Design of a Software Platform for Modernizing Product Discovery in Artisanal Retail

(Technical Paper)

Exploring the Efficacy of Modernization through Technology in Retail

(STS Paper)

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On my honor as a University Student, I have neither given nor received

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Introduction

The technical topic encompasses designing and layout of a development plan for a software platform that facilitates product discovery in the retail space. Our platform, Curate, will connect creators of handmade, artisanal goods with local small retailers to sell their unique goods in physical stores. Such creators will gain a brand-new avenue to sell their work, gain recognition, and minimize competition. On the flip side, smaller retailers receive personalized curated collections to increase customer traction for their stores. This relates closely to my STS prospectus, which will be exploring how effective tech modernization can be for business models that traditionally operate in a non-technical fashion. In the prospectus I will also be exploring the relationship between local, retailers and their existing customer base, and how this might transform through various forms of tech modernization. Both the technical project and prospectus involve exploring an area of society that has been heavily impacted by COVID-19, which I will be delving into as well.

Technical Topic (Summary)

The COVID-19 pandemic has been detrimental for small businesses, especially those who already struggle with maintaining a competitive advantage, and retaining customers in the retail industry. This proposal involves the design and development of a software-as-a-service tool that facilitates product discovery between creators and artisans, and small retailers, with the vision of bringing back the local, diversified shopping experience. Retail has gone through major changes in the past two decades, with a drastic shift from brick and mortar shopping to the online marketplace. Although many believe this transition is unidirectional, studies have shown that the physical and virtual marketplace are co-dependent. In the current retail landscape, physical stores have to operate in conjunction with an online platform to be scalable while providing the convenience and personalization of online shopping. The increasing use of the digital marketplace has created economic difficulties for creators and small retailers that do not have the resources or capital to compete with large corporations.

Certain companies have attempted to bridge this widening gap using online wholesale markets, digital artisanal platforms, and small-scale online shop builders. Although these sites incorporate many financial, design, and advertising tools, they primarily benefit consumers at the cost of artisans, creating unequal opportunity and high fees within the artisanal community. Platforms such as Etsy and Amazon Marketplace use a business to consumer model that creates an external marketplace, putting artisans at a disadvantage with high competition to reach successful sales. Similarly, online shop builders, such as Shopify, cater to a very targeted type of creator -- established artisans-- limiting new and or unestablished creators from creating an online presence. They also only provide services to establish and maintain an online shop, but do not offer affordable self-promotion tools. In parallel, brick and mortar stores are struggling to attract and retain customers and source unique inventory.

With fast fashion and mass production in retail, small businesses cannot match the time and costs needed to maintain and source inventory, while staying profitable. They also do not have unique factors to differentiate themselves, given how society has shifted to brand-oriented shopping. With both small businesses and artisans facing issues, there is no direct platform to facilitate product display and discovery, through all levels of retail.

The solution offers a service that caters to both the artisans, at varying levels of establishment, and small retail businesses. In both the physical and virtual marketplace, the service generates personalized curated collections of artisanal products for established retail businesses. Artisans will have the opportunity to submit their products to the tool, which will use algorithmic technology to curate products from various artisans into collections for retailers. Acting as the middleman for product sourcing, the tool removes the high competition created by external marketplaces with higher conversion rates at lower costs. For retailers, this tool eliminates time and costs of manual inventory sourcing, and helps small businesses collect better inventory to stay up to date with market trends. Through this proposed tool, artisans will acquire new avenues to sell their work, gain recognition, and minimize external competition, while small retailers receive personalized collections to increase customer traction for their stores and decrease inventory management costs. Locally curated inventories will also allow the service to create exclusivity and give retailers a competitive advantage in their local markets. Using a simple approach to connect these two groups, with a mixture of physical and virtual aspects, the tool ultimately benefits society by shifting away from mass production in retail and by offering improved shopping experiences and sustainable goods.

To define a proof of concept, we plan on simulating the tool workflow on a smaller scale by connecting one small business to about five creators. Despite the small sample group, this experiment would be an accurate representation of how a business would use and

benefit from our technology. This would allow us to iteratively scale in the future with more businesses and creators and widen our regional reach. We intend on conducting a multitude of survey to obtain responses from the targeted audiences, researched market sizing and modeled data to understand the user stories involved. We will also generate technical designs, to model the tool's capabilities in offering a unique way of connecting the average artisan, retail business, and shopper. Initial surveying has shown insights into both the creator and shopper market. For shoppers, out of 350 surveyed shoppers, 40% preferred shopping in local boutiques over large malls, and 73% are more likely to purchase a unique item. For creators, out of the 150 surveyed, 85% showed interest in partnerships with retailers.

STS Prospectus

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? Curate will be positioned as a bridge between e-commerce and in-person shopping in this artisanal retail space. Tech modernization can either help or hurt this 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: How effective would adopting modern technology be 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, how easy it is for

people to adopt, and whether or not it increases total sales for businesses. Another theme to explore is whether the enacted changes will develop into a more sustainable model for the business. Specifically, under the category of artisanal retail, trust is something that has been developed over many years between physical shops and repeat customers. 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. Given the current situation, I will also be examining how COVID-19 may or may not have affected the previous themes.

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.

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. 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.

For my research methods going forward, 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.

Timeline/Methodology

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. 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.

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. Given the current times, I also examined how COVID-19 may or may not have affected the previous themes. I hope to continue these avenues of research to determine the effectiveness of tech modernization in business models from a non-technical background, as well as the viability of our technical topic idea.

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