Exploring the Potential of Modernization through Technology in Retail

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On my honor as a University Student, I have neither given nor received
unauthorized aid on this assignment as defined by the Honor Guidelines
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Department of Engineering and Society

Introduction

  The motivation behind my research is to further explore the role of tech and how effective it is in modernizing business models that traditionally do not rely on any sort of technology. For example, in the arts industry, word of mouth and social interaction is how artists primarily sold their creations traditionally. In contemporary society, tech is being utilized in unique, unprecedented ways in such industries to increase efficiency and reach much larger audiences. Especially during COVID-19, we can see how tech has quickly allowed businesses to adapt and become safer and more efficient in a variety of ways.

  The topic under which I will conduct my research involves a startup idea that I have been working on this summer. Curate is a company that offers software as a service that allows individual creators and artisans to connect with local small retailers. This enables them to sell their unique goods in physical stores, with the vision of bringing back the local, diversified shopping experience. Allowing tech to become part of this originally face-to-face business model should in theory increase sales for the creators and business alike. But how efficient would this really be? Can a business such as Curate be positioned as a bridge between e-commerce and in-person shopping in this artisanal retail space? What are the potential impacts that tech modernization can have on such a hybrid business model over time? This area of discussion is what I hope to explore in my STS investigation.

Research Question

  My primary research question will be: What are the potential impacts of adopting digital technology in increasing customer traction for both businesses and creators that traditionally operate in a non-technical environment? This will involve exploring themes of what exactly

defines modernizing a business model, specifically under the context of Curate. I will also be investigating how tech affects customer reach for creators, as well as how easy it is for people to adopt. Another theme to explore is whether the enacted changes will develop into a more sustainable model for the business. A "sustainable model" can be potentially defined through factors such as customer traction and efficacy in inventory sourcing. Specifically, under the category of artisanal retail, trust is something that has been developed over many years between physical shops and repeat customers. Another theme I will be exploring is how tech modernization might impact this level of trust between retailers and consumers. Curate as a business would add to this, not just by providing tech functionality, but increase the reach of this customer-trust relationship through modernization.

Literature Review

To begin my literature review, I will begin by analyzing what has been known to be defined as "consumer behavior". Scholars have already presented several definitions that help an overarching idea of the notion, among them Echchakoui (2016), who stated that consumer's behavior is defined as the behavior that the consumer highlights in the search for buying or using goods, services and ideas, which he expects should satisfy desires or needs according to the consumer's available purchasing capabilities. Moon (2015) also saw that customer behavior comprises of direct and indirect actions and behaviors that are performed in order to obtain a good or service at a specific place & time. Yet another source in my literature review was Singh and Singh (2015), who defined customer behavior as the set of mental and muscular activities related to the evaluation and differentiation process, and the obtaining of goods, services, ideas, and how to use them effectively. All of these definitions of "consumer behavior" have helped me to identify what exactly to explore with my research. I intend on exploring what direct and

indirect actions (as Moon describes) shoppers take when entering the retail space, and where technology could have potential positive impacts. My research data will quantify certain behaviors that shoppers have in the artisanal retail space.

My research for this topic has led to an understanding that COVID-19 has caused significant changes to existing themes that play a role in tech modernization. The pandemic and its resultant inhibitions that were placed on people's freedom and social interaction, as well as workplaces and shopping centers closing down, has resulted in a consumer psychology shift. Mathras (2015) emphasized that there is a clear change on the shopping habits of individuals, which in recent years has become more transparent due to the spread of smart and Internet-based mobile devices, alongside with the spur in e-commerce and electronic payments becoming the norm for shoppers. Relating to my research question, in a traditional business model the norm was to shop in a store and pay in cash. In contemporary society, shopping online and relying on electronic payment forms has become a distinctive theme of this era for consumer behavior around the world. However, moving online could bring additional risks to a business in the artisanal research space, which I hope to explore further as well. One of the important drivers that contributed to the growth of the Internet payments is electronic commerce, an opportunity for consumers to obtain their needs without the need to move from home, and enables them to request services and goods through various forms of electronic payment (Dakduk, 2017). The trend towards e-payments becoming the standard in contemporary society is progress in the realms of development and openness. It enables small businesses and consumers across countries to avoid cash payment, as there is no need for dealing with physical bills as long as there is an accepted form of electronic payment (Tankovic and Benazic, 2018). Specifically relating to COVID-19, the World Health Organization has emphasized that the virus has ability to transmit

across paper currencies which created a large movement among individuals to fully embrace e-shopping and electronic forms of payment in their day-to-day life without risking exposure to the virus (Lin, 2018). Tech modernization would be a key tool allowing small businesses that are previously undisposed in this arena to take advantage of all that electronic payments have to offer, especially amidst COVID-19. In my research, I explore what specific metrics may be affected because of COVID-19.

For my research methods, I intend to survey a) shoppers and b) creators (people who make handmade artisanal goods) in scenarios relevant to my primary question addressing tech modernization from a previously non-tech model. Some potential interviewees might be family and friends who all act as consumers from time to time, or local artists and creators within the Charlottesville area. I am currently considering google forms or in person questionnaires as my primary method of surveying. Regarding document analysis, I hope to explore advertisements or marketing used by existing small businesses or creators in the artisanal goods space.

STS Framework and Method

The next step during my exploration of the effectiveness of tech modernization for businesses from a traditional background was to adopt Latour's Actor Network Theory (ANT) framework. Within the umbrella of my research question, there is a definite actor network present that can be further broken down. In Latour's ANT framework, there exist both human and non-human counterparts that interact to work towards the same outcome. A "heterogenous" relationship is formed between these two parts of the system, otherwise known as actors & actants. For my research, the actors under my ANT framework are the humans present within the small businesses that operate traditionally, and the actants is the technology used for modernization efforts, specifically in the form of mobile/web software applications.

The ANT framework provides me with an effective theoretical angle for me to examine Curate's design and business strategy. From the ANT perspective, the Curate system becomes a human to non-human heterogenous networking process. The success of the business depends on whether more humans and non-humans can be incorporated into the network seamlessly. The humans involved in all aspects of the small business have several manual tasks that require physical labor. The addition of a mobile/web application (actant) would make the humans (actor) job significantly easier, and reduce the amount of effort and labor required for the same outcome. Furthermore, tech modernization through software applications opens up a whole new variety of avenues that can be explored for the business, that were previously not possible due to technological constraints. For example, expanding to a new locality, reaching a bigger audience, marketing your products further are all made possible through such software applications. These applications themselves will also benefit through iteration, and improve over time to better suit the needs of the specific business. It will be a back-and-forth N-NH relationship that is built upon over time, while constantly working towards an efficient middle ground of tech modernization.

There are both successful and unsuccessful translations present in this relationship forming the actant network. The translations that are successful would involve reduced work for the actor, an iterative process for the actant, and increased efficiency in use of the software by the customer. Modernization, as an integral element of digital transformation, is first and foremost about improving the customer or employee experience, improving productivity and delivering competitive value. So, addressing a customer-centric approach to this heterogenous relationship is what would deliver the best results, and result in a successful translation between humans and software. An example of an unsuccessful translation would be if the software

resulted in a lack of growth or efficiency for the business, which means the actor & actant relationship was not mutually beneficial. If the workers at the small business were not significantly alleviated, or if they ended up having to do more just for the sake of the customer through the software, this would be an example of an unsuccessful ANT framework. An example of one such successful transition might include recruiting actants such as internet devices in rural areas, and actors such as local store owners who are comfortable managing new communicative devices such as there. This relates back to the theme of trust I explored earlier, except this time is present between the human and non-human parts in this system. If the trust is maintained, so is the robustness of the network, which is what will distinguish a successful transition under the ANT framework.

I plan on collecting the data required for this research project over the course of a month and a half. In the first few weeks, I will conduct surveys and interviews for both shoppers & creators, both in person and through online surveying platforms. I plan on conducting surveys for 250+ shoppers, 50+ artisanal creators, and 5+ businesses. Shoppers are any individual that acquires products by spending money in the retail space in general. Creators are people that design and make their own artisanal products, and try to find various avenues to sell them through, whether it is online or in-store. In the second half of my data collection period, I plan on conducting a detailed analysis of the survey results, and keeping a record of key insights or revelations that I may gain. An example milestone that I will include is the number of people that I end up surveying.

Data Analysis

Data will be collected through surveys and interviews as outlined in the data collection chart below.

Data Source	Stakeholders	Qualitative Data	Themes/Notes	Research Question
Survey	Creators Shoppers Businesses	Google Form Surveys	Shopping Trends, Creator Trends	• What aspects of artisanal retail have the most influence on customer traction? • What are shopper trends in the artisanal goods space? • Where could digital technology have an impact for small businesses?

Through my data collection process, I have gained a variety of insights pertaining to my initial research questions for each data source, as well as other related themes that could prove useful under my overall research purpose. From the surveys sent out to creators, some insights that I gained were that:

Regarding shopper behavior, there is a variety of quantifiable metrics that I was able to obtain from the surveys. Around 25% of shoppers shop for home goods, apparel, and works of arts around once a month. This means that the market size for home goods in the artisanal retail space is about a fourth of all shopping conducted. If utilized correctly by small businesses, the addition of digital technology (actant) to increase efficacy for small business (actor) could prove very useful under the ANT framework. For example, examples of successful translations with digital technology might include monthly discounts and partnering with additional companies/creators in the retail space to take advantage of such shopper behavior. Furthermore,

37.3% of shoppers make impulsive purchases once a month, and 13.3% of shoppers make purchases once a week. This is yet another opportunity for additional digital actants to have an impact directing some of these categories of shoppers to frequent an specific actor under the context of this ANT analysis. Another example of a successful translation with the actor and actant in this scenario would be increased customer traction, or "trust" as I highlighted in my initial research questions. Some more insights that I gained were that 40% of shoppers prefer shopping in local boutique stores over large malls, 38% prefer new/less established brands, 73% are more likely to purchase an item you can't find anywhere else, and 20% of shoppers have no preference between established/new brands. This further certifies the artisanal retail space (that Curate would operate in) as a valid market to explore tech modernization. One potential impact an actant could have here is conducting inventory sourcing in a way that makes local boutique stores have unique items that cannot be found anywhere else, which would in turn increase customer traction as demonstrated by shopper behavior as a whole. Another insight was that 56.3% of shoppers would not pay more than $25 for a handcrafted item. This highlights how pricing is yet another field for digital technology to have an impact

I learned that there are a huge number of creators that sell their work online in the artisanal retail space, but are dissatisfied with the amount of competition present as well as the huge cuts that sites like Etsy take from their profits. One way that modernization could potentially help them with this issue is by advertising items directly to consumers. Technological modernization could allow items to be chosen for stores based on their relatability to the store, not only their price which is mostly how it is right now, which causes them to have to significantly lower their prices. Furthermore, creators would also like to have other avenues to sell their work. Creators often have a hard time marketing their items themselves because

existing algorithms such as Instagram's makes it difficult for their products to be seen by large audiences and they would have to pay a lot of money out of pocket to advertise their work/products.

On the shopper side of things, that 40% of surveyed shoppers (target market for capstone project) prefer local boutique stores, as well as new/less established brands. They are also people who make impulsive purchases more than once a month. Within the non-target market portion of shoppers, however, 73% are more likely to purchase an item you can't find anywhere else. Among this latter umbrella, 33.3% of shoppers purchase art/handmade items a few times a year, while 50% purchase once a year.

On the artisanal retail side of things, some data analysis was able to be obtained as well. I have learned that it is often tough for businesses to find people that sell what they are looking for, especially through wholesalers, due to it being a very lengthy process. This is also a unique opportunity for tech modernization to come into play. A service that directly connects retailers to artisanal creators would be able to solve this supply chain issue. Another relevant trend acquired during research on the retail side of artisanal goods is that small businesses are currently facing significantly reduced growth due to the spread of the coronavirus which is causing shoppers to shop online, which tends to be from bigger retailers.

Conclusion

Tech modernization is a topic that is present across a variety of industries in different capacities. It has led to some of the most significant advances in infrastructure, workplaces, homes; the list goes on and on. Throughout my research process for STS, I was exploring the effectiveness of adopting modern technology in increasing customer traction for both businesses

and creators that traditionally operate in a non-technical environment. As part of this process, I explored themes of what exactly defines modernizing a business model. I also investigated how tech affects customer reach for creators, how easy it is for people to adopt, and whether or not it increases total sales for businesses. The primary takeaway from my research is that the potential for tech modernization has barely been tapped, and there is a lot of areas within the artisanal retail space where business and creators could benefit from it. That being said, there are potential drawbacks from a competition and supply chain standpoint, due to dependencies on several different involved parties over a longer term of time. Overall, modernization for small local retailers in sourcing from individual creators nearby is an area that has lots of potential, as verified through my data analysis, and should be capitalized on.

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