

Ecommerce's Effects on Consumer Behavior and Marketing

(Technical Paper)

**Identyti**

(STS Paper)

**A Thesis Prospectus Submitted to the**

Faculty of the School of Engineering and Applied Science  
University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements of the Degree  
Bachelor of Science, School of Engineering

Gio Lee  
Fall, 2019

Technical Project Team Members

Chris Han  
Sam Kostelni  
Amanda Murray  
Sri Jayakumar  
Eric Burbach

On my honor as a University Student, I have neither given nor received  
unauthorized aid on this assignment as defined by the Honor Guidelines  
for Thesis-Related Assignments

## Introduction

Ecommerce has steadily risen over the past 20 years in size and reach. Roughly 270 million Americans are projected to make an online purchase this year, spending a total of \$548 billion which is almost 20 percent of overall consumer spending (Richter, 2019). The rise of ecommerce has introduced the application of big data to analyze large-scale trends in retail and user data to form more specialized advertisements. These new technical tools in marketing has begged the question how effective they actually are in comparison to traditional advertising, such as in TV and billboards. The lack of information about the interests of the particular passerby, except his or her aggregate demographic or traffic estimates affords little information to marketers (Aris et al., 2018). Thus, the interactions between ecommerce sites and other platforms that contain user data become important in exploring the effectiveness of modern-day online marketing. The exchange in user data include the sharing of browsing histories, search histories, and information from social media platforms. The rise of ecommerce has also undoubtedly changed the way consumers shop. Making purchases has become more of a social act, meaning that social media relationships have a significant effect on consumer behavior. With the social aspect of purchasing in mind, e-commerce businesses have incorporated social tools (e. g. forums, chat rooms, recommendation systems, communities, social networks) to help users to contact other consumers and facilitate their purchase decisions (Molinillo et. al., 2018). Researching these tools would help open what motivates people to buy the things they do, and how differently people are shopping as opposed to shopping in brick and mortar stores. Technological determinism will be demonstrated in how users are shaping ecommerce platforms and how ecommerce platforms are influencing consumer. The capstone project on the other hand

will be a web service that help explore how online platforms facilitate user data and how the stored user data can potentially interact with ecommerce platforms.

### **Technical Topic**

Identityti is a document storage service for documents that otherwise typically only exist as a hardcopy. All members in my capstone will serve as full stack developers in creating this service. Our client, a Darden graduate student, shared several user stories that illustrates the problem that the service is solving. The user stories highlight how users tend to lose physical documents, spend more time shuffling through physical documents, organizing physical documents, and cause more hassle when attempting to authenticate physical documents.

Since documents uploaded to this platform is typically highly sensitive, data security will be a critical challenge to tackle. Login authentication would be performed by Auth0 which already provides an array of mitigating web-app security breaches such as anomaly detection and force email verification (Poza 2018). Additionally, in order to allow clients to access their data from anywhere, the documents they upload will be stored in the cloud, specifically in an AWS S3 bucket. When uploading the documents, the application will save certain metadata associated with the document allowing the client to easily search, sort, and categorize the document, making it convenient and faster to find it later. The International Data Corporation (IDC), who is a provider of market intelligence, conducted a study on their workers to gauge how much time they spend weekly looking for physical documents. In a group of 1,200 workers, IDC found that “they spend an average of 4.5 hours a week looking for documents” (Biddle, 2017). Since Identityti, is targeted at both consumers and enterprise clients alike, searching for these documents

on Identityti, whether the client is an individual or a business, will be much faster than searching for physical documents.

One concern for storing sensitive data in the cloud is that these services can be compromised. However, in order to mitigate this issue, the plan is to encrypt the data stored in S3, so that even if the bucket is compromised, only encrypted data can be recovered. By storing these encrypted files in the cloud, Identityti offers a secure and fast solution for clients, allowing them to easily share their documents with enterprises.

Identityti also provides benefits for enterprise clients. A major problem that large enterprises face is the sheer size of information they have to process and handle. Using Identityti, enterprises have the ability to create an account in order to manage all of their employees' data. For example, when onboarding a new employee, an enterprise client could request the necessary documents, such as identification and tax reports, from the new employee through Identityti. In this way, Identityti creates a secure and simple path of communication between enterprises and employees for personal, confidential documents. Instead of requiring users to carry physical documents and submit them to enterprises, Identityti creates a channel to share these documents electronically.

Storing physical documents is stressful and confusing for those whom have to handle many documents regularly. Handling documents is seemingly ambiguous as to what one should keep and what one should throw away, and safeguarding the ones that are kept requires a high level of organization. Identityti alleviates this problem for its users by recommending to the user which documents they may want to obtain and store on the service. Depending on what documents a user has already stored, Identityti will provide feedback on what important documents are missing, as well as what documents are required for common tasks. For example,

when attempting to obtain a driver's license, Identityti will tell the user exactly what other documents are needed in order to apply for a driver's license.

### **STS Topic**

The rise of ecommerce has changed the way people shop and the way companies market. With online shopping providing 24/7 access, an easier means to compare prices and thereby save money, commute time, convenience, more availability of items that may be hard to find, and often time free shipping, online consumers are inadvertently making many brick and mortar stores obsolete (Ward 2019). The rise of ecommerce consequently demonstrates how technology determined and changed what people expect from retail.

Today, most people already presume companies are working hand-in-hand with social media platforms, search engines, and any other user data hosting platforms to form targeted advertisements. One of the simplest means of doing so is found in email advertising which typically requires merely harvesting email addresses from platforms that are willing to share such information. The challenge that marketers face, however, with email advertising is that they are often viewed as spam, not pertinent to the user and often unintentionally solicited. For the advertiser on the other hand, emailing provides unparalleled scalability, and unprecedented reach, at a cost that is infinitesimal compared to what it would take to accomplish the same results via traditional means (Ferrara 2019).

Feelings towards email advertising has changed in recent years with improvements in web browser technology, which have reduced user concerns regarding malicious online advertisements. In fact, the perception of email intrusiveness is said to be greatly alleviated when an ad is considered to be valuable. Users are said to value informational, financial reward, and

entertainment values from online advertisements. Studies describe that when a user does perceive intrusiveness that it negatively influences the user's experience by interfering with the person's privacy and cognitive process. The feeling of intrusion parallels how many home owners feel when solicitors knock on their doors unexpectedly. Studies also say a sense of intrusiveness can be triggered by advertisements that are exaggerated or make confusing statements which are typical features of online scams (Chang). The reactions that users have with different kinds of email advertising directly reflects what users value. Since online marketing practices are constantly becoming more cognizant of what users value, their evolution displays a means of which public opinion is actually shaping technology.

Ecommerce is a form of technological determinism in how it guides user choices through interface design. Whereas supermarkets position items with the highest markups at eye level to nudge customers into making unplanned purchases, online retail sites likewise position their highest markup items on the parts of their page with the most traffic. One popular technique that nudges user to make online purchases is found in scarcity (Schneider 2018). For example, sneaker websites may hold raffles for sneakers that may not even be sought after enough to warrant one in an effort to make more sales. Interfacing plays a role in selling these items by displaying them in the front page as hot commodity and decorating the website with special theming for the release (Eisenbrand 2018).

All the endeavors that ecommerce sites pursue to attract consumers, ultimately leads to an unprecedented attrition of individual's right to informational self-determination. On the one hand, consumers are powerless to prevent the unauthorized dissemination of their personal information, and on the other, they are excluded from its profitable commercial exchange. One Ecommerce specialist asked the question that if consumers' personal information is a valuable

market asset, should they not be entitled to benefit from their asset as well (Yassine 2011)? Which brings up another question; how much users value privacy and whether they would ever prefer having personalized advertisements at all. Personalized advertisements, for instance, according to the physical location of the user or according to the user's friends' search history, introduce privacy risks that may discourage wide adoption (Frik 2018). Thus, ecommerce sites must find a middle ground between blatantly stalking their potential customers and advertising blindly without any leads.

### **Research Question and Methods**

How did the rise of ecommerce change consumer behavior and marketing? One way to answer this question is to explore the evolution of online advertising which first started in 1994 with banner ads. Online advertising introduced a means of which advertising portals can charge marketers whether they be by number of impressions or by number of clicks (Evans 2009). By learning how intermediaries operate platforms that facilitate the connection of advertisers and consumers, the level of influence of intermediary platforms like search engines and social networks have on ecommerce platforms can be investigated.

Another means of which to answer the question is found in some of the popular social tools that are beginning to emerge on ecommerce sites such as live assistance and review systems. With the rise of ecommerce closing down many brick and mortar stores, ecommerce platforms attempt at filling the void of personal assistance and a platform for feedback, demonstrates how consumers are dictating the frontends of ecommerce platforms and more explicitly so with the emerging trend of pop up surveys requesting suggestions on how to improve the interfaces of ecommerce sites (Rice 2018).

Investigating the relationship between social media platforms and ecommerce sites can demonstrate what influences users to make certain purchases may it be through promotional posts or by increasing friends and followers (Zarrella 2009). Exploring how users may feel like their privacy has been infringed on can present the challenges marketers face in gaining users' trust.

Examining user interfaces will be key to understanding what catches users' eyes and also demonstrate how ecommerce platforms are determining what users see and ultimately what they buy.

### **Conclusion**

The goal of Identityti is to offer a service that can potentially resolve the hassle of keeping a stack of physical documents by allowing users to upload files to a secure cloud. Identityti is distinguished from other document hosting platforms in that it is proprietary for important documents may it be legal or medical. Identityti would recommend to the user what documents he or she may need next and also automatically categorizes all uploaded documents for seamless organization. The service would also allow enterprise users to seamlessly obtain documents online rather than having them handed by hand. Identityti's data management can reflect the data management found in ecommerce platforms and bring light to how ecommerce platforms may make use of data to form targeted advertisements. The expected outcome in developing this service would be a full-fledged document hosting platform that fulfills all the listed user stories and distinguished itself from other data hosting platforms

The goal of the STS project is to demonstrate how ecommerce has determined both how marketers operate and how consumers shop. The rise of ecommerce has changed the way consumers shop and the methods of marketers, presenting a theme of technological determinism.

However, as demonstrated in the prospectus, that is not always the case as online advertising has clearly evolved with user preferences. The expected outcome of the STS project would be a clear demonstration of how ecommerce is influencing both consumers and marketers.

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