumptions in research are facts that do not have the support of substantial evidence (Ellis & Levy, 2009). The key assumptions in this study were that sales managers have knowledge about their products, market, and customers and that the strategies described by the sales managers directly impact long-term customer retention. A second assumption was that sales managers are confident about their understanding of market and customer conditions to create and implement successful strategies to improve long-term customer retention. However, the objective measurement and effect of strategy on long-term customer retention were beyond the scope of this exploratory case study. Member checking and industry data were used to verify the strategy's effectiveness and validate the assumptions. A final assumption was that the managers interviewed provided truthful and honest answers to my questions.

Limitations

According to Ellis and Levy (2009), limitations refer to the potential weaknesses of a study. Dependence on the participants' honesty and willingness to share information is a potential limitation for almost any qualitative study that relies on interview data from volunteer participants. The lack of scholarly or publicly available data on customer retention for medical imaging devices increases the importance of obtaining accurate and complete information. In reviewing the data from interviews, every researcher has to rely on the participants' integrity and expertise (Ellis & Levy, 2009). Another limitation was

that I interviewed a small sample. Participants included seven managers overseeing sales of medical imaging devices who had been successful in retaining customers in the U.S. East Coast region. Brear (2019) explained that small samples in qualitative research are generally perceived as a potential weakness in someone else being able to replicate the findings of a particular study.

Delimitations

Delimitations are boundaries set by the researcher in a study to inform readers of what is and is not in the study (Ellis & Levy, 2009). The study's scope was limited to a sample of seven managers overseeing sales of medical imaging devices who had been successful in retaining customers in the U.S. East Coast region. Perry (2012) suggested that the delimitations of a study are always researcher-imposed restrictions for obtaining focused findings and results.

Significance of the Study

Many practitioners and business authors emphasize the importance of customer retention (Mittal et al., 2018; Rauyruen et al., 2009; Russo et al., 2016). Most current research has explored and measured B2B strategies for customer retention in products where transactions are continuous and frequent (Harmeling et al., 2017). However, few researchers are exploring infrequent or capital goods transactions. The goal of exploring strategies used by sales managers of medical imaging devices to improve long-term customer retention is to support a more in-depth understanding of an essential but underserved need.

Contribution to Business Practice

Customer satisfaction is generally considered an antecedent to retention (Hogreve et al., 2017). While there are multiple metrics to measure customer satisfaction, practitioners have had challenges developing and deploying processes to help create strategies to improve long-term customer retention (Mittal et al., 2018; Rauyruen et al., 2009; Russo et al., 2016). The goal in performing this study was to help understand the strategies used by sales managers of medical imaging devices to improve long-term customer retention through identifying and documenting effective practices. Improving retention aims to generate additional revenues that can support the investment in new products and technologies to drive growth to benefit customers, employees, and shareholders.

Implications for Social Change

The implications for positive social change include the potential for companies to improve the value of medical imaging devices to customers. Positive social change can also happen by creating new medical imaging devices that meet customers' needs and improve the quality of diagnostic reports and patient experience while reducing care costs for individuals and society.

A Review of the Professional and Academic Literature

The purpose of this qualitative multiple case study was to explore the strategies used by sales managers of medical imaging devices to improve long-term customer retention. Saunders et al. (2015) proposed that the literature review provides a synthesis

and critical analysis of the theories that create the framework for research. The literature review aims to provide a foundation for the study and uncover knowledge gaps to justify and legitimize the research question and objectives. Multiple theories were considered and are discussed before the conclusion. The SPC theory was used as the framework for my study to support the exploration of strategies used for long-term customer retention.

The literature included peer-reviewed articles and industry and government sources (as shown in Table 1). The topics searched included customer retention, the SPC model, value-added services, and the elements contributing to long-term customer retention. Transactions for products and services in business to consumer (B2C) and B2B environments were explored.

Research dealing with durable goods, medical devices, and infrequent B2B transactions involving medical devices or products requiring ongoing maintenance was considered especially relevant. Articles were retrieved from the Walden University library, Google Scholar, EBSCO, Elsevier, Emerald, Taylor & Francis, and Thoreau databases and checked against Ulrich's periodicals directory to verify peer-review status. The key search terms used for the literature review included *customer retention*, *customer satisfaction*, *customer loyalty*, *service profit chain theory*, *value-added service*, *switching costs*, and combinations and variations of keywords. The terms *loyalty* and *retention* were used interchangeably. The literature review includes 120 references, and the complete study includes 155. Ulrich's periodicals directory was used to verify peer-review status.

Table 1*Sources of Data for Literature Review and Proposal*

	Literature review references published before 2017	Literature review references published on or after 2017	Total literature review references	Other references before 2017	Other references on or after 2017	Total proposal references
Books	1	0	1	5	4	10
Peer-reviewed journals	16	100	116	11	15	142
Industry and government sources	0	3	3	0	0	3
Total references	17	103	120	19	19	155
Total % peer-reviewed references published on or after 2017			86%			76%

Note. Number and percentage of references published before and after 2017. All references were from government sources, peer-reviewed journals, and books. The literature review includes 86% of references published within the last 5 years. The proposal includes 76% of references published before 2017.

The organization of the topics in the literature review is as follows: (a) customer retention framework, (b) the service profit chain theory, (c) alternate theories considered (d) elements of the service profit chain, and (e) service delivery models for medical devices. The selection criteria for inclusion of literature were based on the author's theoretical approach, prioritizing the service-profit chain theory, followed by service satisfaction, delivery, and value-added service. The planned method for this doctoral study was a multiple case study.

Customer Retention Framework

Customer retention is the process of engaging existing customers to continue buying products or services from a business (Youssef et al., 2018). Customer retention and its impact on the firm's performance are vast areas of interest for many researchers (Otto et al., 2020). Ascarza et al. (2018) proposed customer retention as a crucial objective for business because retaining customers costs less than acquiring new ones. Some researchers measure customer retention by measuring repeat purchases without accounting for the attitudes or influences that can influence the purchase decision (Takumi, 2019). However, most customer retention theorists explore the phenomena through a broader spectrum using three constructs: customer relationships, customer satisfaction, and customer loyalty (Otto et al., 2020). Customer retention theorists argue that beyond the product's attributes, the combination of customer relationships, satisfaction, and loyalty influence retention and, in some cases, attract new customers (Chao & Cheng, 2019).

Researchers argue that customer relationships, satisfaction, and loyalty are related to one another and that an increase in one of the constructs positively affects the others (Youssef et al., 2018). While researchers have not yet agreed on standard definitions for satisfaction, retention, or loyalty, understanding the constructs that influence customer retention is essential to organizations (Debnath et al., 2016) Ascarza et al., 2018; Otto et al., 2020; Youssef et al., 2018). Customer retention theory covers multiple concepts, industries, and applications. The following paragraphs are intended to provide a general baseline understanding of the theoretical assumptions used for exploring successful strategies for long-term customer retention in the medical imaging devices industry.

Customer Relationships

As people interact by buying and selling products and services, multiple financial, social, and structural bonds and relationships are created (Zolkiewski et al., 2017). Firms invest significant resources in building, maintaining, and nurturing customer relationships as part of their sales strategy to engage their customers and promote attitudinal and behavioral loyalty (Harmeling et al., 2017). The continuous process of establishing and nurturing relationships between buyers and sellers is intended to maximize mutual long-term benefits that, in turn, contribute to strengthening the relationship (Alzoubi et al., 2020). Some researchers argue that relationships are essential to creating and cocreating products and services (Gremler et al., 2020; Kingshott et al., 2020; Tor et al., 2016). The construct of customer relationships has many variations; however, the common components of the construct used by many researchers include trust, commitment, and

conflict handling (Debnath et al., 2016). Debnath et al. (2016) explained that trust and commitment are essential to relationships and that the role of conflict resolution can have a disproportionate effect. Furthermore, relationships evolve and can have a cumulative effect on customer satisfaction and repurchases (Otto et al., 2020).

Some authors have suggested that customer relationships can affect the response to problems and the perception of conflict handling, explaining that a good relationship may reduce the impact and improve resolution to service failures (Chao & Cheng, 2019). An alternate point of view is that relationship longevity could lead to brand fatigue and drive customer defection, even if the relationship is positive (Friend & Johnson, 2017).

Customer relationships are part of most transactions, and their impact increases with the frequency of interaction (Debnath et al., 2016). Most customer relationship researchers have relied on products and industries where frequent interactions are common to explore relationships and measure their impact on firm performance (Harmeling et al., 2017). Takumi (2019) noted that measuring and maintaining customer relationships when products or services are infrequently purchased is a complicated task because perceptions and intentions vary over time. Pedeliento et al. (2016) explained that sales managers should consider customer relationships in their long-term customer retention strategies while being aware that buyers of some capital goods view replacement purchases as a completely new process, exploring all available options. Medical devices are infrequently purchased capital goods (DeStigter et al., 2019);

therefore, the influence of customer relationships on customer retention may differ from other industries.

The role of customer relationships and their influence on firm performance led researchers to develop customer relationship management (CRM) theory (Youssef et al., 2018). CRM researchers explore the social, financial, and structural bonds formed through continuous commercial interactions (Zolkiewski et al., 2017). CRM theory is discussed in more detail as an alternative theory considered for this study.

Customer Satisfaction

Customer satisfaction is considered an antecedent to retention (Hogreve et al., 2017). A commonly accepted definition of customer satisfaction is the customers' judgment of the utility and pleasure derived from the product or service after the purchase (Otto et al., 2020). The product attributes combined with the postsale service and support are critical determinants of customer satisfaction (Strydom et al., 2020). Garver and Williams (2020) explained that the mix of product and service attributes, stated and inferred, is influenced by the performance and the relationship between buyer and seller. Many researchers have agreed that product and service attributes combine with relationships to contribute to the perception of customer satisfaction to varying degrees (Garver & Williams, 2020; Kotler & Levy, 1969; Takumi, 2019). Harmeling et al. (2017) explained that satisfaction is derived from the customer's comparison between expectations and the product or service received and is an antecedent for repurchase and retention. Satisfaction is not a static construct and can be influenced by several

cumulative factors that can vary over time (Zolkiewski et al., 2017); for example, satisfaction at the time of purchase may evolve and change (Otto et al., 2020; Takumi, 2019). Researchers have shown empirical evidence supporting the influence of customer relationships and satisfaction on repurchases and loyalty (Otto et al., 2020). Further discussion of literature exploring satisfaction and long-term customer satisfaction for durable goods is included in the context of service profit chain theory and medical imaging devices.

Customer Loyalty

Customer loyalty is considered the desired outcome of positive customer relationships and satisfaction over time (Ascarza et al., 2018; Debnath et al., 2016). Like relationships and satisfaction, customer loyalty is a complex construct that encompasses an array of customer behaviors and attitudes that reinforce and influence satisfaction and retention. Researchers have defined two types of customer loyalty constructs: behavioral and attitudinal loyalty (Gremier et al., 2020; Otto et al., 2020; Takumi, 2019). Behavioral loyalty focuses on customer behaviors, including repurchases, retention, and referrals (Heskett et al., 1994). Behavioral loyalty can be influenced by multiple tangible and perceived factors: contractual obligations, switching costs, commitment, trust, quality, and satisfaction (Russo et al., 2016). However, behaviors are not enough to understand the multidimensional nature of loyalty (Takumi, 2019).

Dikcius et al. (2019) explained that attitudinal loyalty is the customer's emotional attachment to the product, service, or brand. Ascarza et al. (2018) stated that corporate

image could create perceived value and loyalty from current and potential customers. Similarly, Ramaswami and Arunachalam (2016) found that the customer's attitudinal loyalty can generate referrals and recommendations as well as influence repurchases. Customer loyalty is cumulative, evolves, and influences relations and satisfaction with the product or service (Gremler et al., 2020; Takumi, 2019). Like relationships, loyalty is an ongoing process, and a single event rarely triggers the decision to defect from a supplier (Gremler et al., 2020). Loyalty results from the cumulative effect of a series of positive and adverse events or perceptions and actions taken that influence satisfaction and long-term customer retention.

Other Factors Influencing Customer Retention

Customer retention may not always result from relationships, satisfaction, or loyalty. Economic factors, such as pricing and switching costs, may lead a customer to repurchase, even if the attitude about the product or service is not positive (Russo et al., 2016). Emerging technologies are often in a state of evolution where the applications are not fully understood or researched; therefore, it is up to the buyer to assess the features that show promising but unfulfilled potential (Doneria & Vinodani, 2017). In many cases, economics or technology will drive buyers to purchase from a new vendor even if they are attitudinally satisfied with the incumbent.

Customer Retention in Medical Imaging Devices

Medical imaging device transactions are complex, are conducted between businesses, and are influenced by postsale service (DeStigter et al., 2019). Medical

imaging devices are tools used by healthcare professionals to view the human body to diagnose, monitor, or treat medical conditions (U.S. Federal Drug Administration, 2018). The complexity, strategic importance, and cost of medical imaging devices often lead customers to use groups of decision makers to evaluate options and select the product to be purchased. In many cases, the decision makers include personnel not directly related to the device's clinical use or operation. Medical imaging devices have lifespans exceeding 10 years, carry a high cost, and require regular maintenance, demanding a long-term service relationship with the supplier (DeStigter et al., 2019). Exploring strategies for long-term customer retention requires understanding the influence that cost, technology, and time between purchases have on relationships, satisfaction, and loyalty.

Researchers have found that relationships, satisfaction, and loyalty influence customer retention and vary with the type and frequency of purchase (Gremier et al., 2020; Harmeling et al., 2017; Otto et al., 2020; Takumi, 2019). In infrequent purchases of durable goods, the level and sources of influence on customer retention shift over time (Garver & Williams, 2020; Huang et al., 2019; Zolkiewski et al., 2017). At the time of initial purchase, product attributes, brand, and relationships between the decision makers and the supplier's sales representatives have a high degree of influence over the customer's product choice (Harmeling et al., 2017; Mittal et al., 2018). In contrast, satisfaction with the service received and the relationship between the product users and personnel involved in providing service influence customer retention (Debnath et al., 2016; Ramaswami & Arunachalam, 2016). Research exploring B2B transactions of

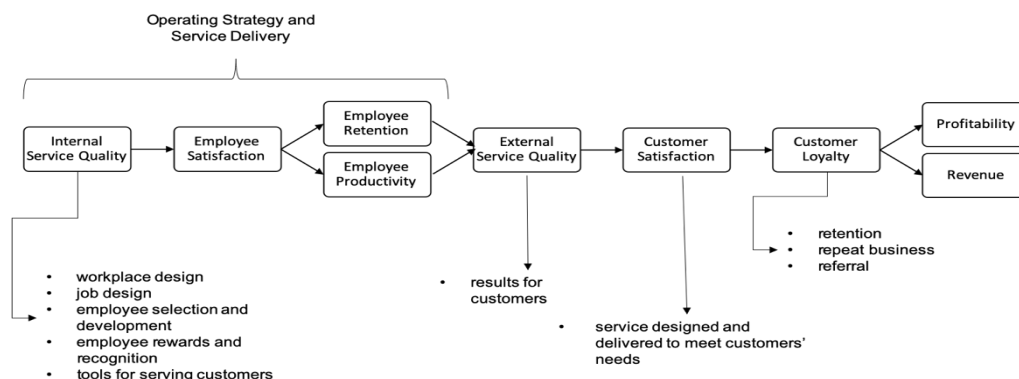
durable goods is limited (Lilien, 2016; Otto et al., 2020). Many customers approach replacement purchases as a completely new process, exploring all available options (Pedeliento et al., 2016). Sometimes customers select a different supplier due to fatigue with the existing brand, product, or service (Friend & Johnson, 2017) or acquire new technology (Doneria & Vinodani, 2017). Transactions involving medical imaging devices happen between business entities (B2B), are infrequent, and are influenced by product features and benefits during the purchase (Pedeliento et al., 2016). Additionally, postsale service and support are critical determinants of long-term customer satisfaction and retention (Strydom et al., 2020). Therefore, the product and postsales services must be considered when exploring the strategies used by sales managers of medical imaging devices to improve long-term customer retention.

There are many approaches to explore customer satisfaction. SPC theorists proposed a link between company structure policy and process, service satisfaction, customer satisfaction, retention, repeat business, and referrals (Hogreve et al., 2017). The service-profit chain (SPC) theorists explored customer retention focusing on factors under management control that influence long-term customer retention. For this reason, the SPC theory was chosen as the conceptual framework for this study.

The Service Profit Chain Theory

Heskett et al. (1994) introduced the SPC theory by proposing that a firm's manager's focus on improving internal and external service can create higher customer satisfaction and lead to long-term retention. Heskett et al. (1994) proposed that a firm's

operating strategy and service delivery influence external service value and enhance customer satisfaction and loyalty. The central idea proposed by SPC theorists is that sustainable corporate success is dependent on the actions taken by management to drive simultaneous satisfaction of customers and employees (Hogreve et al., 2017). The graphical representation of the SPC theory is the SPC model (See Figure 1). SPC theorists proposed that operational strategy and service delivery focus on equipping employees with the skills and authority to serve customers (internal service quality) can increase employee satisfaction, loyalty, and productivity. In turn, satisfied employees are more successful in delivering service to create customer satisfaction, loyalty and repurchases satisfaction (Heskett et al., 1994). The SPC theory has been embraced by firms and generated considerable attention from researchers (Hogreve et al., 2017). The SPC theorist provided a conceptual framework based on management actions. This approach is closely aligned with the purpose of this study of successful strategies used by sales managers of medical imaging devices to improve customer retention.

Figure 1*The Links in the Service Profit Chain*

Note. Service profit chain theorists explained that satisfaction in each link of the process influences the next and leads to revenue and profit improvements. From "Putting the Service-Profit Chain to Work," by J. L. Heskett, T. O. Jones, G. W. Loveman, W. E. Sasser, Jr., & L. A. Schlesinger, July 2008, *Harvard Business Review*. Copyright 2008 by the Harvard Business Publishing Corporation. Reprinted with permission.

Researchers have demonstrated correlations between the multiple elements of the SPC theory, demonstrating that management's actions can influence satisfaction and retention. Hogueve et al. (2017) performed a meta-analysis of 518 journal articles exploring the various aspects of the SPC theory and its extensions in B2C and B2B contexts, multiple industries, and regions of the world. The SPC theorists have found relationships between employee satisfaction and service quality; internal service quality and external service; leadership, employee satisfaction, external service; customer orientation; and the basic SPC tenets and extensions across multiple industries and geographies (Hogueve et al., 2017). Researchers proposed that, in some cases, the service received throughout the purchasing process is as important or more than the product itself

(Steward et al., 2019). In summary, the SPC theory and model have been accepted and applied globally.

The SPC framework has been explored beyond service-centric firms such as banks, mobile phones, and restaurants to include physical products because some customers view the purchase and postpurchase service as an integral part of the product (Marjanovic et al., 2018; Stormi et al., 2019). Son et al. (2021) used the SPC model to show that, while the product is essential to customer satisfaction, the service provided with the product plays a significant role in improving repurchase and customer retention. Additionally, the employee's satisfaction was shown to correlate to the perceived value and customer satisfaction directly. The validity and applicability of the SPC conceptual framework justify using SPC theory as the guidepost to understanding long-term customer retention for medical imaging devices. The elements of the SPC theory and their relationship to the phenomena are explored after a short discussion of alternative theories considered.

Alternative Theories: Customer Relationship Management (CRM) Theory

Customer relationships are an integral part of commercial interactions. CRM theory is widely researched; the focus of this section is to summarize the most relevant topics of CRM theory and its application to exploring strategies for long-term retention in medical devices. The discussion describes the reasons why CRM was not used as the conceptual framework for this study.

Customer relationship management theorists proposed that customer relationships can be measured and managed to acquire and retain customers to increase repurchases and profitability (Fotiadis & Vassiliadis, 2017). Araújo et al. (2018) show that interest and research related to CRM have continually increased to help address complex issues and enable organizations to improve performance. Researchers found that the mix of people, processes, and information technology (IT) can help sales managers understand how customer perception varies over time and predict customer behavior (Garver & Williams, 2020; Huang et al., 2019; Zolkiewski et al., 2017). While the emphasis is on strategy and its impact on firm performance, researchers explore CRM methodology, relationship marketing, service quality and customer loyalty, market orientation, strategy, practical implications, strategic management, and customer value (Araújo et al., 2018). Most CRM researchers focused on B2C transactions where the decision-maker is the same person or closely aligned (Araújo et al., 2018). CRM theorists seek to understand the multiple interactions between buyer and seller to help build and maintain long-term customer relationships and their effect on long-term customer retention and firm profitability.

CRM theory is not limited to transactions and can help drive organizational behavior. CRM theorists argued that product quality and meeting customer expectations are important because customer satisfaction is the fundamental condition for customer engagement and building trust and commitment (Huang et al., 2019). Garver and Williams (2020) proposed that the determination of the mix of product and service

attributes that are critical to satisfaction and that the process requires understanding stated and inferred attributes and that a reliable method to determine the ideal mix of features is yet to be defined. In a B2B environment, establishing and maintaining multiple relationships between firms help sellers have a deeper understanding of the customer's needs, wants, and motivations to provide a superior value than competitors (Youssef et al., 2018). CRM theorists explained that close connection with consumers helps firms understand needs and develop products and services that customers are willing to buy.

The type of product and importance to the customer will determine the relationship the customer is willing to have with the supplier. The authors of the CRM theory explored the factors that influenced relationships between buyers and sellers. Customers rely on a mix of objective (function, quality, value, switching costs) and affective (desire) factors in determining the type of relationship they want to maintain with the supplier (Youssef et al., 2018). Researchers proposed that the mix of objective and affective factors translate into attitudinal and behavioral factors that contribute to the customer's willingness to maintain a long-term relationship with the supplier (Garver & Williams, 2020; Huang et al., 2019; Youssef et al., 2018). CRM strategies for long-term customer retention emphasize regular interactions and may not be adequate to explore relationships where customers are unwilling to engage.

The development of strategies for CRM for medical imaging devices poses multiple challenges as price and attributes may outweigh the influence of relationships. Medical devices are capital goods with advanced technology that are not regularly

purchased (DeStigter et al., 2019). Fixed asset purchases tend to have a significant or long-term impact on the organization, and customers may approach all investments as a completely new process evaluating all alternatives (Pedeliento et al., 2016). Researchers have shown that customers will consider all available options when evaluating new technology to assess the features and promising potential (Doneria & Vinodani, 2017). In many cases, economic factors, such as pricing and switching costs, may outweigh other factors under consideration (Russo et al., 2016). In addition to price and attributes, targeting the decision-makers may be particularly difficult. Many businesses use teams to evaluate and purchase products and services; sometimes, the team members are not directly related to the use or operation of the product and focus solely on product attributes and price (Pedeliento et al., 2016).

In many cases, purchasing group members may not have a need or desire to maintain a long-term relationship with the supplier (Harmeling et al., 2017). Evanschitzky et al. (2020) found that relationships can fade over time as customers become disillusioned or abandoned by the supplier. The emphasis on price and features combined with the frequency of purchases indicates that CRM theory may not be adequate to explore strategies for long-term customer retention for medical imaging devices.

Alternative Theories: Service Recovery Theory

Service failures are inevitable in long-term relationships; however, appropriate recovery procedures can help overcome dissatisfaction and contribute to customer

retention. Researchers have found that the provider's actions to correct a service failure or customer complaint (recovery) significantly affect satisfaction (Chao & Cheng, 2019).

The service recovery theorists proposed that customer satisfaction can increase above the prefailure state after a successful service recovery (Hübner et al., 2018). Service recovery researchers explored the phenomena across multiple disciplines and levels of the organization across three fundamental stages: Antecedents to failure, recovery process, and postrecovery effects (Chao & Cheng, 2019; Hübner et al., 2018). Service recovery theory is relevant to strategies for long-term customer retention because it is focused on the specific events that influence customer satisfaction.

Researchers have found that service recovery in the B2B context can help retain the customer and help create preventive measures and even product enhancements to avoid future failures (Hübner et al., 2018). These same researchers, Hübner et al. (2018), explained that service failure and recovery in the B2B context could have a more significant influence on customer satisfaction because some failures can have a domino effect where the disruption spreads to clients' customers. Hübner et al. (2018) explained that, while service failures can cause criticism or negative word-of-mouth, service failures can be used as constructive criticism by the provider to correct the problem and take additional measures to avoid future failure. Researchers found that the response to the failure can vary depending on the impact on the customer organization (Hübner et al., 2018). An apology may be enough for minor events, while critical service failures may

require firm-level attention from the provider to reach a satisfactory solution to the customer (Chao & Cheng, 2019; Hübner et al., 2018; Van Vaerenbergh et al., 2019)

The customer's perception of the recovery process is influenced by the resources allocated to solve the service failure, the speed of resolution, and how the customer is treated throughout the process (Chao & Cheng, 2019; Van Vaerenbergh et al., 2019). Van Vaerenbergh et al. (2019) explained that service failures are disruptive to the customer's routine interaction with the supplier and that there are three stages to the service recovery experience. The first stage, prerecovery, begins when the customer becomes aware of the service failure. The prerecovery stage is followed by the recovery stage that starts when initial contact with the provider and ends when service is restored or the customer accepts that the organization is not capable of an appropriate response. The third, the postrecovery stage, is the period in which customers evaluate and qualify the prerecovery and recovery stages, and it is considered essential to satisfaction (Van Vaerenbergh et al., 2019). A prompt response, effective communication, and resolution of a service failure can have a disproportionately positive effect on the customer's perception.

Researchers proposed that the service recovery process can influence retention (Chao & Cheng, 2019; Hübner et al., 2018; Van Vaerenbergh et al., 2019). The service recovery process can have positive outcomes; when customers receive a satisfactory response and may feel valued by the service provider, satisfaction may exceed prefailure satisfaction scores or is higher than customers who did not experience a failure. In contrast, a recovery failure may cause significant dissatisfaction when customers feel

upset, annoyed, and even anger towards the provider (Chao & Cheng, 2019; Hübner et al., 2018; Van Vaerenbergh et al., 2019). Service recovery theorists contributed to the SPC definition of external service by emphasizing the importance of complaint handling and providing superior recovery when problems occur (Van Vaerenbergh et al., 2019). Effective strategies for long-term customer retention should stress the importance of service recovery.

Service recovery is critical for medical imaging devices. The FDA regulates and audits service failures and demands that manufacturers of medical devices document their processes for corrective action and preventive actions (CAPA) under the code of federal regulations (Quality System Regulation, 2021). This existing regulation mandates minimum response times and specifies the process and documentation for failure handling; therefore, the applicability of service recovery theory may be limited and may be insufficient to explore long term-customer retention. Implementing strategies to exceed the minimum requirement for resolutions can improve customer satisfaction and retention. However, service recovery theory may not be adequate to explore strategies for long-term customer retention in medical devices because all providers must meet the minimum standards for conflict resolution. Customers may appreciate faster responses and communication but expect and demand a minimum level of performance in service recovery.

The Elements of the Service Profit Chain Theory: Internal Service Quality

Management can influence how employees perform their functions effectively to improve customer satisfaction and retention. Heskett et al. (1994) defined internal service quality as the set of tools, training, and authority to serve customers. Internal service focuses on management's focus on employee productivity and satisfaction. The internal service quality construct includes workplace design, job design, employee selection and development, employee rewards and recognition, tools for serving customers, and leadership (Hogreve et al., 2017). Heskett et al. (1994) explained that internal services enable the organization to link a network of functional units to work together to satisfy employees and customers. Tools, processes, and policies are the fundamental elements of internal service quality; when employees have the tools, resources, and support to serve customers, their productivity and satisfaction increase.

Execution is critical to internal service quality and can influence employee and customer satisfaction. SPC researchers found that leadership, peer interaction, and task complexity influence motivation and moderate the downstream effects of internal service quality. L (Al-Musadieq et al., 2018; Buil et al., 2019; Lindsey Hall et al., 2016) and peer interactions (Prakash & Srivastava, 2019). The actions taken by leadership to improve internal service quality and communication have been shown to influence employee satisfaction and productivity (Bangwal & Tiwari, 2019; Kelloway & Myers, 2019; Park & Tran, 2018). Leadership can modify the internal work environment to influence employee satisfaction and productivity to align with customer retention strategy.

The role of internal service quality varies depending on the complexity of the service and the link to customer outcomes (Braun & Hadwich, 2017). Service offerings and industries are not homogeneous and differ in complexity (Benjarongrat & Neal, 2017). For example, Benjarongrat and Neal (2017) explained that complex services, such as healthcare, may require a flexible and resilient supply chain to provide the necessary tools and materials for operation, while a less complex service, like a bank branch, is less reliant on supply chain or logistics to provide service. Hogueve et al. (2017) summarized that the diverging results of previous research highlight the importance of leadership and service characteristics in determining internal service quality and the job demands, needs, and expectations. While simple, repetitive tasks require predefined processes, complex tasks may require flexibility and managerial support for effective execution.

SPC researchers considered internal service quality as the foundation of service delivery and an antecedent to employee satisfaction and productivity (Almohaimmeed, 2019; Karatepe & Olugbade, 2016; Sharma et al., 2016.). Ample research supports the argument that internal service quality is an antecedent to employee satisfaction (Braun & Hadwich, 2017; Wong et al., 2019). Management should ensure that employees can perform their functions effectively to influence customer satisfaction and retention.

The Elements of the Service Profit Chain Theory: Employee Satisfaction, Productivity, and Retention

Employee satisfaction is defined in multiple ways. Some researchers defined employee satisfaction as the feelings of gratification or prosperity from a meaningful

contribution, resulting in the person's perceived satisfaction with the job in general or distinctive job elements (Moorhead & Griffin, 2013). Employee satisfaction is a topic of interest for many disciplines, has been widely researched, and continues to evolve (Judge et al., 2017). Some researchers proposed that satisfied employees have positive attitudes toward their jobs and supporting the organization and its customers (Adeinat & Kassim, 2019). The influence of internal service on job satisfaction was relevant in most environments. Sharma et al. (2016) showed that internal service quality is a driver of employee satisfaction in service and non-service businesses. The effect of employee satisfaction on productivity and customer satisfaction is similar between environments where work is relatively predictable, such as manufacturing (Patel et al., 2020) and in highly heterogeneous environments like healthcare (Srivastava & Prakash, 2019). Employee satisfaction can increase productivity and influence customer satisfaction across functions and environments.

Interactions between departments influence employee satisfaction. Sharma et al. (2016) showed that internal service between functions influences employee satisfaction because both internal service providers and customers have predetermined exchanges and cannot change suppliers. For example, all departments must share IT resources. Many authors supported the proposition that a sense of teamwork and collaboration is essential to job satisfaction (Judge et al., 2017; Patel et al., 2020; Srivastava & Prakash, 2019). Internal interactions influence employee satisfaction and moderate firm performance.

SPC theorists argued that employee satisfaction influences productivity, retention, and external service. Heskett et al. (1994) proposed that satisfied employees are more productive, less likely to leave the organization, and more inclined to provide superior extremal service quality. Multiple researchers have shown that employee satisfaction is associated with higher employee retention and productivity (Adeinat & Kassim, 2019; Hogreve et al., 2017; Prentice, 2018; Wong et al., 2019). Extensive research confirmed that employee satisfaction is one of the key influencers to productivity and retention, noting that other factors play significant roles and that the mix of influences is evolving (Judge et al., 2017). Researchers have also proposed a reciprocal relationship where the frontline employee perceptions of the product and service quality delivered by the firm play a significant role in organizational identification, satisfaction, commitment, and customer orientation (Lindsey Hall et al., 2016; Shepherd et al., 2020). Luo et al. (2019) proposed that an environment that fosters and rewards competence and customer orientation through leadership support, internal collaboration and training that includes emotional intelligence leads to superior service delivery and customer satisfaction. In summary, when employees are satisfied with their job and the company's products and services, they feel better about themselves, are more productive, and are committed to the company's success. Employee satisfaction is another fundamental contributor under management's influence on customer satisfaction and retention.

Employee satisfaction influences external service. However, some SPC researchers questioned the magnitude of employee satisfaction, productivity, and

retention on external service quality (Adeinat & Kassim, 2019; Patel et al., 2020). In some cases, the effects of employee satisfaction on external service quality and customer satisfaction cannot be accurately measured because it may take a long time for the customer to perceive or form an opinion of the service provided (Strydom et al., 2020). Judge et al. (2017) cautioned that excessive emphasis on employee satisfaction and performance metrics not aligned to customer satisfaction could negatively influence external service quality and customer loyalty. While employee retention is desirable, researchers have found that new employees can bring new perspectives, uses of technology and point of view that can help create different approaches to customer service and create value to create new competitive advantages (Jirasevijinda, 2018). Therefore, overemphasizing employee satisfaction and retention may affect customer retention negatively. In general, SPC researchers agreed that employee satisfaction, retention, and productivity are drivers for external service and customer satisfaction if the goals and metrics align with the desired outcomes.

The Elements of the Service Profit Chain Theory: External Service Value and Customer Satisfaction

External service focuses on how service is delivered to the customer and how it can influence satisfaction. Hogueve et al. (2017) defined external service value as the customer's ratings of the firm's performance of various service dimensions, including reliability, responsiveness, assurance, empathy, and tangibles. Many authors agreed that customer satisfaction is crucial to repurchase behavior (Kotler & Levy, 1969). Product

and service satisfaction are necessary conditions for long-term retention. Customers will rarely repurchase a product or service that does not perform the function that the customer needs.

Researchers and practitioners agree that identifying the critical product and service attributes that are most important to customers is fundamental to satisfaction (Garver & Williams, 2020). Customer satisfaction is closely related to the functional characteristics associated with economic value such as product quality, price, communication, and cognitive aspects related to the service, expectations, and relationship with the manufacturer (McNeely et al., 2020; Mittal et al., 2018). The relative effect of each attribute in B2B customer repurchase varies by product or service and contributes to the customer's outcomes (Mittal et al., 2018). For example, product quality satisfaction with a critical component or service used to build the end-product will have a more substantial effect on repurchase. Some researchers have shown that in many industries, where product quality is relatively homogeneous, the influence of service quality may exceed product quality as one of the most crucial drivers for customer satisfaction (Hallencreutz & Parmler, 2019). Customer expectations, products, and services influence satisfaction at different levels that depend on the customer's needs and perceptions.

Determining the drivers for customer satisfaction in B2B settings has additional complexity. B2B transactions commonly involve multiple stakeholders with varying degrees of influence; in many cases, decision-makers are not the product or service users

(Mittal et al., 2018; Zolkiewski et al., 2017). Identifying the stakeholders to assess, quantify, and aggregate the customer's perceptions about the manufacture, product, and service or measure their influence on satisfaction can be challenging for researchers (Cortez & Johnston, 2017). Lilien (2016) proposed that perceptions of value and brand less influence B2B decisions for purchase because they involve higher prices and are often indirect purchases where the buying entity can be different from the user. The involvement of multiple stakeholders often leads to objective metrics to determine satisfaction (Susanti et al., 2019). Identifying the key drivers for customer satisfaction in B2B transactions is necessary and complicated.

The frequency of purchases adds complexity to understanding the drivers for satisfaction. Medical imaging devices stand out from other B2B exchanges because they are not frequently purchased. Medical imaging devices have lifespans exceeding 10 years which adds complexity to understanding the effect of product and service on overall satisfaction over the product's life (DeStigter et al., 2019; Trapero García & López Parrilla, 2019). In addition to the low frequency of transactions, product satisfaction depends on reconciling the needs of multiple stakeholders (physicians, administrators, and users) in terms of function, training, brand, trust, and cost (Trapero García & López Parrilla, 2019). Furthermore, satisfaction with the postpurchase service results from multiple interactions across a long time that involves people that may not have been involved in the product selection (DeStigter et al., 2019). For example, the purchasing department is no longer involved with the product after the purchase has been completed,

while end-users or operators, not included in the product selection, have frequent interaction with the product and the supplier's service. The different interactions and time between repurchases can limit the ability to assess customer satisfaction. However, strategies to improve long-term customer retention must strive to maximize customer satisfaction.

Measuring Customer Satisfaction. Customer satisfaction metrics have been a topic of interest for a long time. Researchers have investigated the association between customer satisfaction its various customer-level consequences, such as word of mouth (Ruvio et al., 2020), the share of wallet (Fotiadis & Vassiliadis, 2017), retention (Shaikh et al., 2018), and many others. Customer satisfaction has also been explored in the online and e-commerce contexts (Hult et al., 2019). The widespread interest in measuring customer satisfaction and its influence is that measuring the customer's perception of satisfaction with past performance (is the customer happy) helps identify the drivers for retention (Zolkiewski et al., 2017). The link between customer satisfaction and retention is one of the critical relationships proposed by SPC theorists.

Researchers use multiple methods to measure satisfaction with the quality of service received. Surveys and interviews are often used to gather information directly from the customers (Saunders et al., 2015; Shankar et al., 2019). Other methods, like mystery shoppers, rely on trained researchers as proxies for customers to evaluate the service provided (Dutt et al., 2019; Lee et al., 2019). Indirect methods involve statistical analysis of objective and quantifiable service delivery metrics, such as response times or

service performance against targets (Tas et al., 2019). While the methods and tools can vary, customer satisfaction with the service quality is measured against two similar but fundamentally distinct metrics: Expectations and performance.

Customer expectations are subjective (Rezaei et al., 2018). The service quality (SERVQUAL) approach, developed by Parasuraman et al. (1988), defined satisfaction as the pleasure or disappointment of comparing the perceived performance (or outcome) of the service received to the customer's expectations. Parasuraman et al. (1988) researched service firms to determine five key attribute dimensions that comprise service quality and influence satisfaction. The tangible characteristics of service are mostly related to the appearance of the location, equipment, and personnel delivering the service in combination with materials provided to the customer as proof of the service received, such as statements and service reports (Schönsleben, 2019). The reliability of the service represents the ability to deliver the service consistently and effectively (Rezaei et al., 2018). Responsiveness relates to the speed at which the service can be initiated and performed (Al-Neyadi et al., 2018). Assurance reflects the employee's competence, courtesy, and overall ability to inspire confidence and trust (Pekkaya et al., 2019). Empathy refers to the employee's ability to provide individual attention while communicating in a way that shows concern for the customer's problem and circumstance (Al-Neyadi et al., 2018; Pekkaya et al., 2019). Each of the attributes contributes, in varying degrees, to the overall measure of the service received compared to the

customer's expectations. The results of the SERVPERF may vary between customers and interactions as the customer expectations change.

In contrast to the SERVQUAL customer expectations approach, Cronin and Taylor (1992) proposed that service satisfaction should be compared against the service provider committed to delivering, regardless of customer expectations, in their SERVPERF approach. Both SERVQUAL and SERVPERF share the five dimensions of service. However, SERVPERF limits each dimension's elements to focus on predetermined standards (Kilibarda et al., 2019). In comparison, SERVQUAL is based on customer expectations (Pekkaya et al., 2019). SERVQUAL and SERVPERF are measures of customer satisfaction. Both approaches have been shown to have predictive value and are useful metrics to represent customer satisfaction at the time of measurement (Fotiadis & Vassiliadis, 2017; Lee et al., 2020).

Researchers have found that SERVPERF is better suited for services that depend on predetermined technical or performance quality, such as telecommunications (Tas et al., 2019), manufacturing (Vlckova & Podskubkova, 2018), or banking (Shankar et al., 2019). Practitioners can select the approach and tools that suit their needs. The choice of approach to measure customer satisfaction may influence the choice of strategies used by sales managers of medical imaging devices to improve long-term customer retention.

External Service Value in Medical Imaging Devices. As industries mature and product pricing becomes more homogeneous, the value of service delivery and its role in value creation are topics of significant interest for researchers (Youssef et al., 2018).

Service offerings have an increasingly significant role as the global economy is gradually transitioning from product to service (Feng et al., 2020). In B2B and medical devices, the role of service goes beyond ensuring that the product performs its function as expected. Researchers have found that service quality positively impacts customer satisfaction, and customer satisfaction positively impacts customer loyalty (Huang et al., 2019). In practice, companies offering medical imaging devices offer a wide array of services contracts, training, and consulting as part of their offering to help the customer preserve the equipment in operating conditions and to create differentiation and value (DeStigter et al., 2019). The most common service types and value-added offerings for medical imaging devices are discussed to provide context and enhance understanding of the role of service in value creation and long-term customer retention.

Maintenance and Repair Service. Maintenance and repair contracts are ubiquitous in medical devices because regulatory agencies mandate equipment maintenance and repairs. Medical imaging devices and most equipment in a healthcare environment must work efficiently and accurately to provide patient safety (Sezdi, 2016). Federal and local regulatory agencies overseeing healthcare providers demand that healthcare facilities have documented procedures and schedules for maintaining, inspecting, and testing all medical equipment (Condition of participation, 2021). The main reason for mandatory maintenance is that medical devices are considered critical to patient care and can only be used when entirely operational (Cruz & Haugan, 2019). Operators of medical imaging devices often have a large annual budget solely dedicated

to funding equipment maintenance to ensure equipment availability to support patient care (Chan et al., 2019). In response to the need for service, firms have created several options and configurations for maintenance services and made maintenance and repair operations a significant source of revenue and profits (Hezarkhani et al., 2019). While preventive maintenance is mandatory, suppliers and users can choose how to perform the necessary maintenance of the equipment and the ancillary services needed for its operation.

Most medical imaging devices include a specific warranty where the manufacturer offers preventive maintenance, repairs, and needed adjustments or calibration for a predefined period after the original purchase and installation (DeStigter et al., 2019). After the warranty period, medical imaging devices providers offer various service contracts as a value-add to the equipment (Chan et al., 2019). Providers of medical imaging devices tend to offer service agreements with different options for coverage, response time, training, support, and other benefits to meet customer needs and budgets.

Customers have the option to opt-out of a contract and follow a pay-per-service model. Many facilities have in-house biomedical and maintenance departments that can provide maintenance and repair of some medical imaging devices and ancillary services (power, HVAC) and choose to forego maintenance or repair contracts (Bahreini et al., 2018). When customers forego service contracts, manufacturers, and service providers still play a role in supporting the facility. Maintenance personnel, employed by the

operator, need the manufacturer to provide the necessary training and parts to perform maintenance tasks, and, in some cases, newly hired device operators need training on the equipment's functions (Cruz & Haugan, 2019). As new systems are acquired, the level of training and support needed by the operator is likely to increase with the technical complexity of the equipment (Faris & Shuren, 2017). In cases where a service contract is not present, the service provider charges the labor and parts every time repair service is required, and the owner or operator bears the bulk of equipment failure risk (Chan et al., 2019). Chan et al. (2019) noted that most equipment suppliers, and some independent parties, offer on-demand services to support customers who do not have a service contract.

Basic maintenance contracts cover scheduled maintenance, repairs, and varying degrees of training and support to ensure the equipment operates as specified and meets appropriate regulations. These contracts provide protection to the healthcare provider by covering all preventive maintenance costs and many repairs over a specific period. When contracting basic maintenance, the service provider bears some of the equipment failure risks (Chan et al., 2019). Researchers argued that while the terms of basic service contracts are well defined, some consumable parts are not covered, and the level of effort by the service provider is not contractible (Hezarkhani et al., 2019). Hezarkhani et al. (2019) explained that while the service provider can show adherence to a preventive maintenance schedule, keep a spare parts inventory, set up dedicated service centers, and invest in trained personnel, the operator has no way to measure the service provider's

efforts. The result is that response time is not specified or guaranteed by the provider. Basic service agreements reduce the risk for the operator but do not eliminate unscheduled downtime.

Researchers have found that proximity to the customer can generate value. The location of healthcare facilities is often selected by functional, location, environment, and economic factors (Dell'Ovo et al., 2018). Functional factors include the amount of suitable space, available transportation, and communications infrastructure to support the healthcare facility, while environmental factors include noise and air quality (Dell'Ovo et al., 2018). Researchers found that, over time, supporting auxiliary services and competing facilities, like pharmacies, tend to locate close to each other and tend to create clusters or concentrations of closely related services (Cruz & Haugan, 2019; Ni et al., 2016). For example, doctor's office buildings and outpatient centers are often located near hospitals. Rivera et al. (2016) explained that clustering facilitates collaboration, increases access to commonly used resources, and trained personnel. For users, healthcare clusters facilitate access to multiple services, reduction in transportation costs, increased levels of customer service, resource sharing, and access to qualified personnel (Cruz & Haugan, 2019).

Providers of medical imaging devices often locate offices and personnel near healthcare clusters to increase access and improve response time to create value when delivering external service (Cruz & Haugan, 2019). While clusters can be beneficial in urban areas, researchers have shown that some critical access and remote facilities must pay a premium for an expedited response to equipment malfunction and downtime

(Rivera et al., 2016). Customers in remote areas or with geographically disperse facilities might avoid contracting services with distant providers to reduce the risk of long waiting times and downtime (Cruz & Haugan, 2019). Geography can affect the service provider's ability to deliver certain response levels.

Some suppliers offer maintenance contracts that include scheduled preventive maintenance and guaranteed response time for repairs for an additional fee. McColl et al. (2019) noted that supplier relationships could have an impact on the value of performance guarantees and, in some cases, may raise doubts about the quality of the standard warranty. The most relevant finding was that customers place a tangible value in guaranteed delivery. Guaranteed response time is one of the most basic value-added services offered (Cruz & Haugan, 2019). Achieving a guaranteed response time requires a combination of remote support tools for assessing issues before deploying resources, processes for a standardized response, locating qualified personnel close to the customer's facility, as well as parts inventories to support rapid deployment (Rivera et al., 2016). Therefore, response time guarantees carry higher costs to the service provider (Hezarkhani, 2017). Guaranteed response time contracts often carry a cost premium, and some offers include non-compliance penalties to ensure compliance (Cruz & Haugan, 2019). The objective and popularity of guaranteed response time contracts is the reduction of the operator's risk.

Service contracts that offer guaranteed availability (uptime) are a popular option for owners and operators of medical imaging devices (Hezarkhani, 2017). Researchers

explained that suppliers of uptime contracts commit to a certain percentage of availability over the total workable time during the contract period. Prenegotiated financial compensation is often included to support the customer's guarantee if the device's actual uptime falls short of the promised level (Hezarkhani et al., 2019). Hezarkhani et al. (2019) explained that uptime guarantees vary in availability (for example, 90%, 95%, or 99%) and price to meet various requirements for the availability of medical devices. In uptime contracts, the service provider must reimburse a preagreed percentage of the contract price to the operator if the device fails to deliver its guaranteed uptime, and agreements apply different penalty rates to match levels of downtime (Hezarkhani et al., 2019). Uptime contracts shift a significant amount of equipment failure risk to the service provider.

Newer medical devices are equipped with advanced data collection and reporting software capabilities that allow manufacturers to go beyond preventive maintenance and determine potential failures before they happen, i.e., predictive maintenance (Sezdi, 2016). Sezdi (2016) explained that predictive maintenance services leverage the specific equipment's usage data to adjust maintenance tasks and schedules based on actual operating conditions rather than averages. Furthermore, predictive maintenance contracts require the manufacturer to employ advanced product design, electronic sensors, infrastructure for data collection and processing, and specialized personnel for interpretation and management of data. The key benefit of preventive maintenance is the reduction of overall operator risk (Sezdi, 2016). Predictive maintenance allows service

providers to leverage usage data and compare the average time between failures to schedule maintenance at periods of low equipment demand and service personnel availability (after hours, certain days of the month, or weekends). Additionally, predictive maintenance can help the service provider plan inventories to ship and replace parts before the end of useful life to prevent unexpected failures (Sezdi, 2016). Predictive service contracts are usually offered for the most sophisticated medical devices and are sold at a premium price to reduce risk to the operator.

Performance-based contracting (PBC) is a more advanced approach to deliver higher operational availability and performance with lower capital equipment costs (Sharifi et al., 2016). PBC allows the customer to secure equipment performance rather than negotiating maintenance contracts or paying for repairs and spare parts as needed (Sharifi et al., 2016). Researchers explained that under a PBC, the service provider bears more risk that may be justified by the profits generated by performance incentives incorporated in the contract, specifically, the customer buys outcomes and the service provider delivers equipment availability and minimizes the associated maintenance costs (Sharifi et al., 2016).

Sharifi et al. (2016) proposed that PBC attempts to provide a win-win scenario by aligning the interests of the provider and user. However, evaluating PBCs can be challenging as measuring the impact of service-level improvements on the operator's productivity, or profitability can be difficult because reliable data may not be available

(Sharifi et al., 2016). The difficulty of quantifying the effects of PBC and ROI leads some customers to limit the price premium or to forego these types of agreements.

Value-Added Service. While service contracts can reduce risk to the user, some potential equipment failures are external to equipment and not covered by equipment service contracts. Researchers found that up to 95% of equipment downtime can be attributed to ancillary equipment failures, such as temperature control (HVAC, MRI chillers) or power fluctuations in the facility (Hezarkhani et al., 2019). While many facilities have maintenance personnel on staff, they may choose to outsource the maintenance of some critical support functions to reduce the risk of downtime. For this reason, some providers of medical imaging devices offer add-on features to their contracts, such as HVAC maintenance or power backup, to enhance the value of their product and service offerings (Hezarkhani et al., 2019). Adding ancillary support services reduces the operator's risk but increases the service contract's price.

Most researchers addressed service contracts for medical devices as individual components; however, most healthcare providers have a variety of medical imaging devices, often from different manufacturers, and service contracts need to be managed across the facility, adding complexity to the relationship with service providers (Smithson & Dickey, 2020). Researchers have found that the annual service expenditure for medical devices fluctuates between 5% -12% of the equipment's original purchase price and that facilities use a mix of insourced (in-house) and outsourced services to perform maintenance (Smithson & Dickey, 2020). Some researchers proposed a combination of

preventive maintenance contracts for older devices and predictive maintenance contracts for newer devices to optimize uptime, capital, and maintenance expenditures (Sezdi, 2016). The common theme was that service delivery and contract management are a complex but necessary function in all healthcare environments.

Some facilities, hospitals, and healthcare delivery networks choose to outsource all their maintenance to a single vendor capable of providing service to all devices from most manufacturers (Smithson & Dickey, 2020). At the other extreme are systems and facilities that have large in-house biomedical departments to provide maintenance with a minimum number of outsourced service contracts (Bahreini et al., 2018). Many healthcare providers have a mix of in-house and outsourced contracts and use medical equipment management systems (MEMS) or computerized maintenance management systems (CMMS) to help manage equipment maintenance (Sezdi, 2016). MEMS can help track inventory and location, preventive maintenance schedules and procedures, requests for service, service history records, and service contracts (Bahreini et al., 2018). Regardless of the tools used to manage service agreements, maintenance and repair of medical devices are an integral part of healthcare delivery, playing a significant role in the operation of a medical facility.

Service contract pricing is not in the scope of this research or literature review. However, it is worth noting that, while many facilities are reimbursed by procedure, not all medical imaging devices are used in a for-profit environment. In some settings, like critical access facilities, the operator receives reimbursement for medical imaging

procedures through a government budget allocation determined by Medicare (Hezarkhani et al., 2019). In these cases, the need for uptime is as pressing as any other facility; however, the available resources and budget are limited. In these circumstances, service providers need to adjust the elements and schedules of their maintenance and repair offerings to meet the customer's needs and budget (Hezarkhani et al., 2019). An example of this practice, some providers offer critical access service contracts that cover multiple devices at a fixed monthly fee. This approach gives the service provider the flexibility to use remote service and schedule preventive maintenance at their convenience while ensuring prompt response in case of catastrophic failure.

Value-Added Service as an Influencer of Customer Retention. In B2B, the impact of service value can vary depending on the competitive environment. In markets where products are relatively similar in function and pricing, more suppliers move from competing on price and quality to emphasize service as a differentiator, increasing service competition (Dan et al., 2018). Providing value-added services has a cost to the supplier and may limit the ability to perform the value-added services at scale. Researchers explained that some suppliers rely on their distribution channel to cover the gap and provide a standard guarantee and set of value-added services; distributors or retailers create their own set of value creation services to generate additional differentiation for themselves and the product (Dan et al., 2018). Researchers have found that the balance between manufacturers and channels provided value-added services is affected by manufacturer power and competition (Dan et al., 2018). When devices are

highly complex or use proprietary technology, it increases the manufacturer's relative power.

Value-added services are generally seen as a strategic approach to creating competitive advantage and market differentiation. Manufacturers and distributors often bundle services and products as a strategic response to increasing competition and price pressure from competitors (Forkmann et al., 2017). Raddats et al. (2016) proposed that value-added service offerings help manufacturers understand the in-service product performance and enable deeper customer relationships to improve the system design and address more complex requirements to retain customers. The same researchers explained that there are three categories of value-added service: Product-related services, such as maintenance, repair, and upgrades; customer service, related to product support and education; and services supporting business needs, including usage reports, aging reports on injuries, second opinion reports, and benchmarking. The combination of service categories depends on the product, market, and the role of the product in the customer's supply chain (Raddats et al., 2016). In summary, value-added services can be designed to fulfill different needs and levels to support value creation and customer satisfaction to influence retention.

Medical imaging devices are considered complex products and systems (CoPS), a sub-sector of the capitals goods market where value creation through services that work together to optimize the system or serialization has become prevalent. Raddats et al. (2019) explained that complex products are stand-alone offerings and that, in many cases,

customers are looking for value beyond essential services and response times and expect long-term relationships and assurances of product availability and even outcomes. Medical devices need to be managed throughout the life cycle, including the device's replacement to ensure equipment is cost-effective, up to date, and continues to support the corporate objectives of the healthcare organization (Sezdi, 2016). Raddats et al. further explained that the difference between a complex product and systems depends on the degree to which the products work and interact with each other to combine into systems. Services related to complex products are primarily demand-based (cost savings, service quality, risk reduction) and economic (quality of service, new revenue streams, profitability). In contrast, service demands for complex systems depend on long-term financial outcomes such as switching from the capital to operational expenditures, reduce overall operating costs across the supply chain, joint innovation, and business transformation (Sezdi, 2016). In complex systems, the roles and relationships with intermediaries that collect, host, and analyze operational data for multiple products in the customer's installed base are likely to become increasingly important (Raddats et al., 2019).

Providers of medical devices understand that their products are part of CoPS, and some have created services that go beyond uptime and performance to maximize the utilization of the medical devices in the context of the system (Raddats et al., 2019). Researchers have identified that healthcare providers are challenged to provide access to the right medical equipment and resources to patients because the demand is

unpredictable, and facilities do not know what equipment will be needed (Houngbo et al., 2017). Newer imaging devices are interconnected to support remote monitoring and reporting (Sezdi, 2016). Many patient monitoring devices, such as infusion pumps and EKG monitors, are designed to connect to data communication networks to allow remote monitoring (Griggs et al., 2018). Some medical imaging devices have sophisticated reporting tools that can provide detailed usage information, including number and type of exams, average usage time, the time between failures, and calibration data to monitor and manage from centralized locations (Raddats et al., 2019). Monitoring equipment usage information across the organization can help management optimize the type and number of medical devices in the organization, maximize usage, availability, and maintenance and repair reduce costs (Hayhurst, 2019). Some service providers have created value-added services to help facilities manage equipment across the organization, even if manufactured by others, to increase efficiency at each facility and the system (Hayhurst, 2019).

Medical imaging devices are considered complex products that are part of a complex system. Each imaging device provides a single type of image; multiple devices, such as x-ray, ultrasound, or CT, acquire different types of images (Hayhurst, 2019). Each type of image must be sent to a radiologist for interpretation, and the radiologist's interpretation needs to be aggregated to other clinical tests and shared with other physicians making diagnoses and managing patient care (Schemmel et al., 2016). The possibility for providers of medical images to enhance value-added services offerings

beyond the facility to include interpretation and diagnostic service exists, but academic research on the topic seems to be very limited.

The role of value-added service is increasing in importance in purchasing decisions (Feng et al., 2020). The customer's service expectations that influence the purchase decision have expanded beyond the transactional satisfaction derived from the process of acquiring a product or service that meets desires, demands, needs, or goals (Steward et al., 2019). Some researchers note that service satisfaction is derived from the accumulation of experiences and interactions with the supplier across the life of the product (Lee et al., 2019). Folstad and Kvale (2018) proposed that sales managers should create a complete view of how the customer selects and decides which product, and associated services, to purchase and identify the people and functions in charge of optimizing each task to improve the overall experience or customer journey. The customer journey approach leverages automation, Big Data, and artificial intelligence (AI) to facilitate proactive personalization, contextual interaction, and innovation to offer a roadmap to create a journey that can be tailored to customer needs (D'Arco et al., 2019). Researchers defined three stages in the sales journey: prepurchase (consideration and evaluation), purchase process, and postpurchase interaction (D'Arco et al., 2019; Folstad & Kvale, 2018). The concept of customer journeys and the holistic view of customer value and satisfaction aligns with SPC theory (Patel et al., 2020). The three stages in the customer journey contribute to customer satisfaction and influence customer retention.

Value-added services can enhance customer satisfaction and perceived value (Raddats et al., 2019). In a case study, Kumar and Devi (2018) showed that value-added services could enhance the customer experience and satisfaction of current customers. However, the product's price, features and physical attributes are the main drivers to repurchase. Kumar and Devi (2018) conclude that value-added services are not enough to ensure long-term customer retention.

The Elements of the Service Profit Chain Theory Theory: Customer Retention, Repurchase, and Referrals

The purpose of this study was to explore the strategies used by sales managers of medical imaging devices to improve long-term customer retention. The foundation of the SPC theory is that customer satisfaction drives customer loyalty and retention (Hogreve et al., 2017). As discussed earlier, researchers support the two categories of customer loyalty: attitudinal and behavioral (Gremier et al., 2020). These definitions comprise most customer postpurchase activities, attitudes, and behaviors (product use, service, returns, disposal), diluting the effectiveness of the term for practical applications (Otto et al., 2020). Heskett et al. (1994) defined customer loyalty as a combination of customer behaviors that include repurchases, retention, and referrals, subscribing to the behavioral definition of loyalty as measured by repurchases.

Repurchases may not always be a result of loyalty or customer satisfaction. Economic factors, such as pricing and switching costs, may lead a customer to repurchase, even if the attitude about the product or service is not positive (Russo et al.,

2016). Researchers have shown that attitudinal loyalty indirectly influences behavioral loyalty (Harmeling et al., 2017). Organizational buying behavior is not devoid of emotion, as buyers derive value from a combination of function, brand, trust, and cost (Pandey & Mookerjee, 2018). Many buyers do not simply opt for the lowest-priced source, and meaningful relationships are created between organizations (Nyadzayo et al., 2020). In contrast, a customer's perception of entitlement or complacency from the supplier may create dissatisfaction and drive customers to switch suppliers even if the product or service performs as expected (Friend & Johnson, 2017).

The relationship between customer satisfaction and loyalty evolve. Chen et al. (2019) explained that internal and external factors influence organizations and individuals' goals, practices, and values over time to contribute to the customer's intent to remain or to defect. Many B2B relationships evolve as suppliers and customers collaborate and cocreate intangibles to maximize value (Gremler et al., 2020; Kingshott et al., 2020). The incorporation of intangibles shifts the approach from transactions to relations adding the complexity of reconciling the management of the relationship to build long-term value for the benefit of buyer and seller and the short-term goals of profit maximization. Therefore, loyalty is an ongoing process, and a single event rarely triggers the decision to defect from a supplier; loyalty results from the cumulative effect of a series of positive and adverse events or perceptions and actions taken that influence satisfaction.

In the context of this study, healthcare providers seek medical imaging devices to diagnose various diseases with lower operating costs. Generally, high-technology products, such as medical imaging devices, use rapidly advancing, unique, and sometimes proprietary technology that is differentiated through integrated features; consequently, the selection often requires extensive search efforts by the organization (Msaed et al., 2017). An essential challenge in the selection of medical imaging devices is the evaluation of new features. Emerging technologies are often in a state of evolution where the applications are not fully understood or researched; therefore, it is up to the buyer to assess the features that show promising but unfulfilled potential (Doneria & Vinodani, 2017). In many cases, technology will drive buyers to purchase from a new vendor (behavioral loyalty) even if they are attitudinally satisfied with the incumbent.

Strategies to improve long-term customer retention must consider customer attitudes and behaviors towards the product, service, people, and brand influence how the customer makes decisions about repurchasing from a supplier. Loyalty is achieved through customer satisfaction and evolves as customers and suppliers collaborate, cocreate, and build emotional bonds. However, like technology and economics, some externalities affect loyalty and lead an unsatisfied customer to repurchase a product and a satisfied customer to switch suppliers.

This exploratory study is intended to find commonalities and differences in strategy to improve long-term customer retention as described in previous research, regardless of industry. Much of the reviewed literature focuses on the role of service and

value-added services to improve customer satisfaction and retention. This study differs from some of the existing literature by focusing on medical devices while widening the scope to view all the strategies used by sales managers of medical imaging devices to improve long-term customer retention.

Conclusion

SPC theorists argued that management can create strategies that align the firm's resources and processes to increase long-term customer retention. Providing the type and quality of services that improve customer satisfaction and foster customer relationships that, in turn, help the firm understand customer needs to develop the products and services that drive future demand. Furthermore, SPC theorists link the firm's processes to customer satisfaction and consider value-added services as a product and a driver for customer satisfaction and retention. The concept that the management strategy and actions influence long-term customer retention makes the SPC theory an ideal framework to explore strategies used to increase customer satisfaction and influence long-term retention. The long-term retention strategies were categorized following the SPC approach to explore how sales managers of medical imaging devices align their resources and provide value-added service to improve long-term customer retention.

The SPC theory and model were used as a guidepost to explore the role of service in long-term customer retention. Careful study design, based on well-supported research approaches, were used to help reduce bias. The combination of well documented conceptual framework and study design ensures that the research question was answered.

Transition

The challenge of long-term retention for medical imaging devices is a significant business problem that has not been explored in depth. Exploring successful strategies for customer retention can help increase our understanding of the phenomena. The use of a multiple case study methodology can help gather enough depth and detail to the exploration with the added benefit of comparing strategies across multiple firms. The conceptual approach was to address the phenomena by exploring how sales managers of medical imaging devices use service or other strategies as drivers for long-term customer satisfaction that can lead to repurchase. The case study methodology is a practical approach to explore complex phenomena. However, execution requires careful study design to ensure that observations are objective and provide enough depth to provide useful information. The next section describes the study design and processes used to ensure outcomes that represent the high research standards set by Walden University.

Section 2: The Project

In this section, I describe the qualitative multiple case study. I begin by restating this study's purpose, followed by my role as the researcher, the participants, and the research method and design. Population and sampling, ethical research, data collection, data analysis technique, and reliability and validity are also included in this section.

Purpose Statement

The purpose of this qualitative multiple case study was to explore the strategies used by sales managers of medical imaging devices to improve long-term customer retention. The targeted population was seven managers successfully overseeing sales of medical imaging devices in the U.S. East Coast region. The implications for positive social change include influencing the strategies used by sales managers to improve long-term customer retention to invest in developing technologies that can help accelerate accurate diagnosis, improve patient care, and reduce costs for healthcare providers.

Role of the Researcher

My role as the sole researcher was to act as the primary instrument, unbiased and impartial data collector, analyst, and presenter of results (Marshall & Rossman, 2016). Yin (2018) explained that researchers need to be aware of a researcher's challenges as a study designer, data collector, qualitative data analyst, and presenter of results. As the sole researcher, I was the primary data collection instrument in charge of enrolling participants, interviewing participants using open-ended questions, and collecting and analyzing the interview data. Semistructured interviews with open questions help in

gathering a deep and rich understanding of issues and events (Arsel, 2017; Castillo-Montoya, 2016). Semistructured interviews were selected for this study. I am familiar with the medical imaging industry; therefore, I relied on protocols suggested in scholarly sources to structure and execute the study and reflexivity to improve objectivity and reduce bias. Furthermore, special attention was given to ensure compliance with the respect for persons, beneficence, and justice guidelines established in the Belmont Report (see National Commission for the Protection of Human Subjects and Biomedical and Behavioral Research, 1979).

The interview questions and study protocols were developed based on research from Flynn and Korcuska (2018). The targeted population was seven managers successfully overseeing sales of medical imaging devices in the U.S. East Coast region. The chosen eligibility criteria indicated that each participant needed to be a current sales manager working at a company offering medical imaging devices in the U.S. East Coast region. Participants were identified through a process described in the section on participants. My employment in the medical devices industry facilitated social and professional relationships through industry associations and standard creation groups, facilitating access and recruitment of sales managers through email and LinkedIn. Flynn and Korcuska (2018) suggested that researchers consider participants' well-being throughout the research process; therefore, care was taken to ensure trusting and respectful relationships while considering possible bias.

Arsel (2017) and Castillo-Montoya (2016) proposed that researchers adhere to predefined forms and research protocols to ensure objective data collection, analysis, and alignment to the research question. Accordingly, I followed a standard set of questions (see Appendix B) and a predetermined interview protocol (see Appendix A). Flynn and Korcuska (2018), Yin (2018), and Castillo-Montoya recommended that researchers ask clarification and follow-up questions based on responses to the standard questions to gain a detailed and complete understanding of the responses. Additionally, McNarry et al. (2019) proposed using enough follow-up questions to ensure that no new information is being received to ensure understanding and mitigate potential researcher bias. Therefore, I asked follow-up and clarification questions until the answers were complete and understood by both the participants and myself. Interviews were recorded with the participants' knowledge and permission to ensure accuracy and reduce bias.

I was familiar with the research topic and took additional steps to reduce bias. McNarry et al. (2019) proposed using the bracketing process to reduce researcher bias by creating a list of assumptions before data collection and using the assumptions as part of the study data analysis to identify any potential bias. Reflective journaling is the process of writing the researcher's thoughts on the interview, the answers received, the possible interpretations, and potential researcher bias to enhance the learning experience and quality of the research (Arsel, 2017). I used the bracketing approach and reflective journaling to note and minimize researcher bias. The interviews were held and recorded using GoToMeeting.com to avoid exposing participants to undue harm, whether physical

or psychological, following the Belmont Report guidelines (National Commission for the Protection of Human Subjects and Biomedical and Behavioral Research, 1979). A more detailed explanation of the importance and implementation of the Belmont Report guidelines is presented in the ethical research section.

Participants

Yin (2018) proposed that purposive sampling helps explore a phenomenon in a specific context. Participants were seven sales managers of medical imaging devices who had successfully improved long-term customer retention for medical imaging devices on the U.S. east coast. The selected participants met the following eligibility criteria: hold a sales manager position at an established company offering medical imaging devices in the selected region. Participants needed to develop and implement strategies for customer retention and have improved long-term customer retention. In the absence of industry statistics or benchmarks for retention to determine success, I asked participants to estimate their performance in long-term customer retention against a mature industry average value. Participant searches followed a multistep process to identify firms selling medical imaging devices, select target firms, and identify managers within each firm who had successfully achieved long-term customer retention.

Companies selling medical imaging devices in the U.S. East Coast region were identified using Google search and exhibitors lists from medical association meetings and tradeshows that I attended in 2020. Once identified, the company's industry, years in business, and annual sales were verified using public company data collected from

ZoomInfo.com. Companies with the highest percentage of organic growth from 2014 to 2019 were considered successful in long-term customer retention. After the firms were selected and verified, the sales leaders were identified using company websites, LinkedIn, and personal contacts in the industry.

Recruitment began after approval from Walden University's Institutional Review Board (IRB). A personalized email request soliciting participation was sent to the selected company employees with a sales manager, director, vice president, or similar role, as stated on the company website or LinkedIn. The invitation included a description of the study, qualification requirements, assurance of confidentiality and ethical proceedings, the estimated time commitment for the interview, as well as an offer to discuss the study after completion. A copy of the consent form was also included. Participants were further qualified through a short phone call before the interview.

The strategy to build a working relationship followed Yin's (2018) guidelines for researchers. Yin (2018) recommended building a working relationship with the participants by fostering open communication, setting clear expectations, addressing participants' questions about the study and the interview process, and discussing the researcher's understanding of the responses. The relationship-building efforts began with a preliminary call scheduled upon acceptance of participation to acknowledge informed consent, verify that the participants met the selection criteria, discuss the project, explain the process, establish mutual expectations, and answer the participant's questions. Participants were reminded that participation was voluntary, that they could withdraw at

any time, and that asking additional questions before, during, and after the interview was encouraged. Open communication was maintained after the interview to ensure that the responses were correctly interpreted and represented. Although the target sample was small, member checking between participants and methodological triangulation between responses and the company's offerings gathered from website and trade show observations were assumed to offer a representative glimpse into the strategy and its presentation to the public. Researchers have explained that using a clear selection process with predetermined criteria, building a working relationship based on mutual trust, and employing response triangulation help increase the quality of a study (Arsel, 2017; Castillo-Montoya, 2016; Yin, 2018). For these reasons, care was taken in the selection of participants, the relationship development and through triangulation of response data.

Research Method and Design

Research Method

The purpose of this qualitative multiple case study was to explore the strategies used by sales managers of medical imaging devices to improve long-term customer retention. Quantitative, qualitative, and mixed methods were considered as alternatives for research design. Quantitative and mixed methodologies are designed to examine and explore relationships between defined variables (Rahi, 2017; Saunders et al., 2015; Schutt, 2015). Zolkiewski et al. (2017) argued that a complete exploration of phenomena with unknown variables cannot be fully achieved through quantitative methods. As described earlier, purchasing medical imaging devices involves multiple actors,

interactions, objectives, and roles that indicate many unknown variables. McColl-Kennedy et al. (2019) proposed that, conceptually, big data analysis techniques could help explore the cause and effect of business strategy. However, the necessary tools and data sets of B2B relationships are insufficient for accurate statistical quantification. Therefore, the qualitative method was preferred over quantitative and mixed methodologies.

Research Design

Researchers conducting qualitative research aim to explore, describe, understand, and document phenomena by using rich data and thick descriptions (Yin, 2018).

Qualitative researchers use narrative designs to collect personal life stories and supporting materials from individuals to recreate the context and chain of events in specific lived experiences (Creswell & Poth, 2017; Rahi, 2017; Yin, 2018).

Phenomenological designs are used to understand constructs or the meanings of personal lived experiences as perceived by individuals and communities (Flynn & Korcuska, 2018). The case study methodology is used to explore a process or method as experienced by the people involved (Yin, 2018). Researchers using the case study method rely on asking open-ended questions such as “why,” “how,” or “what” to participants to identify and explore research phenomena (Yin, 2018). In addition to queries, researchers triangulate their findings by member checking and observing actual behaviors to gain a better understanding of the phenomena (Elsäßer & Wirtz, 2017). The multiple case study method builds upon a single case study by expanding the number of cases to increase the

possibility of replication and generalization (Yin, 2018). The goal of exploring, documenting, and organizing unquantifiable data from multiple sources is to find common patterns of behavior in the population to help understand the phenomenon (Lune & Berg, 2016). Purchasing medical imaging devices is a complex short-term process that does not have significant lasting effects on individuals or societies. Therefore, narrative, event nature, and single case study phenomenological designs were not well suited for this research. For these reasons, the qualitative, multiple case study design was an appropriate strategy for exploring the strategies used by sales managers of medical imaging devices to improve long-term customer retention.

Population and Sampling

The goal of this study was to explore strategies used by sales managers of medical imaging devices to improve long-term customer retention. The population was defined as sales managers of medical imaging devices who had demonstrated success in improving long-term customer retention for medical imaging devices in the U.S. East Coast region. The multiple case study methodology can be used to answer research questions with small samples (Brear, 2019; Yin, 2018). Etikan et al. (2016) defined purposeful sampling as the deliberate choice of participants who know what needs to be known. The purposeful (extreme case) sampling technique was selected to identify participants who could help answer the research question and explore strategies used by sales managers of medical imaging devices to improve long-term customer retention. The purposeful sampling technique was selected over other nonprobabilistic techniques, such as

snowball, quota, or convenience sampling, to ensure that participants had the knowledge and experience to provide enough depth and breadth of knowledge to answer the research question.

Lune and Berg (2016) proposed using predefined selection criteria to align the research question, the population, and the sample. For this study, the sample included seven sales managers of medical imaging devices who had demonstrated success in improving long-term customer retention for medical imaging devices in the U.S. East Coast region. The selection criteria encompassed sales managers of medical imaging devices who had successfully improved long-term customer retention in the U.S. East Coast region. Customer retention statistics for medical imaging devices are not available from public or recent scholarly sources. Min et al. (2016) explained that the cost of acquiring a new customer exceeds the cost of customer retention when the market is considered mature. The adoption rate of the product exceeds 60% of the available market. The medical device industry in the United States is considered a mature industry (National Electrical Manufacturers Association, 2020). In lieu of a publicly available measure of market leadership, an average retention rate of 60% was used as the assumed industry average. The selection criteria were that more than 60% of the firm's yearly sales came from existing customers.

The selection of participants began by identifying firms selling medical imaging devices using Google search and exhibitors lists from medical association meetings and tradeshows attended by me in 2020. Firms selling medical imaging devices for at least 5

years were identified as the population. Farquhar et al. (2020) proposed the use of triangulation to match information across sources. For this reason, the company's sales and industry were compared against public company data collected from ZoomInfo to triangulate data sources. After the target firms were selected, the sales managers were identified using company websites, LinkedIn, and personal contacts in the industry. A personalized email request soliciting participation was sent to the potential participants. Once participants replied with their acceptance, I called each participant to confirm informed consent, discuss the study, and reiterate that participation was voluntary, noting that the participant was able to withdraw from the study at any time. Eligibility was confirmed by verifying the participant's name, role, and tenure in the company and asking for their long-term customer retention rate to compare it against the predetermined 60% retention criteria.

Selecting three companies and at least two participants from each firm was intended to provide a sufficient sample to describe the phenomenon of interest. Researchers have proposed verification using multiple sources, triangulation, and member checking to ensure data saturation (Etikan et al., 2016; Gray, 2019; Holmlund et al., 2016; Lune & Berg, 2016; Rahi, 2017). Verification, member checking, and triangulation were used to ensure data saturation and sufficient confirmatory evidence to explore alternative theories or explanations. Clarifying and corroborating questions were asked of every participant during the interview until no new information was obtained, as the first form of data saturation, as defined by Gray (2019). All responses were compared

to multiple sources, including the participants from the same firm, company information collected in the selection process, and responses from participants at different firms, if applicable, for triangulation and member checking. Data saturation was assured by comparing all the responses and sources to identify topics that needed further clarification until no new information was obtained.

Selecting participants with the knowledge to describe successful strategies for long-term customer retention supported the objective of this study. Interviews were conducted and recorded through GoToMeeting to minimize the time commitment, provide physical distancing, and document responses accurately. Verification, member checking, and triangulation were used to ensure data saturation and provide enough depth and breadth of knowledge to answer the research question.

Ethical Research

The Belmont Report (National Commission for the Protection of Human Subjects and Biomedical and Behavioral Research, 1979) dictates that research should ensure respect for persons, beneficence, justice and avoid exposing participants to undue physical or psychological harm. The study was conducted following Walden University's IRB protocols. All data collection activities began after the Walden University IRB board approved the research proposal and issued approval number 08-13-21-0976696. Participants were invited to participate via personal email. Once participants agreed to the interview, a consent form was sent to each participant for their signed consent. The consent form provided the participant a summary of the research goals, an explanation of

their right to privacy and voluntary nature of the research, the potential effect on the participants and the organization, the implications for positive social change, as well as the process for withdrawing from the study. Participants could withdraw at any time by letting me know their desire to withdraw. None of the participants withdrew from the study. The only incentive offered to the participants was a summary of the study results.

Participant confidentiality is integral to ethical research (Oltmann, 2016). No personally identifiable data or demographics were collected to ensure confidentiality. Additionally, Saunders et al. (2017) recommend that researchers take measures to ensure confidentiality. Therefore, each participant was assigned a pseudonym, and a code name was assigned to the organization. The company code-names and participant pseudonyms were kept on paper and were only shared with the entities designated by the Walden university IRB.

During the research, participants were treated with respect and dignity. Involvement in the study did not put the participants at risk for their safety or wellbeing. No distress or discomfort was observed during the interview process. There were no unexpected events that required notification to the Walden University IRB during the research.

This final doctoral manuscript includes the Walden IRB approval number 08-13-21-0976696. According to APA guidelines (American Psychological Association, 2019), all data collected is stored in an encrypted hard drive and kept in a secured cabinet. After

5 years, I will use the shredding method to destroy all journal notes, information, digital recording, and other stored data.

Data Collection Instruments

I was the sole researcher, was the data collection instrument, and analyst. The researcher is the primary data collection instrument in qualitative research because it hears, sees, and interprets the data (Lune & Berg, 2016; Saunders et al., 2015; Schutt, 2015). The primary source of data was the semistructured interview. Arsel (2017) and Castillo-Montoya (2016) proposed that researchers adhere to predefined forms and research protocols throughout the research to ensure objective data collection, analysis, and alignment to the research question. Therefore, I followed a standard set of questions (see Appendix B) and a predetermined format (see Appendix A). I followed Schutt (2015) and Yin's (2018) proposed method of asking the questions in the same order to all participants for consistency. Clarifying questions were asked to ensure a complete understanding of the responses. Follow-up questions were used, as needed, to gather additional details and ensure the richness and depth of the data gathered until no new information was received from the participant. The topics covered by the interview questions included the nature of the strategies, tactics, actions, and metrics used by the sales manager to improve long-term customer retention.

Yin (2018) proposed that researchers use in-depth interviews, interview summary reviews, and triangulation between participants to find the themes necessary for a multiple case study design. Interviewing sales managers from multiple firms provided a

broader perspective. Sampling was intended to help uncover commonalities and fundamental differences in strategy across firms. Researchers proposed achieving data saturation by verification and iteration (Gray, 2019; Hancock & Algozzine, 2017). During the interview, I asked clarifying and corroborating questions until no new information was obtained from each participant. Responses were also compared between participants once the interviews were completed to identify topics that needed further clarification, as suggested by Brear (2019), Clarke and Braun (2020), and Yin (2018).

Triangulation and member checking enhance reliability and validity. I interviewed a minimum of two participants from each firm to ensure the minimal reference points for reliability and validity data saturation as Hancock and Algozzine (2017) and Gray (2019) recommended. Farquhar et al. (2020) proposed using a secondary source as a triangulation process to corroborate the data. I compared the responses from each of the participants from the same company to identify differences and common themes. When participants from the same company seemed to have different answers, I asked questions for further clarification and followed-up to enhance the exploration's depth and completeness. If participants gave contradictory answers, I asked for further clarification and details to determine if the discrepancy resulted from a misunderstanding, difference in perception, response to situational stimuli, or some other cause.

Brear (2019) argued that member checking ensures alignment between participants and researchers and helps find common themes from multiple individuals'

responses. Furthermore, Iivari (2018) found that member checking helps increase the generalizability of the results. The member checking process starts by asking the participants additional questions to gather more information and seek clarification of concepts or ideas that may be unclear to the interviewer to ensure understanding (Thomas, 2017). Brear (2019) also proposed verifying the accuracy of the data collection; therefore, a summary of the interview was provided to the participant for review to ensure responses were captured and interpreted correctly.

Researchers proposed that interviews be recorded and transcribed to improve the validity and reliability of analysis (Lune & Berg, 2016; Schutt, 2015). Brear (2019) proposed that, instead of a transcript, researchers provide each participant with a summary of their responses to verify that the researcher understood their answers accurately. Accordingly, interviews were recorded using GoToMeeting and transcribed using ATLAS.ti. After transcription, I summarized the interviews and notes and sent them to the participant for review, comments, and approval before starting the analysis.

Data Collection Technique

The data for this exploratory multiple case study was collected by conducting semi-structured interviews through GoToMeeting. A predefined protocol helps researchers ensure objective data collection, analysis, and alignment to the research question (Arsel, 2017; Castillo-Montoya, 2016). The data collection process followed a standard set of questions (see Appendix B) and a predetermined format (see Appendix A). Once the participant met the selection criteria, signed the informed consent, and

agreed to the interviews, they selected the meeting time and date. A meeting invite, including a summary of the research protocols, interview questions, dial information, and a link to GoToMeeting.com, was sent to the recipient to set expectations. Once the participant joined the call, I went over the interview protocol following the predefined script that included securing permission to record the interview (Appendix A). Schutt (2015) and Yin (2018) encouraged consistency in data collection. McGrath et al. (2019) explained that open-ended designs provide structure while allowing flexibility to guide the dialog in the themes' direction and add probing and clarifying questions to help ensure the depth and richness of the answers needed to explore the research question. I asked clarifying questions to provide a complete understanding of the responses. Follow-up questions were used, as needed, for member checking, triangulation, and to gather additional details to ensure the richness and depth of the data collected until no new information was received from the participant.

McGrath et al. (2019) proposed that semistructured interviews have the disadvantage of being more difficult for the novice researcher than structured interviews or questionnaires. Researchers need to be aware of possible bias generated by suboptimal questions, inadequate responses due to the participant's flawed recollection of events, or desire to answer to meet the perceived researcher expectations, and the researcher's own bias (Yin, 2018). However, semistructured interviews can help explore unforeseen and unexpected behaviors and attitudes, making it preferable to other methods. Marshall and Rossman (2016) found that the use of open-ended questions allows participants to share

experiences, analyses, and opinions in more detail. Therefore, I added follow-up and clarification questions to gather rich data until the participant stopped providing new information in addition to the predetermined questions. I have also added member checking questions to verify the alignment between participants from the same firm and uncover any discrepancies. All raw data and recordings were stored in an encrypted removable drive and kept in a locked cabinet for 5 years.

Member checking is a process where participants are asked to review the researcher's interpretation of the data gathered during and after the interview to verify the accuracy and completeness of the data collected until no new information, codes, or themes can be collected (Castillo-Montoya, 2016; Flynn & Korcuska, 2018; Thomas, 2017; Yin, 2018). Member checking is critical to improving the validity of the findings (Iivari, 2018). Therefore, member checking questions were added to verify that no additional information could be gathered.

Reading a transcript of responses already provided can be onerous to the participant and of limited value; in contrast, providing interview summaries to verify that the researcher understood their answers accurately increases participant engagement during member checking (Brear, 2019). Harvey (2015) found that inciting a conversation to discuss the researchers' understanding invites further reflection and elaboration on the answers to improve the responses. A transcript was not provided; instead, a summary of the answers was created and emailed to the participant for review, along with an

invitation for a follow-up conversation to ensure their responses were appropriately understood, interpreted, and possibly further insight into the responses.

Using the recordings of the interviews generated by GoToMeeting ensured adequate documentation of the responses and overcame time and cost challenges. The use of a summary ensures that the interpretation of the answers matches the participant's intent (McColl-Kennedy et al., 2019). According to APA guidelines (American Psychological Association, 2019), all data collected is stored in an encrypted hard drive and stored in a secured cabinet at my home. After 5 years, all journal notes, information, digital recording, and other stored data will be physically destroyed.

Data Organization Technique

Data organization and iteration are essential for exploratory research. Arsel (2017) proposed that data organization should begin immediately after the interview when the researcher reflects on how each question contributes to the detailed and thick descriptions of the phenomena and how questions are presented. Therefore, I kept a journal to document dates, keywords, non-verbal cues, and other observations about each interview. Additionally, I noted potential researcher bias, as proscribed in the bracketing process proposed by McNarry et al. (2019).

I transcribed the interview recordings to ATLAS.ti for summary and analysis. Each recording was identified by date and code name to ensure anonymity while providing accurate identification and transcription information. Watkins (2017) supported iteration and proposed that transcribing and grouping responses in tables or spreadsheets

to allow the researcher to quickly create and iterate how to arrange similar ideas and develop themes as the researcher processes the responses. Relevant and recurring phrases, themes, strategies, and areas where clarification was needed were noted for later analysis following Woods et al. (2016). Skillman et al. (2019) found that the iterative approach can help align qualitative responses to quantitative information as a triangulation method to improve the validity of the information. After each interview, I reviewed notes and transcripts to find recurring themes, approaches, similarities, and discrepancies. Accordingly, I used ATLAS.ti to store and organize responses and notes. I stored the data on an encrypted removable hard drive kept in a locked cabinet for 5 years. After this period, the removable hard drive will be physically destroyed to ensure confidentiality.

Data Analysis

Data analysis of the multiple case study followed the five-step process proposed by Yin (2018): (a) gathering and storing the data (b) organizing information into themes and strategies by coding the data in the transcripts; (c) creating a matrix of contrasting categories and the supporting evidence; (d) developing a visual representation for interpretation; and (e) tabulating the frequency of events to add context and conclude the findings. Responses were triangulated between participants from the same firm and the publicly available data from the company's website, following the guidance of Skillman et al. (2019). The analysis started with transcribing the responses to ATLAS.ti.

Researcher notes, questions, and needs for clarification or additional information were added to the notes.

After the transcribed notes, salient responses, concepts, and ideas were highlighted for all interviews, I grouped the data by concepts and compared it to the SPC model. After concepts and noteworthy answers were grouped, codes were created to harmonize concepts and develop themes for analysis. The use of codes helped ensure consistent communication and depth of analysis.

As recommended by McNarry et al. (2019), potential researcher bias was reviewed against the list of assumptions and journal notes and noted in the participant's summary. All responses and interviewer notes were coded and analyzed using ATLAS.ti software for further coding and analysis. The resulting codes and themes were organized by strategies to begin the analysis.

The iterative approach to data analysis proposed by Skillman et al. (2019) and Watkins (2017) was used to organize concepts and themes and continually revised and reorganized to help develop and substantiate a model representing themes and visual representations. Xu and Zammit (2020) recommended comparing the conceptual framework to the responses to start the analysis. Therefore, strategies were categorized according to the links in the SPC model as a starting point. Each strategy was categorized as the type of action used for implementation (internal service quality, employee satisfaction, productivity, or retention). I noted the intended link the strategy was

designed to affect (external service value or customer satisfaction.). Similarities and deviations from the SPC model were used as the starting point for exploration.

Themes that are not clearly and closely aligned to the SPC model were further analyzed by performing additional research using current literature, including other frameworks and theories, to establish links between frameworks. Yin (2018) explained that pattern matching involves comparing the patterns found in qualitative research to the empirical research found in the literature. For this reason, the key themes found in each iteration were compared to recent literature and the SPC framework to identify similarities, differences, and possible rivalry. The process of categorizing and comparing conceptual frameworks was performed multiple times to find links between the strategies, the SPC model, and other conceptual frameworks that helped me understand the phenomenon.

Reliability and Validity

The quality and relevance of a study depend on capturing and reporting the phenomenon wholly and accurately (reliability) and providing a framework that helps understand and apply the findings to similar situations. Gray (2019) described reliability as designing rigorous research procedures and tools to ensure the observations could yield similar results by another observer. Validity is defined as the extent to which the findings answer the research question (Fusch et al., 2017). Yin (2018) enhanced Gray's definition by proposing that, in addition to following core research procedures, researchers must make sure the cases are relevant and the evaluation considers multiple

approaches, and theories for interpretation, to ensure validity and provide a theoretical context. Cypress (2017) added that reliability is achieved by reporting accurately, interpreting consistently, and ensuring applicability and context to the phenomena. In summary, researchers proposed that reliability can be achieved by developing a research procedure that seeks to capture the data accurately and provides consistent, unbiased, and auditable criteria for analysis. Study validity is improved by minimizing bias; the interpretation helps answer the research question and provides a theoretical context.

Reliability

Reliability was pursued through the rigorous process of data collection, member checking, and an audit trail. The study protocol, presented earlier, established a precise method for data collection and aimed at collecting data accurately by recording the interviews, transcribing the conversation verbatim, and adding researcher notes. The participants verified summaries to ensure accuracy and completeness. ATLAS.ti was used to store, analyze, and trace the data and analysis. The strategy to improve reliability was to use a coding system, member checking, and thick descriptions, as proposed by Saunders et al. (2015). The expected result was providing dependable findings while minimizing researcher bias.

Validity

The validity of the study depends on the credibility, transferability, and confirmability of the findings (Saunders et al., 2017). Credibility is the extent to which the results, presented with the context, are recognizable to people who share the

experience, which refers to truthfulness or the study's internal validity (Hammarberg et al., 2016). Transferability, based on transparency and clarity, refers to the extent to which others can use the findings presented in the study in similar contexts (Cypress, 2017). Conformability is the accuracy of interpretation derived from the degree to which a study is consistent and can be repeated in a similar context by other researchers (Korstjens & Moser, 2018). In this case, conducting this study was aimed to help sales managers of medical imaging devices develop successful strategies to improve long-term customer retention. The study design is intended to support the purpose by ensuring the validity of the results.

Credibility

The credibility of the results begins with the study design, from participant selection to the accurate and complete representation of the responses (Fusch et al., 2017). The rigorous protocols for data collection, transcription, and member checking, presented earlier, helped ensure complete and accurate data collection. As recommended by Paulus and Lester (2016), data were gathered, sorted, organized, modeled, and interpreted with the help of ATLAS.ti software to ensure consistency and traceability.

Confirmability

The accuracy of the documentation and interpretation was validated with the participants using summaries after the interview. The member checking method helps ensure validity while minimizing researcher bias (Flynn & Korcuska, 2018; Thomas, 2017; Yin, 2018). Participants were asked to clarify or expand on their responses to the

predetermined questionnaire until no further information was obtained (Birt et al., 2016; Harvey, 2015; Iivari, 2018; McGrath et al., 2019). The triangulation of responses between members of the same firm further ensures reliability (Skillman et al., 2019). Additionally, responses were compared to the SPC model for theoretical triangulation. Using ATLAS.ti software simplified and supported the research process while providing integrity of the responses, data saturation, and traceability of the interpretation (Paulus & Lester, 2016).

Transferability

ATLAS.ti was used to maintain, store, and track the data throughout the study to provide auditable means for study replication. The iterative approach for interpretation throughout the research process was intended to help ensure that the findings provide an accurate and complete description of the phenomena to answer the research question and uncover further research opportunities. Results were compared to the SPC framework to provide a common theoretical background and improve the applicability and transferability of future research findings.

Data Saturation

The validity, reliability, confirmability, and transferability are indicators of quality in qualitative research (Gray, 2019). Data saturation has been met when the researcher stops finding new information, codes, themes, and strategies (Fusch et al., 2017). When data saturation is reached, the study is considered credible, transferable, confirmable, and meets the criteria for a valid research study (Yin, 2018). To achieve

data saturation, I continued probing the participants until no new information emerged.

While analyzing data, I continued to derive themes until reaching data saturation.

Additionally, I used methodological triangulation and document analysis to achieve data saturation.

Transition and Summary

The research was designed to ensure the alignment between the research question and the execution of the study. The selection of research methods, approaches, and tools was intended to ensure an in-depth exploration of the research question and to reduce bias as much as possible. The guiding principle was that answering the research question through this study should have a business impact and promote positive social change.

The study design approach was intended to provide the most relevant answers to the research question of what strategies are used by sales managers of medical imaging devices to improve long-term customer retention. The sample population was selected based on their role in crafting and executing strategies to improve long-term customer retention for medical imaging devices. The selection of the methods used to collect and document the data were intended to ensure completeness and consistency across interviews. The choice of instruments, processes, methodologies, and tools considered proper academic support and adherence to the ethical and quality standards set by Walden University.

The next section presents the findings. The potential business and social implications follow the detailed presentation of the author's findings. The application to

professional practice and implications for social change are presented, keeping in mind that this study is an early attempt to understand a complex phenomenon. The recommendations for action are presented, followed by identified needs for future research.

Section 3: Application to Professional Practice and Implications for Change

Introduction

The purpose of this study was to explore the strategies that successful sales managers of medical imaging devices use to improve long-term customer retention. The participants provided a comprehensive description of their strategies and how they were implemented. The data exploration yielded three themes: (a) value-added services enhance customer satisfaction and promote customer retention; (b) providing employees with resources, training, and support ensures prompt resolution to unexpected events; and (c) training and incentivizing personnel to build relationships and meet customer needs improve customer satisfaction.

Presentation of the Findings

The overarching research question for this study was as follows: What strategies are used by sales managers of medical imaging devices to improve long-term customer retention? I used Heskett et al.'s (1994) SPC theory as the conceptual framework lens to conduct my research and answer the research question. I interviewed seven sales managers of medical imaging devices who had successfully improved long-term customer retention working for three companies in the U.S. East Coast region. Table 2 shows a summary of the distribution of participants.

Table 2*Participant Distribution by Title and Company*

Role	Company A	Company B	Company C
Chief executive officer and president of sales	1	1	
Sales vice president	1	1	2
Vice-president of sales and service	1		

Note. The study included seven participants from three companies.

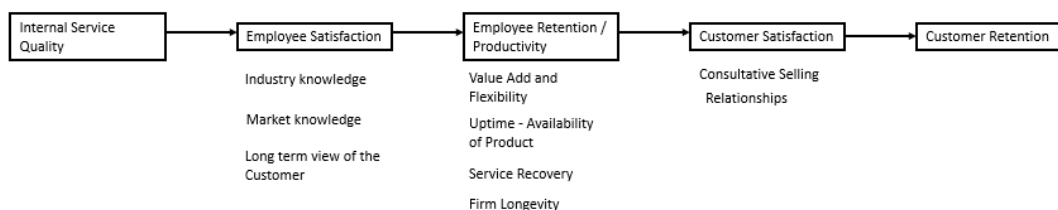
The participants answered predetermined open-ended questions (see Appendix B) as well as follow-up inquiries for clarification. Asking open-ended questions encouraged participants to provide examples, share perspectives, and elaborate on their strategy; follow-up questions ensured richer responses until the participant stopped providing new information. The dialogic member-checking approach of substituting transcriptions with summaries of the interviews promotes participant engagement (Brear, 2019). Summaries were created after the interview and sent to participants to ensure that my collection, understanding, and interpretation of the data gathered were correct and complete. In addition to interviews, I reviewed secondary information from Zoominfo.com, company websites, social media posts, and customer reviews to triangulate the findings.

In conducting data analysis, I started by reviewing and completing the transcription of each interview. The process involved listening to the interview and ensuring that the transcription was complete and accurate, resulting in a high degree of familiarity with the data. Once the transcription was completed, I summarized the

responses from each participant in a document. I asked them to review for completeness and accuracy, inviting the participant to provide additional information. After the participants affirmed the accuracy and completeness of the summary, I uploaded the transcriptions of the interviews to Atlas.ti along with the data from the interviews, the company's website, social media, and my reflective journal. A code map aligning themes to the SPC model was created in Atlas.ti as a visual representation of the responses. (See Figure 2.)

Figure 2

Code Map Aligning Themes to the Service Profit Chain Model and Theory



Note. The boxes represent the elements of the SPC model (Heskett et al., 1994). The words represent associated codes and themes created from the interviews.

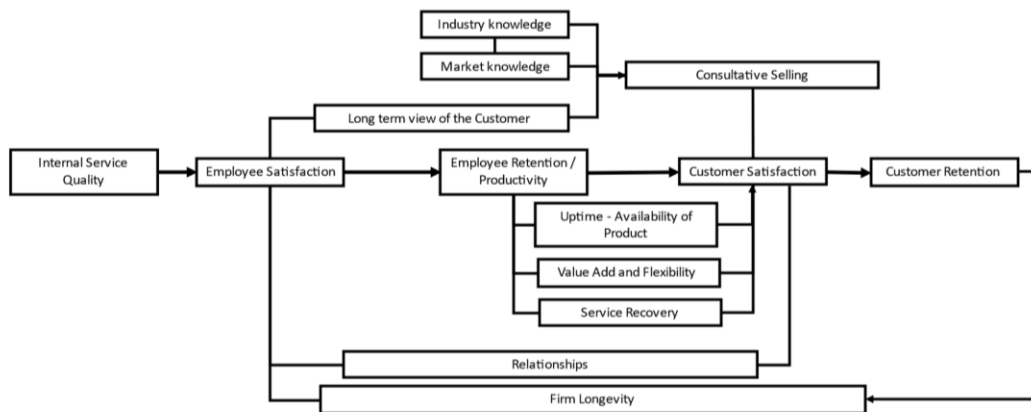
An iterative approach to data analysis can help align qualitative responses to quantitative information as a triangulation method to improve the validity of the information (Skillman et al., 2019). I followed the Skillman et al. (2019) approach and triangulated responses between participants from the same firm and the publicly available data from the company's website. The exploration of the data aided me in ascertaining three themes: (a) value-added services enhance customer satisfaction and promote customer retention; (b) providing employees with resources, training, and support ensures

prompt resolution to unexpected events; and (c) training and incentivizing personnel to build relationships and meet customer needs improve customer satisfaction.

Heskett et al. (1994) proposed the service profit chain model that describes a series of links describing how employee satisfaction can affect customer satisfaction, retention, and increased revenue. SPC theorists proposed that creating internal conditions that improve employee satisfaction (internal service quality) positively influences employee productivity and the ability to provide better services to the customer. The analysis began by linking the coded responses to the SPC model (see Figure 3).

Figure 3

Links Between Coded Responses and the Themes to the Service Profit Chain Model and Theory



Note. The codes were arranged to align to themes and the service profit chain model (Heskett et al., 1994).

The participants’ interviews were the largest data source for the study. Data were organized into themes and strategies by coding the data in the transcripts. A matrix of

categories with supporting evidence was created to build a visual representation, and a table of relevant concepts was used to add context and finalize findings.

Theme 1: Value-Added Services Influence Customer Satisfaction and Retention

The first theme that emerged from the methodological triangulation of the study data was that value-added services play a strategic role in enhancing customer satisfaction during the product's useful life. The common approach was to offer quality products and provide value-added services as a revenue stream and differentiator to ensure customer satisfaction and promote repurchases and long-term retention. The responses support previous findings that show that the product and service play a significant role in improving repurchase and customer retention (Son et al., 2021). All participants defined customer satisfaction as meeting or exceeding customer expectations and considered value-added services as differentiators, the main source of customer satisfaction, and the driver for long-term customer retention. However, value-added service offerings must evolve and adapt to meet customer needs to maintain value and differentiation.

The definition of what constitutes value-added service varied between the participants. However, there was agreement that ensuring that the product is in working order and providing services that add value are essential to customer satisfaction. For example, Participant 6 defined availability as keeping the equipment operating as designed and advertised. Participant 3 explained that the preferred measure of service performance is the availability for intended use, defined as the system that can acquire a

medical image when needed. Participant 3 explained that some facilities are open 24 hours a day and have different needs than those closing on nights and weekends.

Participant 7 said, “you have a lot of resources in place and provide many different services, but it’s not about having all of those. We customize service to each customer’s needs based on where they are, how they operate.” The consensus was that product availability is necessary for customer satisfaction and essential to promote other services.

The participants reported performing services not specified in their contract to ensure product availability. Downtime is considered a critical event that requires immediate action. Participants explained that customers can tolerate malfunctions that diminish some of the product’s functionality if it can perform the basic function of acquiring an image. However, if the product cannot acquire an image, their firms will maintain communication with the customer and take necessary measures to repair the product. Some of these measures include having service engineers work after hours or on weekends or absorbing the cost of expedited parts shipment. Participant 1 instituted a process where the sales and service managers meet regularly with the customer to provide updates until the problem is solved. The managers will continue to be engaged until the root cause is identified and corrected. Participant 5 explained that the firm will dispatch an engineer to troubleshoot the problem on the same day and that they have a fleet of portable equipment that they can offer on loan to keep operations going while the problem is solved. All participants considered that accountability, a customer-centric

approach, and quality of service differentiate their product maintenance and repair offerings from those of their competitors.

Beyond product availability and prompt downtime resolution, the participants explained that value-added services generate revenue and promote customer satisfaction and loyalty. Customer services include product training and technical support to help the customer's staff take advantage of the product's features and benefits. The participants rely on a consultative approach to customer support and relationship-building. The vendor's visibility of multiple product manufacturers, medical facilities, and the industry is often shared to educate and help the buyer. Most participants provided education about their products and industry.

In some cases, the vendor creates reports summarizing the customer's products, usage, and service history to help the customer build plans to optimize operations, product replacement strategies, and investment planning. Participant 2 explained that value is created by becoming a resource to help customers achieve their goals by reducing their effort into one's products. Notably, consultative services are provided at no cost to incentivize repurchases and stimulate loyalty.

The participants offered value-added services to influence customer satisfaction and customer retention. Most participants stated that value-added services must be flexible in responding to changing customer needs. Customers require training and support for using the product at the installation time. As the system ages, maintenance, repairs, and updates gain importance. Additionally, changes in the operation, such as new

medical specialties or an increase in demand for certain types of medical imaging, may change the customer's needs. For example, the demand for imaging services in the emergency department increased due to the COVID-19 pandemic. The participants agreed that adaptability is an essential element of a successful strategy for long-term customer retention because customer needs evolve and continue to change throughout the product life cycle.

The creation of value-added services to influence customer satisfaction and retention involved a combination of multiple strategies that included (a) offering flexibility in routine services to match customer expectations, (b) providing value-added service to differentiate their company, (c) promoting a long-term view of the customer, and (d) using a consultative approach to sales and support. The combination of strategies was intended to build customer trust. Sales managers stated that providing good service and building trust ensure that customers do not desire to engage other suppliers.

Mapping the themes to the SPC model and theory helped to match the strategies and implementation to research. Heskett et al. (1994) proposed the SPC model and theory, stating that a firm's operating strategy and service delivery influence customers' external service value and enhance customer satisfaction and loyalty. The central idea proposed by SPC theorists is that sustainable corporate success is dependent on the actions taken by management to drive simultaneous satisfaction of customers and employees (Hogreve et al., 2017). The SPC model links internal services to employee satisfaction, retention, and productivity as antecedents to service quality, customer

satisfaction, and retention. The strategy of providing services that create value for the customer is to influence satisfaction and, in turn, increase the likelihood of how repurchases align with the SPC theory and model (Heskett et al., 1994).

The participants defined customer satisfaction as meeting and sometimes exceeding customer expectations. Parasuraman et al. (1988) defined customer satisfaction as the pleasure or disappointment of comparing the perceived performance (or outcome) of the service received to the customer's expectations. Therefore, the participant's common definition of customer satisfaction aligns with Parasuraman et al. (1988).

Service failures are inevitable in long-term relationships; however, appropriate recovery procedures can help overcome dissatisfaction and contribute to customer retention. Researchers have found that the provider's actions to correct a service failure or customer complaint (recovery) significantly affect satisfaction (Chao & Cheng, 2019). The service recovery theorists proposed that customer satisfaction can increase above the prefailure state after a successful service recovery (Hübner et al., 2018). Service recovery researchers have explored the phenomena across multiple disciplines and levels of the organization across three fundamental stages: (a) antecedents to failure, (b) recovery process, and (c) postrecovery effects (Chao & Cheng, 2019; Hübner et al., 2018). The extraordinary measures to repair product failures described by respondents support service recovery theory (Chao & Cheng, 2019; Hübner et al., 2018;).

Successful sales managers of medical imaging devices combine and adapt elements of multiple conceptual models to create their strategy and employ various

tactics for implementation. Researchers have proposed that value-added service offerings help manufacturers understand the in-service product performance and enable deeper customer relationships to improve system design and address more complex requirements to retain customers (Raddats et al., 2016). The firms explored, provided, and created multiple forms of value-added service tailored to each customer and changed the service to address customer requests, making their approach a complex system as described by Raddats et al. (2019). Therefore, successful strategies for long-term customer retention are complex systems.

Theme 2: Providing Employees Resources, Training, and Support Ensures Prompt Resolution to Unexpected Events

Delivery of value-added services requires training, tools, processes, and management's commitment to customer satisfaction and long-term customer retention. Heskett et al. (1994) explained that internal services enable the organization to link a network of functional units to satisfy employees and customers. With the SPC theory, the internal service quality construct includes workplace design, job design, employee selection and development, employee rewards and recognition, tools for serving customers, and leadership (Heskett et al., 1994). The fundamental internal service quality element combines tools, processes, policies, and the leadership's support to meet customer expectations.

All the participants explained that service flexibility is a competitive advantage. Some competitors offer service contracts with strict limits to parts covered, response

timeframes, and uptime commitments; some include penalties for not meeting the preagreed terms. All the respondents said that they differentiated their service by adding an element of flexibility to their service delivery to allow immediate changes to respond to customer needs regardless of contractual obligations. The participants stated that their approach requires additional training and management involvement to define and approve exceptions. However, the benefits gained from exceeding customer needs outweigh the resources needed to execute flexible service offerings.

The participants reported that their firms make significant investments in training their service personnel to ensure they have the technical knowledge to troubleshoot and repair the products under their care. In addition to training, firms had well-defined processes to receive, manage, and report service requests and provide field personnel with additional expertise to solve complex issues. Participant 4 explained that “we hire good people, give them the right tools and keep on training them to provide good service, sales, and support to solve or work around problems.” Additionally, management’s support was essential to achieving the flexibility needed to make fast decisions to meet customer needs. Participant 4 explained that “training gives you the tools to identify and solve most technical issues. An escalation process solves problems faster.” The escalation process is necessary to allow deviation from the standard practices and the cornerstone of value-added service.

Internal service quality is not limited to the ability to fix products. Participants explained that the value-added starts with communication. All the firms explored had call

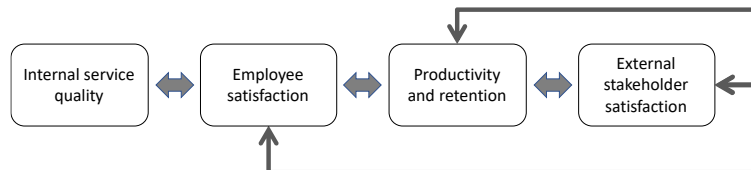
centers and software systems to manage service dispatches and offer multiple ways to request in-person and online support. Many provide 24-hour phone access or direct access to field service and sales personnel. Call centers use service management software systems to monitor and track all service events (tickets) and used the information to measure their performance. Participants explained that while tracking service events help optimize service delivery, the data is often used to maintain communication between multiple departments involved in the process and with the customer. Participant 4 explained that providing information to the customer consistently, regardless of whom they call within the organization, creates a perception of professionalism and accountability. Participant 5 said that communication is critical for service recovery and adds value by providing easy access to sales and service information and accurate records of system performance. In some cases, system usage and service information helped customers justify upgrading or replacing systems reaching the end of their capacity or useful life, driving repurchases and long-term customer retention.

Alignment and support from other departments and leadership are critical to implementing value-added services. Participants reported that most customer interactions in sales and service, while relatively complex, are routine for their organization. However, multiple departments met regularly to coordinate efforts and ensure smooth internal transactions (see Figure 4). For example, service personnel coordinate with the supply chain team and vendors to ship products or parts. The company's leadership may

be involved when extraordinary expenses need to be incurred to meet customer needs or commitments.

Figure 4

Communication Flow for Service Delivery



Note. The arrows represent communication channels between functions to coordinate service delivery.

The strategies used to ensure people are trained and able to deliver value-added service include: (a) regular training of service personnel, (b) use of service management software to have visibility to any open issues across all areas involved (c) clear processes to manage escalations to the executive level. All participants said that their employees received training and the tools to access information to increase productivity. The use of software provided a common point of contact to share information and delegate tasks to ensure prompt service. Access to senior management to secure approvals for extraordinary events accelerated resolution, and, if needed, senior management negotiated alternatives with the customer to allow service personnel to focus on customer satisfaction.

The responses supported the definition of internal service quality as the foundation of service delivery proposed by SPC researchers. Almohaimmed (2019), Karatepe and Olugbade (2016) and Sharma et al. (2016.) defined internal service quality

as an operational strategy and service delivery focused on equipping employees with the skills and authority to serve customers. However, none of the participants linked internal service quality to employee satisfaction or productivity. In contrast, most participants shared the difficulty of finding customer-centric employees, having a long-term view of customer retention, or being a good cultural fit with the organization. Some participants reported difficulty recruiting entry-level positions as many qualified candidates sought a work-life balance that does not require working after hours or weekends, which medical facilities often prefer. Researchers proposed leveraging the generational gap as a tool to create processes and tools that attract younger workers and create new value-added services to customers (Jirasevijinda, 2018). Some participants said they were implementing employee development plans that require less technical knowledge to attract and invest in training people who fit the desired profile to continue creating value-added services.

Theme 3: Incentivizing Personnel to Build Relationships and Meet Customer Needs Improves Customer Satisfaction

Customer relationships are considered critical to long-term customer retention by the participants. This view is supported by the SPC theorist (Heskett et al., 1994) that proposed a relationship between internal service quality, customer satisfaction and retention (Heskett et al., 1994). Debnath et al. (2016) explained that trust and commitment are essential to relationships and that the role of conflict resolution can have a disproportionate effect on customer satisfaction. Participant 2 stated that customer

retention is driven by relationships and links customer interactions across the multiple people involved. Participants also noted that relationships evolve and must be nurtured to influence customer satisfaction and repurchases/ All participants explained that they provide recognition and sometimes monetary rewards to incentivize employees to meet customer expectations. Some participants said that relationships could be more important than performance. Customers often tolerate a service call taking longer than usual because they value their relationship with the field engineer. The respondent's reliance on building and nurturing customer relationships, trust, and commitment to set expectations and streamline conflict resolution align with Debnath et al. (2016).

All participants stated that building and nurturing customer relationships require empathy, accountability, honesty, product and industry knowledge, and genuine interest to help the customer in the short and long term. Participant 1 described empathy as “thinking of a person coming to fix something at home and how do you want them to treat your loved one when they walk in the door?” Participant 4 described accountability and honesty by saying that “when a customer has a problem, they know they can call me directly to know what is going on and how we will take care of it.” Participant 2 said that “you have to be a student of the product, the industry and the customer to build the business relationship, but you also have to be honest and care about the personal relationship” as a way to foster customer relationships. At the same time, respondents focused on recruiting personnel who enjoy working with people and have a long-term view of their careers and customers. However, the participants explained that their firms

limit training to processes, tools, and technology and hire people with personality traits that help relationship building. Additionally, the participants reported that employees were expected to invest their own time and resources to develop the industry knowledge required for a consultative approach to selling.

Relationships are not immune to change. Some participants reported that, in rare cases, firms have a significant technological advantage to meet customer needs and can sell products without establishing customer relationships. Additionally, personnel changes can have an impact on relationships. Participant 4 reported that when a key decision-maker leaves the customer, a new connection must be built with the replacement who may have existing relationships with competitors that limit the firm's ability to retain the customer.

Customer relationships are an important element of the strategy. The most common strategy reported was hiring friendly personnel who enjoy working with people and have a long-term view of their careers and customers. All participants reported providing awards, recognition, or bonuses to service personnel who consistently received good reviews from the customer.

Researchers support the importance of customer relations as a strategic element of long-term customer retention (Zolkiewski et al., 2017), the possibility of leveraging retention to solve problems (Chao & Cheng, 2019), and the technology and personnel changes that affect the impact of relationships in retention (Pedeliento et al., 2016). Customer relations facilitate interactions and help uncover customer needs.

The lack of measurement or training was noted. All the participants said they rely on service sales and dispatch to measure service performance; two respondents from the same firm said they use postservice surveys to measure satisfaction. CRM software is used to manage customer relationships and measures long-term customer retention (Fotiadis & Vassiliadis, 2017). Luo et al. (2019) explained that firms could implement training programs to provide personnel the tools and skills to develop and nurture customer relationships. However, none of the firms explored used CRM software or provided formal training programs to help employees build and nurture relationships. Instead, they rely on hiring service-oriented personnel and providing recognition and monetary incentives for solving customer issues, entrusting management with training and rewarding personnel to develop and nurture relationships.

Sales managers leveraged industry and customer knowledge to drive communication between decision-makers and users as a value-added strategy for long-term customer retention. Researchers have found that the influence of relationships and satisfaction varies over time (Gremler et al., 2020; Otto et al., 2020). Furthermore, in some cases, the customer approaches replacement purchases as a completely new process (Pedeliento et al., 2016). The participants explained that, in many cases, the decision-makers do not communicate regularly with the users and do not completely understand the product's performance or the user experience in their facility. For this reason, sales managers add value by facilitating the communication between the user and the decision-makers.

Evanschitzky et al. (2020) found that relationships can fade due to unmet expectations or perceived neglect. The participants shared that they seek opportunities to have regular conversations with the customer for the sole purpose of nurturing the relationships. Participant 2 said that most of his customer interactions are devoted to building relationships. In his opinion, a good relationship will help avoid feelings of neglect and will facilitate surfacing causes of discomfort that may otherwise not be shared. Sales managers leveraged customer knowledge to drive communication between decision-makers and users as a value-add strategy for long-term customer retention. All respondents stayed abreast of the industry and their customers to become resources for decision-makers. Gathering and synthesizing information about the customer's operations and service events was often used to bridge the gap between the users and decision-makers. The combination of product, industry, and customer knowledge is intended to create value and secure access to the decision-makers outside the purchase process to foster relationships.

Summary of Themes, Strategies, and Links to Existing Research

Table 3 provides an overview of the strategies used by the participants. The table presents strategies by theme. There are variations in implementation, and some strategies may influence more than one theme.

Table 3*Themes and Strategies*

Theme	Strategies
Value-added services influence customer satisfaction and retention.	<p>Offer flexibility in services to match customer expectations.</p> <p>Provide value-added service to differentiate their company.</p> <p>Promote a long-term view of the customer.</p> <p>Use a consultative approach to sales and support.</p>
Providing employees resources, training, and support ensure prompt resolution to unexpected events.	<p>Regular training of service personnel.</p> <p>Use service management software to have visibility to any open issues across all areas involved.</p> <p>Processes to manage escalations to the executive level.</p>
Incentivizing personnel to build relationships and meet customer needs improves customer satisfaction.	<p>Recruitment of personnel who enjoy working with people and have a long-term view of their careers and customers.</p> <p>Recognize service personnel who consistently receive good reviews from the customer.</p> <p>Sales managers stay abreast of the industry to become resources for the customer.</p> <p>Gathering and synthesizing information about the customer's operations and service events to bridge the gap between the users and decision-makers</p>

The overarching themes found in the study showed an alignment between the strategies for long-term customer retention and the SPC theory and model that proposes a link between employee satisfaction, service quality to improve customer satisfaction and retention (Heskett et al., 1994). The implementation of the strategy also aligned with the existing research. The respondents defined satisfaction as meeting the customers' expectations supporting Parasuraman et al. (1988) definition of satisfaction as the

pleasure or disappointment of comparing the perceived performance (or outcome) of the service received to the customer's expectations. The creation of value-added services to influence customer satisfaction and retention stated in theme 1 support Son et al. (2021) who proposed that product and service play a significant role in improving repurchase and customer retention. Taking extraordinary measures to repair product failures supports service recovery theory, which states that correcting a service failure or customer complaint (recovery) significantly affects satisfaction (Chao & Cheng, 2019; Hübner et al., 2018).

As stated on theme 2, respondents provide employees resources, training, and support to ensure prompt resolution to unexpected events. This strategy is supported by research. SPC researchers have found that employee influences service quality and customer retention (Adeinat & Kassim, 2019; Patel et al., 2020). Additionally, researchers have found that new employees can bring new perspectives that can help create different approaches to customer service and create value to create new competitive advantages (Jirasevijinda, 2018). Some respondents reported leveraging the generational gap between senior and newer employees to create value-added services.

Theme 3, incentivizing personnel to build relationships and meet customer needs improves customer satisfaction, is also supported by previous research. Relationships influence customer satisfaction and repurchases (Otto et al., 2020), solve problems (Chao & Cheng, 2019), and long-term customer retention (Zolkiewski et al., 2017). Linking decision-makers and users is considered a value-added service. Researchers have found

that the influence of relationships and satisfaction varies over time (Evanschitzky et al., 2020; Gremler et al., 2020; Otto et al., 2020). Technology and personnel changes affect the impact of relationships, and, in some cases, the customer approaches replacement purchases as a completely new process (Pedeliento et al., 2016). All the participants said that many decision-makers are often not equipment users. For this reason, the participants combine industry and product knowledge with product usage and service records to close the knowledge gap between users and decision-makers as a value add to the customer to improve long-term customer retention.

Application to Professional Practice

The findings of this study may help current and emerging sales managers of medical imaging devices create and implement effective strategies for long-term customer retention. The SPC theory and model (Heskett et al., 1994) provided a framework of management strategies to help organizations build customer retention strategies. This study showed how successful sales managers of medical imaging devices combine the SPC framework with the strategic value of customer relationships and service recovery. The specific strategies and supporting actions used by successful sales managers for achieving long-term customer retention were also discussed.

The findings in this study showed that successful sales managers of medical imaging devices enhance product and service offerings with value-added services that can help increase customer satisfaction and drive retention. Implementing a value-added service strategy requires flexibility to adapt to changing customer needs. Building and

delivering flexible value-added services requires the organization to provide employees the resources, training, and support to aid the resolution to unexpected events (service recovery). Additionally, management needs to train and incentivize personnel to build customer relations to ensure customer needs are understood and met.

The long lifecycle of medical imaging devices can be a challenge for long-term customer retention. In addition to building and delivering value-added services, successful sales managers increase the frequency of their interactions with customers by facilitating the communication between users and decision-makers in the customer organization to create awareness of how the value-added services contribute to the organization. Sales management often shared industry and product knowledge with customers as a value-add that helps make equipment purchases and replacements.

Understanding the role of value-added services as a strategic approach to customer retention and the key actions needed for successful implementation can help sales managers of medical imaging devices and similar products increase long-term customer satisfaction and retention. Increasing customer satisfaction may help increase the value of the product. Customer retention can help reduce the cost of securing new business. The long-term effect of customer retention was intended to reduce the cost of operations and generate additional revenues that can support the investment in new products and technologies to drive growth to benefit customers, employees, and shareholders.

Implications for Social Change

Implementing the findings from this research may help sales managers of medical imaging devices create strategies to promote long-term customer retention. The implications for positive social change include the potential for increased sales and job creation for employees. The benefits of improving the value of medical imaging devices to the customer may help create new devices to meet customers' needs and likely improve the quality of diagnostic reports and patient experience while reducing care costs for individuals and society.

Recommendations for Action

Existing and aspiring sales managers of medical imaging devices and similar products should pay attention to the findings from this study. Based on academic literature and the findings from this study, the following recommendations for action can help develop and implement proven strategies that some sales managers of medical imaging devices use to improve long-term customer retention. Training programs to create value-added services can help foster long-term customer retention (Hogreve et al., 2017). Implementing metrics to measure and monitor customer satisfaction can help improve the effectiveness of the customer retention strategy (Fotiadis & Vassiliadis, 2017; Lee et al., 2020). CRM technology can drive efficiency in managing the strategy to increase long-term customer retention (Youssef et al., 2018). Linking users and decision-makers to help the organization stay informed on the product performance creates value

to the customer and facilitates relationship building to overcome the challenge of maintaining a relationship outside of the product selection and purchase process.

The study findings and recommendations will be disseminated through industry presentations at sales conferences, webinars, articles published in academic, industry, and marketing publications, as well as posts published in LinkedIn. All study participants received a summary of my findings, which might help them benefit from others' insights and apply the content to their businesses.

Recommendations for Further Research

This study included a small sample of managers overseeing sales of medical imaging devices that have successfully retained customers in the U.S. East Coast region. A mixed-methods study with a larger sample can help further the understanding of the phenomena. Additionally, all the participants work at distributors of medical imaging devices. Further exploration of strategies for long-term customer retention comparing strategies used by distributors and original equipment manufacturers may enhance understanding of strategies used for long-term customer retention.

The following recommendations for further study were derived from the findings:

(a) exploring qualitative methods to create value-added services for medical imaging devices, (b) selection of training and incentive programs to develop customer-centric employees, (c) applicability of SERVPERF methodology and survey to measure customer satisfaction in medical imaging devices, and (d) define the type of CRM automation needed to gather, organize, and share industry and customer information.

CRM automation could increase communication efficiency between the sales manager and customers to create value and increase long-term customer retention in the medical device industry.

Reflections

The purpose of this qualitative multiple case study was to explore successful strategies for long-term customer retention. I chose this topic as an area of research because, as a marketing professional working in the medical imaging field, I noticed that most marketing efforts aim to attract new customers. My goal was to understand the strategies used to promote customer retention. To mitigate the potential bias derived from my familiarity with the research topic, I asked participants to confirm or deny existing assumptions and used bracketing to apply self-reflexivity when coding the answers.

I was challenged to recruit participants working at original equipment manufacturers because most sales leaders were not interested in participating or argued that they needed permission from the organization to participate. In contrast, distributors were willing to participate and provide access to leadership. All the participants found the topic important to their organization and the industry. One of the participants met with his peers to discuss the interview questions before our meeting. Another asked for a copy of the transcript to use his answers for an upcoming sales meeting.

The doctoral study process was a unique learning experience for me. I learned a lot about the topic, academic rigor, and how to research academic knowledge. I also

learned how to understand academic research and apply critical thinking to put the learnings into practice and learn from my mistakes.

Conclusion

Successful sales managers of medical imaging devices used flexible value-added services as a strategy for differentiation and long-term customer retention. The key recommendation of this study was to implement a value-added services strategy to meet or exceed customer expectations to increase long-term customer retention. Implementing a value-added service strategy required resources, training, and support to ensure the company can offer flexibility and fast resolution of unexpected events. Successful managers created value-added by training and incentivizing personnel to build relationships and meet customer needs. Additionally, successful sales managers stayed informed of the customer's activities, industry trends, and new products to become resources to decision-makers and facilitate access even if the customer is not planning a purchase.

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Appendix A: Interview Protocol

What I will do	What I will say - script
Introduce the interview and set the stage	Hello, our objective is to discuss the key strategies that help your business retain customers in the long-term. I will ask a few questions about what you do. There are no right or wrong answers; please answer as wholly and as truthfully as possible.
Get permission to record the interview	I want to make sure I capture your thoughts accurately. Is it ok if I record our conversation and keep short notes? The information will remain confidential.
Start interview -Watch for non-verbal queues -Paraphrase as needed - Ask follow-up and probing questions	<ol style="list-style-type: none"> 1. What are the strategies you use for retaining customers? 2. Based on your organization's experience, what role does product or service satisfaction play in customer retention? 3. What were the key barriers to implementing your organizations' successful strategies for retaining medical image equipment customers? 4. How did your organization address the key barriers to

- implementing its successful organization's strategies for retaining medical image equipment customers?
5. How does your organization assess the effectiveness of its strategies for retaining its medical image equipment customers?
 6. What methods do you use to ensure customer feedback is captured and used to improve long-term customer retention?
 7. How do you address situations that hinder customer retention?
 8. How does the service you provide additional value to the customer?
 9. How do the services you offer help improve customer retention?
 10. What else can you share with me about your organization's strategies to create value and retain medical imaging device customers

Wrap up interview

- a. These are all the questions I have for you today.

Schedule follow-up member checking interview	I will transcribe your responses, write a summary of our discussion, and send it to you next week. Can we schedule a short conversation on {Date} to make sure I captured the information entirely and correctly understood your strategies? Is there a good day for our follow-up?
-------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Thank Participant for their participation	Thank you for your time today. I learned a lot about you and your company.
----------------------------------------------------------	----------------------------------------------------------------------------

Member Checking

What I will do	What I will say – script
Get permission to Record	I want to make sure I capture your thoughts accurately. Is it ok if I record our conversation and keep short notes? The information will remain confidential.

Make sure they have received a summary of the interpretations.

I sent a summary of our last discussion on {date}. Did you receive it and have a chance to look it over?

Ensure accuracy and completeness

Read each question and Ask:

Did I understand you correctly?

Did I miss anything?

Is there something you would like to add?

Expand and verify
Prepare to probe and ask clarifying questions

I want to discuss X in more detail. Can you elaborate on it?

Thank Participant for their participation

Thank you for your time today. I learned a lot about you and your company. I will send a copy of the final version of the study once it is completed.

Appendix B: Interview Questions

1. What are the strategies you use for retaining customers?
2. Based on your organization's experience, what role does product or service satisfaction play in customer retention?
3. What were the key barriers to implementing your organizations' successful strategies for retaining medical image equipment customers?
4. How did your organization address the key barriers to implementing its successful strategies for retaining medical image equipment customers?
5. How does your organization assess the effectiveness of its strategies for retaining its medical image equipment customers?
6. What methods do you use to ensure customer feedback is captured and used to improve long-term customer retention?
7. How do you address situations that hinder customer retention?
8. How does the service you provide bring additional value to the customer?
9. How do the services you offer help improve customer retention?
10. What else can you share with me about your organization's strategies to create value and retain medical imaging device customers?

Appendix C: Copyright Clearance

From: Tim Cannon (Harvard Business Publishing)

Nov 29, 2021, 12:09 PM EST

Dear Guillermo Sander,

Thank you for your email. Please note that as long as the requested Service Profit Chain model HBR article exhibit is only being used to fulfill the class assignment in your upcoming Business Administration doctoral study: "Strategies for Improving Customer Retention for Medical Imaging Devices" as a requisite in pursuit of your Walden University degree, HBP permission would be granted at no charge as long as the material is fully cited (see following).

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Best of luck with your upcoming Walden University degree Business Administration doctoral study.

Regards,

Tim Cannon

Permissions Coordinator

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