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Benefits of Successful Adoption of Online Channels by Pet Care Small Businesses

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Abstract

Pet care small businesses risk failure if they do not successfully adopt technologies that can make pet ownership easier and more affordable for their customers. Pet care providers and investors will gain insight into opportunities for technology to make pet ownership easier and more affordable and accessible. The literature reviewed was published between 2012 and 2017. This study is significant because the pet care services industry is rapidly growing, but often lacks the technologies to attract pet owners.

Keywords: pet care provider, e-commerce, m-commerce, technology adoption, online channels

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Introduction to the Annotated Bibliography

Problem Statement

Small business enterprises (SBEs) lacking the ability to utilize technology may face business failure in the future (Turner & Endres, 2017). Small businesses are “individuals who conceive, launch, and assume the risk for new economic activities in the form of a business venture” (Turner & Endres, 2017, p. 1). The U.S. Small Business Administration (SBA) defines a small business as an independent business employing less than 500 employees (SBA, 2016). In addition to employing fewer people, SBEs historically have been wary to adopt technology versus large companies, a decision which contributes to high failure rates (Beatty, 2017).

Jeansson, Nikou, Lundqvist, Marcusson, Sell and Walden posit that small companies cannot rely solely on in-person customer interactions, noting the growth of electronic commerce and mobile commerce in importance (2017). Electronic commerce, or e-commerce, is defined as a business activity transacted electronically to improve competitive advantage related to selling products and services (Hamad, Elbeltagi, Jones, & El-Gohary, 2015); mobile e-commerce, or m-commerce (Hubert, Blut, Brock, Backhaus & Eberhardt, 2017), allows “consumers to conduct online transactions via handheld devices” (Li, Dong, & Chen, 2012, p.121, para. 1).

E-commerce has substantial potential to foster the growth of small business (Kurnia, Choudrie, Mahbubur, & Alzougool, 2015). Web-enabled systems allow SBEs to share information about and permit online purchases of products and services (Bi, Davison, & Smyrnios, 2017). Conducting business electronically also helps companies grow, discover new markets, and outperform market competitors (Bi, Davison, & Smyrnios, 2017). The use of technologies like e-commerce and m-commerce offers companies the capability to reach a larger

market without expanding their physical business presence (Kurnia, Choudrie, Mahbubur, & Alzougool, 2015). Online technologies like e-commerce also offer an edge to small businesses when competing with larger businesses (Mack, Marie-Pierre, & Redican, 2017).

M-commerce represents a rapidly growing share of e-commerce (Egol & Hodson, 2013), and can be leveraged to connect consumers with businesses through Internet-connected devices known as smartphones (Reinhart & Naatus, 2017). According to Kim, Li, and Kim (2015), the vast growth of smartphone ownership has paved the way for increases in online shopping using smartphones. A smartphone is a “mobile phone (also known as a cell phone or cell mobile) with an advanced mobile operating system that combines features of a personal computer” (Calinici, 2017, p. 1). Data provided by the Pew Research Center indicates that 95% of Americans own a cell phone, and 74% of adults own a smartphone (Pew Research Center, 2017). Sales of smartphones and smart devices are predicted to reach \$132 billion in 2018 (Li, Dong, & Chen, 2012).

Hubert, Blut, Brock, Backhaus and Eberhardt (2017) state that more than one-third of e-commerce is being executed using smart devices, and add “smartphones are also the predominant driver of growth of mobile e-commerce” (Hubert, Blut, Brock, Backhaus & Eberhardt, 2017, para. 1). The growth of smartphone ownership has also given rise to a proliferation of mobile apps (Reinhart & Naatus, 2017), defined as “software programs designed specifically to run on mobile devices” (West, Hall, Hanson, Barnes, Giraud-Carrier, & Barrett, 2012, para. 2). Reinhart and Naatus (2017) declare “it is easier than ever for consumers to instantly research, review and buy products with a small device in their hands” (p. 28).

Smartphones and smart devices and the apps that run on them have changed the way consumers search for, evaluate, and purchase products and services (Rigby, 2014). The

expansion into a new online channel such as m-commerce opens the door for small businesses to take advantage of opportunities in the market, grow their customer bases, and continue to serve existing customers (Jeansson, Nikou, Lundqvist, Marcusson, Sell & Walden, 2017). By utilizing the m-commerce channel, SBEs experience a greater level of access to consumers than e-commerce alone (Lee, & Wong, 2016).

John Beatty of the *Harvard Business Review* asserts that small businesses are the “back bone of our country” (Beatty, 2017, para. 1), and adds that these small businesses have “yet to come online” (Beatty, 2017, para. 1) like other e-commerce businesses who have embraced technology to increase value (Beatty, 2017). Seventy-four percent of small businesses do not participate in online channels like e-commerce and m-commerce (Sephy, 2017). There is a gap in the ability of small businesses to capitalize on mobile technology that would allow consumers to shop and pay for products and services via their mobile device or smartphone (Hillman & Neustaedter, 2017). Chou, Chuang, and Shao (2016) note “nontrivial challenges of developing effective business strategies and generating revenues by exploiting mobile technologies has prevented many firms from initiating m-commerce” (p. 1). Sephy (2017) concludes, “Ecommerce sales are skyrocketing and consumers are demanding an easier way to search and pay for products and services, be it just online or more specifically, on their smartphones. If you’re not offering this to your customers, there’s a chance they’ll find a competitor that is” (para. 11).

Pet care small businesses have not leveraged technologies available through smartphones and smart devices (Vogelsang & Wagner, 2016). Vogelsang and Wagner (2016) posit the smartphone is “key to the future of the veterinary practice” (Vogelsang & Wagner, 2016, para. 3). According to the U.S. Census Bureau (2017), in 2015 there were 30,984 veterinary

establishments (NAICS 541940) and 16,325 non-veterinary pet care service provider small businesses (NAICS 812910) in the United States, as defined by the U.S. Small Business Administration. Small businesses encompassing veterinary and pet care services show promise in customer use and adoption of online and mobile technology (Howard, 2017).

Dr. Adam Little, DVM, director of veterinary innovation and entrepreneurship at Texas A & M University, notes that smartphones are a means of offering pet owners better pet care services (Vogelsang & Wagner, 2016). Dr. Karen Felsted, DVM, CVPM, MS, CPA concurs, adding that by eliminating burdens placed on pet owners through technology, pet owners will become more focused on pet care (Vogelsang & Wagner, 2016). A survey of 610 pet owners indicated that 40% of pet owners want to be able to order medications, and 50% of pet owners would like to be able to schedule pet care services, via a mobile app (Howard, 2017). Dr. Ernest E. Ward Jr. DVM (2017) suggests a new wave of pet owners are demanding the ability to find information, shop, book appointments, communicate, and procure pet records through online channels. Ward (2017) admits the rise of online savvy pet owners is “one reason I started offering clients an iPad” (Ward, 2017, para. 5).

Gabay, Moskowitz, Rotondo, and Aspros (2014) point out that the growth in pet and smartphone ownership may “open up new opportunities for veterinarians to offer their services and market to clients, based on satisfying the client needs, and the perceived needs of the pets” (p. 3). Sixty-five percent of U.S. households owned at least one pet in 2016 (Tiben, 2016), while 77% of adults owned smartphones (Pew Research Center, 2017). The evolving synergies of increasing numbers of pet owners and of smartphone owners and the growth in technology innovation in e-commerce and m-commerce tools suggest that opportunities may exist for small business pet service providers to create online offerings of pet care services and products.

Purpose Statement

The purpose of this annotated bibliography is to present literature addressing the gap in online channel utilization by pet care small businesses, the benefits of utilizing online channels, and the successful adoption of online technologies by small businesses. The information in this study will provide pet-centric small businesses insight into the advantages e-commerce and m-commerce offer related to business growth and consumer satisfaction. Venture capitalists and angel investors may also be informed by this study as it relates to investing in technologies which provide small pet service businesses the ability to take advantage of new online channels.

Research Question

What online channel solutions can small pet service provider businesses use to grow their businesses?

Sub-question.

1. How can small businesses use e-commerce and m-commerce technologies to market to pet owners who own smartphones?

Audience Description

The intended audience for this study includes pet service provider small businesses, veterinary service providers, angel investors, and venture capitalists.

Pet service provider small businesses. Pet care services are defined by the North America Classification System (NAICS) under code 812910 as grooming, boarding, training, and sitting (U.S. Census Bureau, n.d.). Pet service providers stand to benefit from this study by learning how online tools can be leveraged to stimulate business growth and expand sales and profits.

Veterinary service providers. Veterinary service providers are defined by the NAICS under code 541940 as licensed veterinary establishments that practice veterinary medicine, dental services, or surgical services (U.S. Census Bureau, n.d.). Veterinary service providers stand to benefit from this study by learning how online tools can be leveraged to stimulate business growth and expand sales and profits.

Angel Investor(s). Angel investors are private investors offer funding to start-up companies during the early stages of company launch (Ding, Sun, & Au, 2014). Angel investors also provide managerial and/or entrepreneurial guidance, access to their networks, and serve as board members, and mentors (Collewaert & Sapienza, 2016). Angel investors will benefit from the study by understanding the problem posed by lack of adoption of e-commerce and m-commerce technologies by pet service provider small businesses and determining if a proposed solution to the problem is worthy of an investment of capital.

Venture Capitalist(s). Venture capitalist(s) (VC(s)) are individuals, groups of individuals or companies who provide capital, management, and access to larger business networks (Tian, Xu, Gu, & Herrera-Viedma, 2017). Venture capitalists will benefit from this study by becoming informed about the technological challenges small pet service provider businesses are facing. This knowledge will assist venture capitalists in accurately assessing potential opportunities afforded to these businesses by e-commerce and m-commerce applications. In their study titled *Strike a happy medium: The effect of IT knowledge on venture capitalists' overconfidence in IT investments*, Singh, Aggarwal and Cojuharenco (2015) argue that by increasing a venture capitalist's knowledge of Information Technology (IT), overconfidence in the related investment may be reduced.

Search Report

Search strategy. The initial business problem is complex, as there are multiple inputs to consider before narrowing the topic to a succinct business problem and subsequent research question. Inputs I considered include pet care, veterinary care, pet industry demographics, small business challenges/barriers, small business growth, lack of technology for marketing and process automation, and pet care cost as it relates to the cost of pet ownership.

My strategy was to collect as much relevant scholarly information as possible and supplement the core information to identify whether the problem was adequately described in the literature and worthy of study. I have been able to collect information that either directly or indirectly applies to the study, although not all sources will be included as part of the annotated bibliography.

I considered relevancy a high priority in my applied search strategy. Data published within the last five years (2012-2017) was considered relevant to this study. I assessed information dated 2016 and newer as more valuable compared to information dated from 2012 to 2015. The emphasis on newer, more relevant data will ensure the study is being founded on the latest available knowledge and research.

Databases. I accessed the following databases during the search for sources:

- Academic OneFile.
- Academic Search Premier.
- ACM Digital Library.
- Business Economics and Theory.
- Business Plans Handbook.
- Business Source Complete.

- CiteSeer.
- Computer Database.
- Computer Source.
- Google Scholar.
- JSTOR.
- MarketResearch.com Academic.
- Small Business Resource Center.
- Springer Link.

Journals. I accessed the following journals during the search for sources:

- Harvard Business Review.
- Veterinary Economics.

Search engines. I utilized the following search engines during the search for sources:

- UO Library Quick Search (LibrarySearch).
- Google (to locate veterinary journals).

Search terms. I used the following list of keywords across the various search engines and online databases as described in the above sections. Keyword sets delimited by a bulleted list and the use of (AND) represent the use of advanced search functionality offered by search engines and databases, where applicable.

Keywords.

- business-to-business (AND) E-commerce.
- m-commerce.
- m-commerce (AND) smartphone.
- peer to peer marketplace.

- peer to peer marketplaces.
- pet care.
- pet care (AND) cost.
- pet health care.
- pet care service marketing growth challenges (AND) "DVM".
- pet ownership.
- pet services.
- pet services (AND) costs.
- pros cons e-commerce SME.
- veterinary care.
- small business (AND) challenge (AND) business development.
- small business (AND) challenge (AND) costs.
- small business (AND) development.
- small business (AND) e-commerce (OR) ecommerce (AND) adoption.
- small business (AND) e-commerce (OR) ecommerce (AND) growth.
- small business (AND) growth.
- small business (AND) marketplace.
- small business (AND) technology (AND) adoption.
- small business (AND) technology (AND) challenges.
- small business ecommerce smartphone.
- small business marketing growth challenges.
- small business challenge.
- small business enterprise.

- small business owners (AND) challenges.
- small business (AND) pet care.
- small business struggles.
- SME technology adoption.
- online marketplace (AND) development.
- online marketplace (AND) peer to peer.
- venture capital.
- venture capitalist.
- venture capitalists.

Documentation strategy. The devised documentation strategy consists of two parts: the collection of references and the cataloging of literature.

Reference collection. I collected references using two methods. I used Zotero to collect the Digital Object Identifier (DOI) reference metadata and then export the formatted reference with enumeration to a document containing a list of references and accompanying abstracts. I used the citation tools of electronic sources where available and exported the citations with enumeration and accompanying abstracts to the inventory of references document.

Literature collection. When available, the literature sources were downloaded in portable document format (PDF) and cataloged into a designated folder. The document was named with the corresponding number and title of the source.

Evaluation strategy. The evaluation of literature strategy is built upon the principles defined in Evaluating Information Source documentation (Center for Public Issues, 2014), which provides five criteria for the evaluation of information sources.

Authority. Authority was determined by reviewing the author's credentials; the reputation of the author's organization as represented by the organization's membership, mission, and vision; the frequency the article is cited; and subsequent publishing channels such as websites and academic or peer reviewed journals. In the review of additional publishing channels, I took into consideration the affiliation of the author to the channel. An author publishing on a non-academic website was disqualified unless it could be determined with limited effort that the author had received no benefit for the information he or she provided.

Bias. I determined bias by reviewing the author's introduction and conclusion sections to ensure the author presented more than personal opinions and avoided sources by authors who sell related products or services.

Quality. I assessed the quality of sources by ensuring the literature adhered to proper grammar and spelling deemed acceptable by academic institutions. I gave additional consideration if the document contained embedded characters, as technology may have affected the document output. I did not immediately consider information sources with such concerns unacceptable.

Relevancy. I determined relevancy by assessing if the selected information source related to the topic of the study. The Center for Public Issues (2014) suggests considering scholarly articles over magazines, newspapers and non-scholarly bloggers.

Timeliness. Timeliness is defined for this study as having been published within the last five years of the commencement of this study. When applicable, exceptions to this boundary are given for information such as definitions.

Annotated Bibliography

Introduction

The annotated bibliography for this study is comprised of 15 references focusing on small businesses and their use of e-commerce and m-commerce technologies; the main focus is on pet care service small businesses. The sources identified for this study are sorted into three categories: (a) benefits of online channels, (b) online strategies for pet care services, and (c) successful small business adoption and use of online channels. The sources presented are formatted according to the standards of the American Psychology Association's (APA's) sixth edition guide for referenced sources. The abstract associated with each reference is included with the formatted reference; abstracts deemed lengthy were edited to reduce length. A summarization of the referenced content is provided to demonstrate the relevance of the source to the study. The summary is the opinion of the author(s) of the references being presented.

Category 1: Benefits of Online Channels

Bang, Y., Lee, D. J., Han, K., Hwang, M., & Ahn, J. H. (2013). Channel capabilities, product characteristics, and the impacts of mobile channel introduction. *Journal of Management Information Systems*, 30(2), 101–126. <https://doi.org/10.2753/MIS0742-1222300204>

Abstract. Drawing on the notion of channel capability, we develop a theoretical framework for understanding the interactions between mobile and traditional online channels for products with different characteristics. Specifically, we identify two channel capabilities—access and search capabilities—that differentiate mobile and online channels, and two product characteristics that are directly related to the channel capabilities—time criticality and information intensity. Based on this framework, we generate a set of predictions on the differential effects of mobile channel introduction across different product categories. We test

the predictions by applying a counterfactual analysis based on vector autoregression to a large panel data set from a leading e-market in Korea that covers a 28-month period and contains all of the transactions made through the online and mobile channels before and after the mobile channel introduction. Consistent with our theoretical predictions, our results suggest that the performance impact of the mobile channel depends on the two product characteristics and the resulting product-channel fit. We discuss implications for theory and multi-channel strategy.

Summary. The authors of this article seek to understand the impact of introducing a mobile channel (m-commerce) into an existing multichannel environment. The authors define multichannel as the inclusion of offline, online, and catalog (i.e., mail order) channels. The authors identify relationships between the channel's capabilities to *time sensitivity of the transaction* and the *amount of information about a product*, which the authors identify as the characteristics of the product. The authors extended the *channels capabilities* framework proposed by Avery, Steenburgh, Deighton, and Caravella (2012) to relate the capabilities of online and mobile channels to product characteristics. The authors also identify how product categories impact channel performance by defining relationships between online and mobile capabilities. The authors use the characteristics of a product to compare performance across product categories.

Using the product-channel fit matrix, the authors concluded that mobile channels are not substitutes for online channels, but instead serve as complements. The authors posit the addition of a mobile channel may reduce order size, but increase the overall number of transactions on online channels and increase overall revenue. The authors found four key differential effects of introducing a mobile channel with the two product characteristics of time criticality and level of information. First, the authors conclude that for products with low levels of information and high

time sensitivity, mobile channels outperform online channels due to the immediacy of the mobile channel. Second, the authors posit that for products with high time criticality and high information intensity, a strong synergy existed between the number of transactions on mobile channels and the number on online channels, resulting in a boost in online channel revenue and total revenue. Third, the authors state that for products with low time-criticality and low information intensity, demand is experienced in both channels as a result of the consumer having additional channels for transactions. Finally, the authors suggest that mobile channel introduction has a moderate effect on transactions on traditional online channels for products with characteristics of low time-sensitivity and high information intensity. The authors state that when the online channel fits the product, the mobile channel is less attractive because the mobile channel is not ideal for high information intensity.

This article is important to this study because the authors present a matrix for understanding product-channel fit.

Chou, Y. C., Chuang, H. H.C., & Shao, B. B. M. (2016). The impact of e-retail characteristics on initiating mobile retail services: A modular innovation perspective. *Information & Management*, 53(4), 481–492. <https://doi.org/10.1016/j.im.2015.11.003>

Abstract. The rise and challenges of m-commerce have led to an urgent need to examine how firms adopt the emerging sales channel. Early studies mainly discussed the differences between e-commerce and m-commerce. Our study shows the modular innovation from e-retailing to m-retailing, which changes the core component of service delivery but keeps the operations intact, provides more opportunities for well-entrenched firms. Using a dataset of e-retailers, we find e-retail characteristics have an impact on firm's migration to the mobile

domain. Firms with online service competencies, economies of scale, and physical outlets are more inclined to exploit opportunities provided by mobile technologies.

Summary. The authors introduce the concept of modular innovation and suggest the concept can be applied to an organization's adoption of m-commerce where an e-commerce presence already exists. The authors define the modular innovation concept as the change that is made to "a core design concept of a product but reinforces the remaining core components and the existing linkage of components" (para. 7). The authors state the concept applies to m-retailing in part because m-retailing builds upon the architecture of e-retailing.

While service delivery is the main difference between e-retailing and m-retailing, the authors posit the back-end operations and selective front-end capabilities of e-retailing can be leveraged by m-retailing. Order processing functionality such as checking inventory, assigning the order, procuring the order, and shipping the order remain intact regardless of whether the order was made from a PC (e-retailing) or a mobile device (m-retailing).

The authors conclude the service delivery methods of e-retailing and m-retailing do not change the overall business process. Rather, m-retailing inherits and expands on the core capability of e-retailing, making adjustments for the mobile platform and applying the concept of modular innovation. The authors point to the connection between e-commerce and m-commerce as an important service technology for both e-retailers and online marketers.

This source is relevant to this study because the authors demonstrate the importance of an e-commerce presence as a foundational building block to creating a m-commerce channel. The authors posit that a critical success factor is the ability of the mobile channel to inherit functionality from the existing e-commerce channel.

Kim, C., Li, W., & Kim, D. J. (2015). An empirical analysis of factors influencing m-shopping use. *International Journal of Human-Computer Interaction*, 31(12), 974–994.

<https://doi.org/10.1080/10447318.2015.1085717>

Abstract. With the wide popularity of mobile devices such as smartphones and tablets, mobile shopping, which can be conducted anytime and anywhere, has received increased attention and strengthened beyond expectations. This study investigates the factors influencing the use of mobile shopping (**m-shopping**) value from personality, usability, and technology perspectives. The **m-shopping** value that users experience during **m-shopping** can be divided into utilitarian value and hedonic value. The results show that personalization, self-efficacy, intimacy, simplicity, mobility, and connectivity have considerable influence on **m-shopping** value. More specifically, the personalization, simplicity, and connectivity of **m-shopping** influence utilitarian value, as well as hedonic value and shopping value, influences **m-shopping** use.

Summary. The purpose of this study was to review the value of mobile shopping (i.e., m-shopping) through the lenses of theoretical and practical implications. Kim, Li, and Kim created a research model to present the interrelationships that exist between three mobile shopping categories (personality, usability, and technology), their six characteristics (personalization, self-efficacy, intimacy, simplicity, mobility, and connectivity), and two derived mobile shopping values (utilitarian and hedonic). The authors define utilitarian as “purchasing products in an efficient and timely manner” (p. 975) and define hedonic as the “emotional benefits, such as enjoyment experienced through shopping in addition to the purchase of products” (p. 975). Using the research model, the authors determined positive relationships exist in the value derived from the characteristics of m-shopping.

The authors identified six practical implications from the study for mobile shopping providers. The authors determined that personalization, defined as consumer-centric features that improve the personality of the channel, has a significant impact on utilitarian and hedonic values. Self-efficacy, defined as a consumer's perception that he or she can buy or sell effectively online, impacted utilitarian but not hedonic values. Simplicity, defined as convenience and ease experienced by the consumer, impacted both hedonic and utilitarian values. Mobility, defined as the convenience of using technology anywhere at any time, impacted hedonic values. Finally, connectivity, defined as the immediacy of access to a network, has a significant effect on both hedonic and utilitarian values. The authors recommended that mobile shopping providers consider the tendencies of their consumers based on the relationships between the personality and simplicity categories and hedonic value.

This article is important to this study because the relationships between m-shopping characteristics and m-shopping values should be understood by small businesses aiming to expand into a new m-commerce online channel.

Reinhart, L., & Naatus, M. K. (2017). Groupon, m-commerce and mobile apps: Perceptions of small business owners and consumers. *Business & Entrepreneurship Journal*, 6(1), 1-3.

Abstract. This study analyzes the digital and mobile commerce market from the perspective of both consumers and small business owners in a particular urban area. Two surveys were conducted, one from a consumer perspective and the second from the small business owners' perspective. The surveys asked about use of and perceptions of Groupon and other mobile coupon deals. Preliminary findings suggest that while consumers are likely to use mobile apps to make purchases and save money, small business owners consider Groupon deals risky and are less likely to use them to help drive sales and attract new customers. The paper concludes

with recommendations for business owners to design digital deals that maximize consumer engagement as well as new revenue generation, thus minimizing the risk expressed in the business owner surveys.

Summary. The authors present findings from two surveys. The first survey was administered to students, faculty, and friends. The second survey was administered to small business owners in Jersey City and Hoboken, New Jersey. The findings from the surveys give evidence of the trend of consumers adopting mobile apps for commerce. The authors observed from the survey results that small businesses are more reserved and not as willing to embrace new mobile technologies as larger businesses.

The authors point to the rapid rise in m-commerce and the benefits to businesses of participating in social couponing. In parallel with the rise of m-commerce, the authors suggest that social discount channels have gained a greater acceptance among consumers. The authors state that mobile commerce technologies can be used by small businesses to drive sales and attract new customers or to advertise a new business.

In interpreting survey data collected for the article, the authors note differences in the acceptance of new technologies among business owners. The authors point out that the variation in acceptance was seen across age, gender, race, ethnicity, and the type of product or service being offered. The authors state that out of 50 businesses surveyed, 26% had tried an online deal app. The authors observed that while half of the participants were satisfied with their experience, half were not satisfied. The authors stated that owners who had not used online deal technologies cited concerns about poor results experienced by colleagues and negative stories about significant financial loss due to poor execution of an online deal as reasons why they had not participated.

The authors caution businesses who offer products rather than services from participating in online deals. The authors provide additional caution to both service and product-oriented businesses regarding offering a free product or service, noting that such deals are less likely to convert a participant into a repeat customer. The authors acknowledge online deal platforms can help build brand recognition in a local market.

This source is important to this study because it speaks to the hesitancy of small businesses to adopt new online channel technologies like m-commerce.

Category 2: Online Strategies for Pet Care Services

Chen, T. S., Chen, T. L., Chung, Y. F., Huang, Y. M., Chen, T. C., Wang, H., & Wei, W. (2016).

Implementation of online veterinary hospital on cloud platform. *Journal of Medical Systems*, 40(6), 147. <https://doi.org/10.1007/s10916-016-0501-x>

Abstract. Pet markets involve in great commercial possibilities, which boost thriving development of veterinary hospital businesses. The service tends to intensive competition and diversified channel environment. Information technology is integrated for developing the veterinary hospital cloud service platform. The platform contains not only pet medical services but veterinary hospital management and services. In the study, QR Code and cloud technology are applied to establish the veterinary hospital cloud service platform for pet search by labeling a pet's identification with QR Code. This technology can break the restriction on veterinary hospital inspection in different areas and allows veterinary hospitals receiving the medical records and information through the exclusive QR Code for more effective inspection. As an interactive platform, the veterinary hospital cloud service platform allows pet owners gaining the knowledge of pet diseases and healthcare. Moreover, pet owners can enquire and communicate with veterinarians through the platform. Also, veterinary hospitals can periodically send

reminders of relevant points and introduce exclusive marketing information with the platform for promoting the service items and establishing individualized marketing. Consequently, veterinary hospitals can increase the profits by information share and create the best solution in such a competitive veterinary market with industry alliance.

Summary. The authors of this article present a theoretical cloud-based platform for veterinary hospitals. The authors state the five objectives for the veterinary cloud platform as: (a) pet identification and search service, (b) real-time pet data retrieval, (c) reminder message automation, (d) pet health records, and (e) veterinary cloud service. The authors cite the growing pet adoption rates in Taiwan and the subsequent increasing saturation of veterinary hospitals leading to a reduction in quality care as a driver for this study.

The pet identification and search service introduced by the authors suggests replacing traditional pet tracking chips with QR Code labels that would present an owner or veterinarian with the medical history of the pet when scanned. The authors assert that the real-time nature afforded by the QR code will improve the accuracy of diagnosis and subsequent treatments, a benefit which the authors state would reduce waste.

The authors posit the reminder automation service affords veterinary hospitals the capability to actively remind pet owners of upcoming vaccinations and/or appointments. The authors state veterinarians could develop marketing campaigns to drive business growth. The information to generate these reminders and campaigns is part of the *individualized pet health record*, which contains demographic information about the pet and its owner(s). The authors define each of these services as components of the veterinary hospital cloud service platform, which connects multiple veterinarian hospitals. The authors state that such a system would allow pet owners to better understand their pet's health while improving medical outcomes.

This source is important to this study because the authors conclude the advantages of the proposed system will reduce location constraints by affording pet owners a wider network of veterinary hospitals from which to choose, reduce social resource waste and information costs through the digitization of pet health information, and improve the quality of care provided, resulting in healthier pets. The source therefore validates the benefit of online channels for veterinarians, a specific type of pet care service providers.

Howard, B. (2017, March 27). Apps for veterinary clients: “Why can’t I just do it on my smartphone?”. Retrieved from <http://veterinarynews.dvm360.com/apps-veterinary-clients-why-cant-i-just-do-it-my-smartphone>

Abstract. This abstract is provided by the author of this study in the absence of a published abstract. The article attempts to determine the depth of interest of pet owners in using smartphone applications as tools throughout the pet care journey. Dr. Lori Kogan, PhD surveyed 610 pet care owners living in the United States who owned at least one dog or cat and had seen a veterinarian within the last year to determine their levels of interest in using smartphone applications for scheduling appointments, ordering medications and pet food, reviewing office hours, searching for information, and accessing pet health records. The results of the survey are presented and interpreted.

Summary. This article provides insights regarding the demand of pet owners for smartphone apps to engage with their veterinarians. The author of the article used survey data collected by Lori Kogan, PhD, in partnership with Vet2Pet to present the types of activities pet owners desire from veterinary apps. The author states “apps continue to be a meaningful way for consumers to connect to businesses” (Howard, 2017, para. 1), which is corroborated by the study data. Kogan found that 55% of pet owners want the option of accessing their pet’s medical

records through online channels, 50% want the ability to schedule appointments online, 40% want the ability to order medications, and 34% want the ability to order pet food online.

The data presented in this article is relevant to understanding the market demand from pet owners for online channels like e-commerce and m-commerce that enable them to interact with their pet care service providers using smartphone applications rather than traditional channels. The survey results indicate that pet owners prefer smartphone applications rather than phone calls to order pet food and pet medications.

Vogelsang, J. & Wagner, J. (2016, October 19). A utopian future for veterinary medicine: How tech will get us there. Retrieved from <http://veterinarybusiness.dvm360.com/utopian-future-veterinary-medicine-how-tech-will-get-us-there>

Abstract. This abstract is provided by the author of this study in the absence of a published abstract. Jessica Vogelsang, DVM and Adrienne Wagner, DVM discuss the promise of smartphone use in veterinary practices. Vogelsang and Wagner present insights attained from Dr. Adam Little, who is the Director of Veterinary Innovation and Entrepreneurship at Texas A & M University, and Karen Felsted, DVM, CVPM, MS, CPA.

Summary. This article reviews the smartphone technologies available to veterinarians to reduce costs, increase efficiency, and improve veterinary-client relationships. The authors present two uses of technology within veterinary practices. The first use is to assist in running the day-to-day operations of the practices. The authors state that Adam Little, DVM has recommended that software be used for manual activities typically associated with running a veterinary practice, resulting in higher levels of efficiency and productivity. The authors note that Karen Felsted, DVM, CVPM, MS, CPA has posited that technology will help reduce the time-consuming tasks placed on pet owners associated with veterinary visits and improve the

conversation with the veterinarian. Felsted states, “The more tech-oriented the practice, the more you value the most efficient use of the pet owner's time, the more you’ll see the perceived value of your services increase” (para. 9).

The second use of technology presented by the authors is the merging of technology with veterinary medicine. Little presents a future where pet sample collections will take place in the home using advanced techniques and apps to support the acquisition and interpretation of data, reducing the cost to the pet owner and time spent by veterinary resources.

The authors assert that the advance of such technologies may be counterintuitive for veterinarians, citing a reduction in office visits, currently a revenue-generating channel. The authors added that acceptance of new technologies can be hard for veterinarians if they do not see a positive impact to the practice in a short timeframe. To address this hurdle, the authors provided three recommendations; veterinarians need to: begin thinking like entrepreneurs relating to new technologies; become early adopters through collaboration with other pet care providers and by partnering with companies developing solutions; and obtain support from other veterinarians facing similar challenges and problems.

This article demonstrates the usefulness of smartphone-enabled technologies in the pet care services market. The improved efficiencies in operating a practice include the buying and selling of pet medications and food, activities which are often manual and can be automated through the use of e-commerce and m-commerce technologies.

Category 3: Successful Small Businesses Adoption and Use of Online Channels

Ajmal, F., Yasin, N.M., & Norman, A.A. (2017). Critical success factors influencing e-commerce adoption in SMEs: A review and mode. *International Journal of Advanced and Applied Sciences*, 4(7): 159-172. <https://doi.org/10.21833/ijaas.2017.07.023>

Abstract. This paper attempts to identify and evaluate the success factors that influence e-commerce adoption in SMEs and develop a conceptual model based on identified factors. A detailed literature search covering the past 26 years has been conducted. This literature search results in finding a total of 32 critical success factors of e-commerce in SMEs that are divided into seven main categories, namely: technical, individual, implementation, environmental, security, privacy, and organization. This paper will list, discuss, analyse, and evaluate these e-commerce success factors and explains how it will allow business to integrate e-commerce in their businesses.

Summary. The authors state that the purpose of this article is to identify critical success factors affecting the adoption of e-commerce by small-to-medium enterprises (SMEs), and to develop a conceptual e-commerce adoption model. The authors reviewed literature related to e-commerce between the years of 1991 and 2017.

The authors posit that SMEs are interested in adopting e-commerce because of the associated benefits of customer relationship improvements, business process improvements, and cost reductions. The authors acknowledge e-commerce adoption among SMEs is low, and suggest that SMEs are waiting to see if the return on investment will exceed the cost of adoption and implementation.

In their e-commerce success factor model (Figure 1), the authors identified 32 sub-factors identified during their literature review and placed them into one of eight independent generalized factors: (a) organizational, (b) management, (c) technological, (d) individual, (e) implementation, (f) privacy, (g) environmental, and (h) security. The authors state organizations need to consider the factors and sub-factors in the model when implementing e-commerce,

explaining that the factors and sub-factors spotlight obstacles and influences associated with e-commerce implementation.

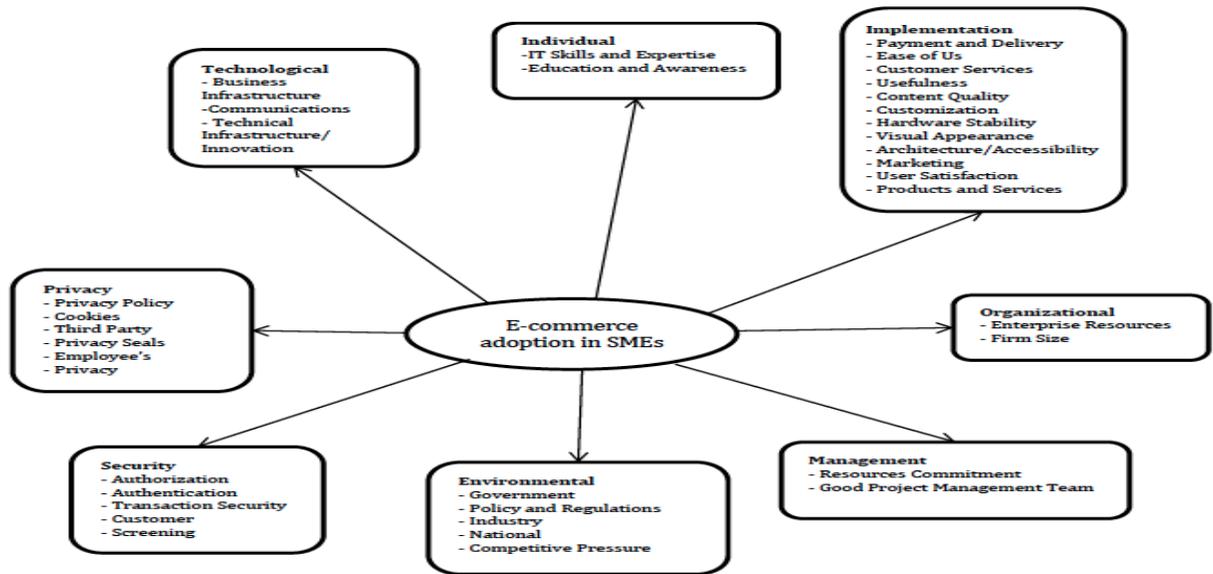


Figure 1. Conceptual framework for e-commerce success (Ajmal, Yasin, & Norman, 2017).

This article is important to the overarching study because the authors provide a model which defines factors and sub-factors for successful e-commerce adoption to be considered by small businesses when deciding to adopt and subsequently implement e-commerce solutions.

Bi, R., Davison, R. M., & Smyrnios, K. X. (2017). E-business and fast growth SMEs. *Small Business Economics*, 48(3), 559–576. <https://doi.org/10.1007/s11187-016-9788-8>.

Abstract. This paper tests a theoretical model to evaluate e-business capability and value in the fast growth small-to-medium enterprise (SME) context. We propose that e-business value depends on how fast growth SMEs deploy IT resources, strategic planning, culture, and business partnerships to develop e-business capability and business process competence which help these companies to achieve outstanding business performance. Structural equation modelling is employed to test our theoretical conceptualization on a cohort of 310 Australian fast growth

SMEs across different industrial sectors. The results show that IT resources, strategic IT alignment, market orientation, and business partnerships do contribute significantly and indirectly to SME performance through the development of e-business capability and business process competence. Our study provides an initial empirical evidence to understand the relationship between IT and entrepreneurial SME performance. These findings have important implications for research and business practices.

Summary. The authors review the process of creating e-business value for small-to-medium enterprises (SMEs). The authors define e-business as the use of Internet-based technologies to perform business activities. The authors posit e-business helps small to medium businesses improve efficiency, conduct information sharing, and improve innovation within the organization, leading to improved sales and operational performance.

The authors presented five findings based on their research: (a) solid IT infrastructure and IT expertise help firms enhance their e-business capabilities, (b) strategic alignment of IT with business objectives is positively linked to e-business capabilities, (c) a positive relationship exists between an organization's ability to capitalize on market opportunities and the capabilities afforded by e-business, (d) external business relationships which include strategic planning and collaboration are associated positively with SME performance, and (e) e-business is positively associated with business process competence.

This article relates to the problem presented in the study because it demonstrates the importance of IT infrastructure, IT competence, strategic partnerships, and market penetration in relation to successful e-business and the overall success of small businesses.

Ghobakhloo, M., Hong, T. S., Sabouri, M. S., & Zulkifli, N. (2012). Strategies for successful information technology adoption in small and medium-sized enterprises. *Information*, 3(4), 36–67. <https://doi.org/10.3390/info3010036>

Abstract. Information Technology (IT) adoption is an important field of study in a number of areas, which include small and medium-sized enterprises (SMEs). Due to the numerous advantages of IT, SMEs are trying to adopt IT applications to support their businesses. IT adoption by SMEs differs from larger organizations because of their specific characteristics, such as resources constraints. Therefore, this research aims to provide a better and clearer understanding of IT adoption within SMEs by reviewing and analyzing current IT literature. In this research, the review of literature includes theories, perspectives, empirical research and case studies related to IT adoption, in particular within SMEs from various databases such as Business Premier, Science Direct, JStor, Emerald Insight and Springer Link. The proposed model of effective IT adoption is believed to provide managers, vendors, consultants and governments with a practical synopsis of the IT adoption process in SMEs, which will in turn assist them to be successful with IT institutionalization within these businesses.

Summary. The authors' stated goal of this article was to explore factors influencing the adoption of information technology (IT) in small-to-medium enterprises (SMEs). The authors identified top management, resources, organizational behavior and characteristics, IT products in the market, external and competitive pressure, and external IT consultants and vendors as factors identified that influence the adoption of IT by SME.

The authors identified factors associated with top management that directly influenced the adoption of IT including:

- Attitude toward IT.
- Perception of IT.
- Support of IT.
- Commitment to IT.
- Knowledge of IT.
- Experience with IT.
- Level of innovation with regard to IT.
- Amount of control over IT.

Resource availability to small businesses also acts as a determinant of the adoption of IT.

The authors note these resources are recognized as financial, technical, managerial, information accessibility, expertise (internal and external), and market penetration. The authors found that abundance or lack of these resources directly impacts the adoption of IT.

Factors contributing to the influence of organizational behavior and characteristics include business size, organizational change and culture, family involvement, relationship to change, and planning. The authors state that these factors are considered significant in regard to the successful adoption of IT.

External pressure from competitors can influence a firm's decision to adopt technology in order to sell new products and services to customers and gain a competitive advantage. The authors point out that capitulating to consumer wants is a driver in the adoption of new technology and serves as a decision which may drive business growth.

The authors suggest the technology products available to SMEs may be an influencing factor on IT adoption. The authors posit that easy-to-use technologies are better suited for small

businesses. Security, compatibility, and cost were also found to be significant factors contributing to the adoption of IT.

External IT consultants are external factors related to the successful implementation of IT by SMEs. The authors state consultants have a positive impact on the adoption process due to their knowledge and expertise. The authors caution that SMEs should consider the financial implications imposed by external consultants, stating consultants are expensive resources and that their solutions may not always be the best solution for an SME.

This article has significance to the study because as small businesses begin to adopt technology, small business leaders need to understand the internal and external influences and factors impacting IT adoption.

Jeansson, J., Nikou, S., Lundqvist, S., Marcusson, L., Sell, A., & Walden, P. (2017). SMEs' online channel expansion: value creating activities. *Electronic Markets*, 27(1), 49–66.
<https://doi.org/10.1007/s12525-016-0234-1>

Abstract. SMEs are faced with new business opportunities through online channels, i.e., electronic commerce and mobile commerce. The model by which they create and capture value is challenged, making the adoption of a business model that fits the organisation a crucial strategic decision. The purpose of this paper is to study value creating activities taken by SMEs when making a transition to an online multichannel context. Sixteen SMEs in Sweden are studied using a qualitative research approach and through the lens of an e-transit business model configuration. The results show that SMEs are required to take various value creating activities denoted as primary and secondary transition activities and that there is a discrepancy between actions taken and their perceived degree of importance. One main conclusion is that the combination of value creating activities an SME should focus on during different stages of an

online channel expansion differ depending on the type of transition (e.g., from physical store to electronic commerce or from electronic commerce to mobile commerce) and will change over time.

Summary. The authors describe how small-to-medium enterprises (SMEs) approach the expansion into new online channels from a business model perspective. Based on the analysis of the interview data collected from 16 SMEs in Sweden, the authors determined that for SMEs, the move from e-commerce to include m-commerce is less intense than the expansion of SMEs from a purely physical channel into an electronic channel. The authors add that the three evaluations most commonly observed across the three transition categories were increasing revenue, building relationships, and maximizing resources. The authors state SMEs allocated resources where needed in order to ensure a smooth transition regardless of the transition type.

The authors identify the existence of three business channels, traditional (physical), electronic, and mobile, and add that it is possible to utilize just one channel, a combination of two of the three, or all three channels. Jeansson, Nikou, Lundqvist, Marcusson, Sell, and Walden state that the expansion into e-commerce and m-commerce will require technology and infrastructure modifications and the ability to create and present a value proposition to customers through these channels. They posit the expansion to digital channels also requires business model changes, with a long-term vision of the firm's place in the market.

This article is important to this study because the authors provide a framework for small businesses to leverage to determine what components are most important to their online channel expansion strategy.

Nguyen, T. H., Newby, M., & Macaulay, M. J. (2015). Information technology adoption in small business: Confirmation of a proposed framework. *Journal of Small Business*

Management, 53(1), 207–227. <https://doi.org/10.1111/jsbm.12058>

Abstract. This paper investigates which drivers affect information technology (IT) adoption and which factors relate to a successful IT implementation in small businesses, where the adoption rate is traditionally low and the failure rate is high. The findings from this study suggest that customers are the main driving force of IT adoption. When it comes to IT implementation, our results suggest that managers/owner–managers must engage with five factors: organization, internal IT resources, external IT consultants, supplier relations, and customer relations. These findings give further insight into IT adoption in small businesses and highlight the importance of customer relations in the adoption process.

Summary. The authors' purpose for this article builds on the idea that there is no single factor contributing to the low rates of information technology (IT) adoption or the high rate of IT failure in small businesses. The authors identify the following factors that influence the successes/failures of IT in small businesses: organization, internal IT resources, external IT consultants, supplier relations, and customer relations.

The authors reviewed the results of survey data from 284 small businesses. The authors conclude small business are likely to adopt IT to (a) improve products and services, (b) meet customer requirements, (c) grow the business, (d) improve quality, and (e) control costs. According to the authors, the top reason for adopting IT was to meet customer requirements, suggesting customers are a driving force in the decision to adopt. The authors add that market competition moves firms to adapt to customer demands. The second most prevalent reason found for adopting IT was the desire for business growth. The authors note a strong relationship between IT, growth, and innovation, commenting that for businesses to grow and innovate, they need to adopt technology.

The authors found that the organization factor, defined as a firm's management, staff, culture, and knowledge, has a direct and positive relationship on the success of IT implementation. The authors note internal IT resources, such as IT capabilities, abilities, and capacities, need to be supported by employees and perceived with a positive attitude by owners and managers to support the success of IT implementations. The authors determine it is the responsibility of both management and employees to help facilitate the adoption of a new technology.

According to the authors, the use of external IT resources such as consultants is commonplace among small businesses due to the lack of expertise within the small business, adding the external IT resource factor has a direct and positive relationship to successful IT adoption. The authors state the impact is because external consultants are not employed by the small business, but often remain in a consulting role after the implementation completes. Creating integration with suppliers, which ensures compatibility of systems and collaboration, also positively impacts IT adoption, according to the authors. The authors posit small businesses are shifting to becoming more customer-centric, affirming success rates in IT implementation increase when customers are considered. The authors conclude by stating owners of small businesses must understand IT's purpose before adoption can take place.

This article is relevant to the study because the research conducted by the authors illustrates factors small businesses must consider when deciding to adopt new technology.

Peltier, J. W., Zhao, Y., & Schibrowsky, J. A. (2012). Technology adoption by small businesses:

An exploratory study of the interrelationships of owner and environmental factors.

International Small Business Journal, 30(4), 406–431.

<https://doi.org/10.1177/0266242610365512>

Abstract. An integrative small business adoption of a technology model, which incorporates consumer and organizational behavior theories, is developed and tested to explore the direct and indirect impacts of owner and environmental factors on information technology adoption. Through structural equations modeling we present and test a conceptual framework that examines the interrelationships between owner-related characteristics and perceptions, and environmental-related constructs to predict the adoption of information technology by small retailers. The results indicate that all the tested variables affect the adoption of technology by small businesses directly and/or indirectly through mediating variables. The study advances the literature by creating a small business technology adoption model (SBTAM) that highlights the importance of examining interrelationships between the independent variables. The results have significant implications pertaining to organizations interested in marketing technological innovations to retailers and for small retailers that use this technology.

Summary. The authors' focus for this article was a study of the adoption of information technology (IT) by small business retail firms. The authors identified factors and created a framework for the study comprised of: (a) characteristics of the owner, (b) view of technology by the owner, and (c) owner's view of environmental turbulence.

The authors shared direct effects and interrelationships that exist in small firms that are deciding to adopt new technology. In their analysis, the authors discovered that product knowledge positively influenced both the adoption of technology and the assessment of the technology's relative advantage. They also uncovered that owners with a positive attitude toward change and risk were more likely to adopt a new technology as a result of increased product knowledge and environmental hostility and are more likely to adopt new technologies within their industry. The authors assert that the age of the small business owner does not present a

major impact to the decision to adopt technology, but that owner age did have a negative influence on product knowledge and subsequently an indirect effect on their view of the costs and relative advantages of technology. The authors found that a small business owner's education had a positive impact on the adoption of technology and product knowledge.

The authors found that relative advantage had a positive influence on the decision to adopt technology and acts a major factor for adoption. The authors determined there was not a negative relationship between the cost of switching to new technologies and the decision to adopt a new technology, but that higher switching costs affected the perception of relative advantage negatively. The authors discovered that market uncertainty had a direct impact on the decision to adopt technology. They deduced that firms that focus on solving consumer-centric problems have a higher likelihood of creating new technology. The authors noted that environmental hostility presented a direct impact on the decision of small business owners to adopt technology as well as a direct impact on relative advantage.

This article is important to the study because the authors show that variables such as small business owner's age and education, the costs of new technology, and market conditions are factors that affect the decision to adopt a new technology.

Turner, S., & Endres, A. (2017). Strategies for enhancing small-business owners' success rates.

International Journal of Applied Management & Technology, 16(1), 34-49.

doi:10.5590/IJAMT.2017.16.1.03

Abstract. Small-business owners represent 99.9% of all U.S. employer firms, employ 48% of the private sector employees, and provide 41.2% of the total U.S. private payroll. However, 50% of new small-business startups fail within the first 5 years of operation. The purpose of this multiple-case study was to explore strategies three small-business coffee shop

owners in Duval County, Florida, used to succeed in business beyond 5 years. Three themes emerged from semistructured interviews and methodological triangulation via websites, social media, and site visits: (a) owner networking and designing the business site as a customer networking venue, (b) business plan effectiveness in identifying and addressing initial challenges and subsequent changes, and (c) achieving marketing differentiation.

Summary. The authors' stated purpose for this article was to understand the skills, knowledge, and strategies small business owners leverage to operate successful small businesses beyond five years. The authors present three themes for success which arose from their research: owner collaboration and use of business as a networking hub, business plans' effectiveness in identifying and addressing initial challenges and subsequent changes, and achieving differentiation through innovative marketing strategies.

The authors discovered systems theory was applicable to the theme of *owner networking and business as a customer-to-customer networking venue*. The authors conclude that networking activities are in line with systems theory because networking involves interrelationships between internal and external customers and the environment, implying a relationship exists between business needs and the activities required to remain operational.

The authors align chaos theory with their second theme of *business plans' effectiveness in identifying and addressing initial challenges and subsequent changes*. The authors illustrated challenges the owners experienced as a lack of resources, constraints imposed by limited space, customer demands, employee turnover, and decisions regarding investing in new technology. The authors add that small businesses that do not utilize technology as part of their business strategy are at a higher risk of failure. The authors state the constant change experienced by the store owners aligned with systems theory, chaos theory, and complexity theory. The authors

concluded by positing that small business owners need to stay involved with business activities and collaborate with other small business owners, know their customers, and be cognizant of the changes in their industry.

The authors assert that the most successful strategy for a small business is to focus on differentiation. Owners in the article faced competition from franchise businesses and the challenge of achieving differentiation in the market. The authors observed each of the three owners incorporating innovative strategies to achieve differentiation from other franchises. According to the authors, one owner used email campaigns and loyalty programs to set the business apart from the competition, while other owners changed signage and offered a delivery option. All three owners engaged in social media channels as part of their strategies. The authors posit that complexity theory was associated with market differentiation because different factors were observed to be contributing to the success of the small businesses.

This article is important to the study because it presents characteristics of small businesses and their owners that lead to long-term sustainability through innovation using online technologies to drive business growth, customer focus, and willingness to adapt to competitive markets.

Wu, M., Gide, E., Jewell, R., & Zhang, L. (2017). CSFs for SMEs in Measuring e-Commerce Success. In D. Perakovic (Ed.), *E-Business - State of the Art of ICT Based Challenges and Solutions*. InTech. <https://doi.org/10.5772/66564>

Abstract. For the last 20 years, while many electronic business (e-business)/electronic commerce (e-commerce) systems have been successfully adopted in businesses across different industries, a significant number have failed, especially in small to medium enterprises (SMEs). It is therefore necessary to explore critical success factors (CSFs) for SMEs in adopting e-

commerce success. A blend of quantitative and qualitative research methods were used, consisting of literature review, focus group studies, pilot tests, and surveys. Total survey was of 11.54% (277 out of 2401). Data analysis procedures were adopted, which comprised initial reliability analysis, validity analysis, t-testing, factor analysis, and detailed reliability analysis. As a result, a total of 15 items were identified as common CSFs for SMEs successfully adopting e-commerce system, which could be adopted as an effective tool for assisting SMEs in effectively adopting e-commerce systems, and as a yardstick further to develop new methods for measuring e-commerce success.

Summary. The authors of this article present critical success factors (CSFs) for the adopting e-commerce by small-to-medium enterprises (SMEs). The authors outline reasons for measuring the successful adoption of e-commerce and describe the difficulties associated with measurement activities. The reasons for measuring the success of e-commerce in SMEs are to (a) avoid failure; (b) gain knowledge from successful adoption of e-commerce by other companies; (c) develop tools and best practices; (d) capture adoption guideline requirements; and (e) make future improvements and developments to e-commerce systems.

The authors state that the lack of buy-in from management contributes to the failure of e-commerce adoption and add that organizations that lack an e-commerce framework should start with basics of implementing e-commerce. The authors posit e-commerce systems are different than traditional systems found in organizations, arguing that e-commerce systems are more challenging to implement.

The authors suggest a challenge with e-commerce is the need for more than just technical expertise. They argue that a successful e-commerce program is about strategy, not technology. They acknowledge successful e-commerce solutions require more than just a website, and further

state that the scope of e-commerce solutions is broader than managing technology and quality; successful solutions require leaders to sync strategies, business processes, brands and technologies. According to the authors, e-commerce success is difficult to measure due to a lack of historical data and experience developing and implementing metrics to evaluate its success.

The authors conclude by stating an understanding of CSFs does not guarantee e-commerce success, but improves the success rate, adding that a better understanding of the CSFs related to e-commerce is key to measuring the success of e-commerce.

The authors' approach for successful e-commerce adoption includes: (a) providing guidelines for planning their e-commerce implementations, (b) providing SMEs with existing e-commerce system tools to measure effectiveness and efficiency of the implementations, and (c) adopting e-commerce strategies for continuous improvement. The authors add that e-commerce service providers (ESPs) must better understand the CSFs, business processes, and expectations of SMEs during the adoption phase.

This article is relevant to the study because small businesses lacking technological expertise are at risk for failure when implementing e-commerce. Additionally, the article provides guidance for understanding the challenges faced by SMEs adopting e-commerce solutions and demonstrates the importance of being able to measure the success of e-commerce.

Conclusion

Small businesses in today's economy that are not utilizing technology as part of their business strategy are at a higher risk of failure than those that have embraced technology (Turner & Endres, 2017). Pet care service providers, a small business according to the U.S. Census Bureau (2017), do not as a group fully leverage smart device technologies (Howard, 2017). A study of pet owners showed that many want the abilities to use their smartphones for everything from accessing pet health records to ordering medication for their pets (Howard, 2017). The demand from pet owners for online channels to access pet care and procure pet supplies indicates pet care providers have an opportunity to adopt new online technologies such as electronic commerce (e-commerce) and mobile commerce (m-commerce) (Howard, 2017). Due to various factors associated with technology adoption, small businesses face challenges in successful implementation (Nguyen, Newby, & Macaulay, 2015).

The 15 selected pieces of literature found in the Annotated Bibliography were chosen to showcase the opportunity for pet care providers to adopt new technologies and take advantage of the rapid growth in pet ownership and in the pet industry in general. The literature selected focuses on: (a) online strategies for pet care services, (b) benefits of online channels, and (c) factors attributing to successful small business adoption and use of online channels.

Benefits of online channels

Cloud-based veterinary and pet health management systems like the system proposed by Chen et al. (2016) provide examples of the advantages of utilizing online technologies to provide care for pets. Chen et al. (2016) proposed a centralized veterinary system which would provide veterinarians and pet owners with the ability to communicate with veterinarians, retrieve pet health records from any location, and allow veterinarians to market to new and existing clients.

Mobile channels offer businesses the ability to create a personalized shopping experience for consumers, allowing them to shop easily and conveniently from anywhere at any time provided there is a connection to the Internet (Kim, Li, & Kim, 2015). Kim, Li, and Kim (2015) assert that mobile channels provide utilitarian and hedonic values to the consumer, defined as “purchasing products in an efficient and timely manner” (p. 975) and “emotional benefits, such as enjoyment experienced through shopping in addition to the purchase of products” (p. 975), respectively.

According to a study conducted by Dr. Lori Kogan, pet owners would like to use their smartphones for a variety of activities related to pet care (Howard, 2017). Fifty-five percent want the ability to access their pet’s health records, 50% would like to be able to schedule veterinary visits, 40% would like to be able to purchase pet medications, and 34% want to be able to order pet supplies such as food (Howard, 2017). The growth in smartphones and innovations relying on smartphone technologies has opened new opportunities for veterinarians to adopt an online strategy (Howard, 2017).

The demand from pet owners for pet care providers to provide mobile alternatives suggests smartphone apps provide a useful channel for pet owners to connect with veterinarians (Howard, 2017). Veterinarians are able to provide a higher quality of care, reduce costs associated with pet care, and spend more time focusing on building relationships with pet owners, relationships which can lead to improved pet health outcomes (Vogelsang & Wagner, 2016).

Online strategies for pet care services

Adam Little, DVM, Director of Veterinary Innovation and Entrepreneurship at Texas A & M University, suggests pet care providers begin thinking like entrepreneurs related to new

technologies (Vogelsang & Wagner, 2016). Little's recommendations are to become early adopters through collaboration with other pet care providers, partner with companies developing solutions, and obtain support from other veterinarians facing similar challenges and problems (Vogelsang & Wagner, 2016). Little further encourages pet care providers to investigate the benefits of technologies like electronic and mobile channels (Vogelsang & Wagner, 2016). Looking into future uses of technology, Little envisions the collection of pet samples in the home using advanced techniques and apps to support the acquisition and interpretation of data, reducing the cost to the pet owner and time spent by veterinary resources (Vogelsang & Wagner, 2016).

For businesses considering the adoption of online channels, Bang, Lee, Han, Hwang and Ahn (2013) suggest consideration be given to product-channel fit. With the capability to access and search for products and services anytime from anywhere using a mobile channel, Bang, Lee, Han, Hwang and Ahn (2013) suggest products and services have dimensions of time sensitivity and levels of information intensity that, when considered with the access and search capabilities of either the mobile or online channel, impact the product-channel fit. The product-channel matrix devised by Bang, Lee, Han, Hwang and Ahn (2013) demonstrates that some products and services offer greater value when accessed through mobile channels than electronic channels. When a product or service has high time sensitivity and high information levels, transaction levels on both mobile and electronic channels are synergized, resulting in a boost to online channel and total revenues (Bang, Lee, Han, Hwang & Ahn, 2013). Conversely, Bang, Lee, Han, Hwang and Ahn (2013) posit that for products and services with low time sensitivity and low levels of information intensity, consumers use both online channels.

The mobile channel outperforms the traditional electronic channel when the product or service the consumer is seeking is highly time sensitive and requires minimal levels of information, whereas when there is minimal time sensitivity and a higher level of information intensity, the mobile channel provides only a moderate impact on the electronic channel (Bang, Lee, Han, Hwang & Ahn, 2013). Bang, Lee, Han, Hwang and Ahn (2013) indicate mobile channels are well-suited for high time sensitivity products and services when the information needed to make a purchase is minimal, suggesting businesses receive a greater value from online channels when the online channel fits the product or service being bought or sold.

Kim, Li, and Kim (2015) recommend that businesses offering a mobile commerce channel consider consumer behavior in relation to personalization and simplification of the shopping experience and the enjoyment received by the consumer during the purchasing of a product or service. Personalization occurs when the m-commerce provider creates a consumer-centric experience that is both easy to use for the consumer, but also creates an enjoyable shopping and purchasing experience; for example, the consumer completes the transactions with ease and feels positive about his or her purchase (Kim, Li, & Kim, 2015).

With the rising demand from pet care owners for more access to pet care providers through smartphones (Howard, 2017), small businesses like pet care providers can take advantage of m-commerce technologies to drive business growth (Reinhart & Naatus, 2017). It should be noted however, that mobile commerce is not a substitute for traditional e-commerce channels, but rather, m-commerce serves as a complement to e-commerce; the two channels are complements because m-commerce inherits and expands the capabilities of existing e-commerce technology (Bang, Lee, Hwang & Ahn, 2013). Chou, Chuang, and Shao (2016) identify the

primary difference as the method used to access the channel, either via a smartphone or personal computer.

While smartphones and the innovations afforded to veterinarians and pet owners alike reduce pet ownership burdens and improve quality of care, Vogelsang and Wagner (2016) found that veterinarians who are contemplating new technologies generally expect a positive impact on their businesses in the near term but lack the patience required for these new technologies to mature, resulting in hesitancy to fully adopt new technology.

Successful Small Business Adoption and Use of Online Channels

There is no single factor contributing to the low rates of IT adoption or the high rate of IT failure in small businesses (Nguyen, Newby, & Macaulay, 2015), although it is worth noting that moving from an existing e-commerce presence to also include a m-commerce presence requires less effort by the small business (Jeansson et al., 2017). However, for small businesses with only a physical channel, the move to an electronic channel and subsequently a mobile channel is more intense (Jeansson et al., 2017). In order to successfully transition from a physical channel to electronic and mobile channels, influencing factors like leadership, internal and external resources, and technology should be considered (Ajmal, Yasin, & Norman, 2017; Ghobakhloo, Hong, Sabouri, & Zulkifli, 2012; Nguyen, Newby, & Macaulay, 2015; Peltier, Zhao, & Schibrowsky, 2012; Turner & Endres, 2017).

Leadership. Ghobakhloo, Hong, Sabouri, and Zulkifli (2012) point to factors related to a small business's leadership that directly influence the adoption of IT, which include:

- attitude toward IT,
- perception of IT,
- support of IT,

- commitment to IT,
- knowledge of IT,
- experience with IT,
- level of innovation with regard to IT, and
- amount of control over IT.

Multiple experts agree that leadership has a direct impact on the successful adoption of new technologies (Ajmal, Yasin, & Norman, 2017; Nguyen, Newby, & Macaulay, 2015; Peltier, Zhao, & Schibrowsky, 2012; Turner & Endres, 2017; Wu, Gide, Jewell, & Zhang, 2017). Wu, Gide, Jewell, and Zhang (2017) argue that a lack of buy-in from management will impact the adoption of online channels negatively, asserting that management should be involved in the adoption and implementation of online channels. Peltier, Zhao, and Schibrowsky (2012) point out characteristics of leadership such as education and product knowledge as factors which positively influence the adoption of technology, suggesting well-informed managers are more willing to engage in adopting new technologies. Peltier, Zhao, and Schibrowsky (2012) found that the age of a leader does not impact the decision to adopt technology, but can have a negative impact on product knowledge, leading to an indirect impact on a leader's view of the cost and relative advantage of technology.

Internal and External Resources. Internal IT resources like IT capabilities, abilities, and capacities; and external consultants' technical expertise, both have a direct and positive impact on successful adoption and implementation of new technology (Nguyen, Newby, & Macaulay, 2015). Nguyen, Newby, and Macaulay (2015) note that internal staff need to be supported by colleagues and perceive support from management in order to successfully implement new technologies. The use of external consultants is common in small businesses and

helps to bridge the gap in IT expertise (Nguyen, Newby, & Macaulay, 2015), but Ghobakhloo, Hong, Sabouri, and Zulkifli (2012) caution that consultant services are expensive and their solutions may not align with the business strategy regarding the adoption of new technology.

Technology. Ghobakhloo, Hong, Sabouri, and Zulkifli (2012) posit that choosing the right technology may influence the success of the electronic and mobile channel adoption process. When deciding to adopt new technologies, small businesses should consider easy-to-use technologies, as these options are often better suited for small businesses (Ghobakhloo, Hong, Sabouri, & Zulkifli, 2012). The relative advantage of a technology to solve consumer-centric problems positively impacts the adoption of new technology by a small business (Peltier, Zhao, & Schibrowsky, 2012).

Summary

Online channel technology adoption among small businesses is low (Ajmal, Yasin, & Norman, 2017). In order to reduce the risk of failure, small businesses need to adopt technologies such as online channels (Turner & Endres, 2017). More than ever, pet owners want the ability to interact with their pet care provider using available technologies, specifically online channels using their smartphones (Howard, 2017). Online channel technologies help small businesses improve efficiency, share information, and improve innovation within the organization, leading to improved sales and customer growth (Bi, Davison, & Smyrnios, 2017; Reinhart & Naatus, 2017).

There are many factors and determinants small business leaders should consider when deciding to adopt online channel technologies (Ajmal, Yasin, & Norman, 2017; Ghobakhloo, Hong, Sabouri, & Zulkifli, 2012; Nguyen, Newby, & Macaulay, 2015; Peltier, Zhao, & Schibrowsky, 2012; Wu, Gide, Jewell, & Zhang, 2017). While Wu, Gide, Jewell, and Zhang

(2017) state that an understanding of success factors does not guarantee desired results, it does improve the success rate. A better understanding of the success factors related to online channels is key for small businesses to successfully adopt and expand to new online channel technologies (Wu, Gide, Jewell, & Zhang, 2017).

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