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PERSONALIZATION AND THE INTERNET

Today's technology has made personalization much more sophisticated and targeted, as marketers are able to gain access to a plethora of information about users through the Internet and create sophisticated profiles of Internet users. The paper gives a strong framework into how personalization works, and highlights the shortcomings of personalization today.

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1. Executive Summary

Today's technology has made personalization much more sophisticated and targeted, as marketers are able to gain access to a plethora of information about users through the Internet and create sophisticated profiles of Internet users. Using these profiles, they are able to target products and services based on the collected data. In theory, personalization is a great tool for marketers as it can enable companies to focus on their target demographic and can enable online websites to help shape consumer behaviour patterns. The paper gives a strong framework into how personalization works, and highlights the shortcomings of personalization today. One downfall to personalization for companies is the cost of purchasing and operating the software and hardware needed to gain customer insights and store customer data. For the customers, privacy is a major issue that negatively affects consumer's purchase intentions and needs to be addressed. The paper gives recommendations on how online companies can alleviate these concerns. In order to advance knowledge in this topic to be more beneficial to companies, this paper proposes further study into the younger generation of Internet users and their concerns with privacy. This study is still a number of years off as this younger generation is not at the stage where they would be making purchases online. Finally, the paper proposes a marketing strategy that incorporates aspects of personalization, and aspects of mass marketing so as not to lose the important network effects of 'buzz' marketing.

2. Introduction

Internet technologies are changing the way marketing professionals reach and appeal to target audiences. Internet technologies enable one-to-one marketing, which is the tailoring of product and service offerings at the individual level. This represents a fundamental change in the way business understands customers as appeals move away from a mass-targeting approach. This level of personalization changes the relationship between marketer and customer as marketers require detailed knowledge of consumers to understand their individual preferences. Personalization is automated by the marketer on behalf of the customer and this can include some or all of the elements in a marketing mix on the individual level. The marketer must be able to leverage customer level information using analytical tools of technology. Technology is used to create adaptions of the marketing message, communicate with the consumer, gather their information and make inferences about the consumer's preferences and behaviour. *Personalization is but one element key to a successful marketing mix* (Montgomery & Smith, 2009). Personalization is proposed as a win-win solution for consumers and businesses alike. Consumers benefit by being offered products and services more suited to them. From a business perspective, this level of Customer Relationship Management offers some companies a competitive advantage, thus increasing profits by establishing long lasting loyal customers.

A literature review uncovered several definitions of personalization (See Appendix 1.) However personalization is most closely suited for the Internet environment. Personalization is the use of technology and customer information to tailor electronic commerce interactions between a business and each individual customer. Using information either previously obtained or

provided in real-time about the customer, the exhange between the parties is altered to fit that customer's stated needs as well as needs perceived by the business based on available customer information (Vesanen, 2007). From a marketing perspective, personalization occurs when the firm decides what marketing mix is suitable for an individual based on previously collected customer data (Arora et al., 2008).

Two main drawbacks to personalization were identified: privacy is the first concern and the second was the inneffectiveness of personalization to build consensus around a product or service like traditional mass marketing techniques.

Personalization is not a new phenomenon, it shares similiarities with direct-mail campaigns. However, the emergence of Internet technologies has made personalization techniques more intelligent and better targeted. Companies are moving towards a bottoms-up approach to marketing by trying to segment their markets to one. Companies are data-mining individual viewing and online purchasing patterns, deciphering the trends and developing a marketing mix that fits an individual's Internet viewing patterns. Personalization may be the way of the future for Internet marketers but there is speculation that this targeted approach eliminates if not diminishes a key part of marketing – the 'buzz' that is the result of people enjoying a common viewing experience. People want products that other people value and want (Sinha, 2009). Personalization and data-mining techniques are an ever-maturing marketing technique.

Regardless of the drawbacks it is apparent that personalization is here to stay. Personalization is commonplace; Amazon.com uses collaborative filtering to determine what music or books to recommend to users. Sprint can analyze customer usage to determine an appropriate calling

plan for the customer. Hotel's use search behaviour paired with loyalty information collected on site to suggest travel options. Insurance companies like ICICI-Lombard uses customers' surveys to prepare personalized insurance plans. The advantages claimed by this process are greater customer satisfaction and higher profits (Arora et al., 2008).

This paper will look into the process of personalized marketing efforts via the Internet by establishing how companies achieve this level of marketing and the benefits of adopting a marketing strategy that incorporates personalization. We will then identify the major issues that companies face when using personalization in their marketing approach and make recommendations for personalization marketing strategies based on our findings.

3. Aspects of Personalization – Literature Review

A literature review was conducted on technical, market and customer aspects of personalization. Technical understanding of personalization includes frameworks for understanding personalization, typical data analysis approaches as well as use of Internet technologies for collaborative vs. contextual filtering techniques. The second aspect of personalization covered was the customer, specifically the type of customer that is amenable to personalization strategies and using personalization to determine customer preferences and wants. The third aspect covered is the market strategies developed using personalization techniques such as one-to-one vs. segmentation vs. mass marketing, personalized pricing strategies, push vs. pull marketing, and the cost and measurement of personalization.

3.1 How a personalization search works

Typically when a person searches something like resort vacations the same results appear. A personalization search takes into consideration the users' past searches. This can be done through the use of 'cookies' which are tiny pieces of computer code that collect pieces of information about the computer user as they navigate through the Internet such as age, income, career, and past searches about a place (Montgomery & Smith, 2009). At the operational level, statistical approaches can be used for contextual and collaborative filtering. "Contextualization is the process through which a user's task is inferred from their behaviour" (Montgomery & Smith, 2009, p. 133). For example, a contextual ad system will generate advertising based on key words or patterns of behavior of individual users. Advertisements generally take on the form of "pop-ups" and targeted at the individual level based on collected knowledge of that particular user.

Collaborative filtering techniques show the user new products and services based on the similarities to other products or services. To further explain, collaborative filtering has been used extensively by Amazon, Barnes & Noble, Blockbuster and Netflix. Users are asked to choose from a list something that they like and then a third party recommeder makes a suggestion with the user indicating approval or dissaproval. With this feedback the site can focus in more clearly on the customers' preferences. Pandora, a personalized music recommender works this way. They have analysed music by some 400 attributes and ratings. Songs are selected based on their similarity to each other. This stands in contrast to contextualization filtering which makes suggestions based on the preferences one customer has to other similar customers. The challenge for the recommender system in collabarative filtering

is that when there is a vast array of choice alternatives and perhaps missing data which can limit the effectiveness of personalization. Regardless, Netflix's recommender software is remarkably accurate in predicting other products a customer would be interested in based on the previous product attributes.

3.2 Frameworks

Two conceptual frameworks for personalization were identified. Montgomery & Smith (2009) propose that personalization is a broad concept that encompasses execution, marketing outputs in the form of product/services, promotion/communication, price and delivery, and the creation of value for both the customer and the marketer. Value creation enhances a customer's understanding, resulting in an improved individual marketing mix and personalized messages. Personalization allows for more efficient messaging, which has the potential to better match products and services with customer preferences, which in theory, should improve sales, customer satisfaction.

Montgomery & Smith (2009) also explain a second framework proposed by Miceli et al. (2007) that identifies four dimensions along which to characterize personalization: value (customer expectation), knowledge (customer experience), orientation (utilitarian, hedonic, individualistic, and collectivistic) and relationship quality (branding and trust). This framework can be used to determine the marketing approach utilized during personalization.

3.3 Click-stream

Click-stream data is a general data collection method used to enable personalization. Click-stream data is especially important for personalization as data gained about the customer through analysis of online behavior can glean insights into customer preferences. A Click-

stream is the recording of what a computer user clicks on while Web browsing or using another software application. As the user clicks anywhere in the webpage or application, the action is logged on a client or inside the Web server, as well as possibly the Web browser, routers, proxy servers, and ad servers. Click-stream analysis is useful for Web activity analysis, software testing, market research, and for analyzing employee productivity (Montgomery & Smith, 2009).

Data can be obtained actively by asking the customer direct questions or passively by past purchase interpretation and click-stream. The challenge is twofold: sometimes the customer doesn't know the answers when asked about his preference and sometimes looking at past behaviour is not a good indication of future behaviour. In other words, inferences are risky for consumer decisions beyond price preference and price priority. However, when done correctly personalization can have enormous benefit for both the consumer and the marketer. For example, personalization can make distribution of coupons to only those customers who appear to value price. When applied to consumers making a purchase, this tactic increased expected profitability 260% (Montgomery & Smith, 2009), clearly demonstrating the value of personalization. The extension of this argument is this; collecting data in a brick and mortar store on what the customer has purchased in the past contributes to loyalty through a customer relationship management system. Collecting and monitoring a person's click-stream behaviour through personalization is like noting all qualities of the person's shopping experience in a store, what they stopped to look at, what they ignored, and how long they lingered over one item versus another.

One of the basic uses of click-stream data is to assess and improve upon website 'stickiness', which refers to the sites ability to keep a user on the site to fulfill the original purpose the site was created for (Rowley & Slack, 2001). In the case of online retailers the site has to keep them long enough for them to evaluate an offering and buy it. Issues that affect the stickiness are threefold: the longer people wait for responses, the less likely they are to stay; the higher the number of pages a user has viewed, the higher the likelihood that they will stay; and errors and interruptions on the site will drive people away in that interruptions break cognitive flow (Rowley & Slack, 2001).

Interruptions can cause negative feelings and decrease satisfaction with the shopping experience unless the interruption directly enhances the customers' ability to find required information and make a purchasing decision. This is where personalization done right can play a role facilitating a customer through the buying stage efficiently (Rowley & Slack, 2001). Click-stream data can help marketers understand how to keep customers on websites, where errors on the site are occurring as well as how to efficiently structure the website and the purchasing process. When used in this way, click-stream data can be referred to as being passive.

The type of data collected is critical. Data must be accurate, reliable and projectable towards customers' preferences leading to a buying decision. The firm's ability to collect quality data determines the level to which a firm should personalize; individual or business customers, larger market segments or something in between. This answer is a statistical issue but there are psychological and economic issues that come into play (Arora et al., 2008).

Several statistical approaches can be used to analyze click-stream data. Approaches include a dynamic multivariate probit model (Montgomery & Smith, 2009), which uses path information to determine where the customer is likely to go on the web next. This information can enable marketers to design websites to 'lead' consumers to what the marketer wants them to see next on the web. Montgomery & Smith (2009) also discuss the sequential probit model proposed by Sismeiro and Bucklin (2004) where movements through a website are decomposed into a series of tasks that must be performed before moving to the next step. Evolving visit behaviour looks at behaviour across sessions and finds that users that visit more frequently are more likely to purchase but also that changes in visit frequency over time can help predict the consumers' willingness to make web purchases (Montgomery & Smith, 2009). Other statistical approaches include data mining techniques extracting usage patterns. Data mining techniques enable marketers to understand the preferences of consumers (Montgomery & Smith, 2009). Another critical source of information to build a more rigorous personalization tool lies in the ability to analyze textual data in e-mails to the retailer.

3.4 Consumers

Consumers construct their preferences 'on the fly' as a function of their mood, their needs (unearthed or perceived) and the opportunity (Arora et al., 2008). If this is true then targeting customers through personalization is very difficult if not somewhat fool-hardy given customers preferences may not be stable over time. Preference stability is a critical premise in support of personalization. There is information however that preferences may be more stable when information is constant and when consumers have made repeated choices in a given product category (Arora et al., 2008).

Preferences may also become more stable to the extent that the Internet allows consumers to learn from the product experience and social information of other similar consumers. Enhancing consumer preference stability is foundational to the notion that personalization is a viable marketing strategy. In the B2B setting customers may have a greater tendency to know what they want and recognize their 'ideal' product and price when they see it i.e. they know their preferences better than an individual consumers.

Our research uncovered three distinct customer types that respond differently to the concept of personalization. Knowing your typical customer can go a long way towards customizing a personalization strategy for your product or service.

a) **Functional Consumers** - Personalization is moderated by the content relevance of the service or product and self reference (Montgomery & Smith, 2009). For example, a travel website may present you with a rental car offering after you have purchased plane tickets or you may receive an offering through email about local attractions.

b) **High Esteem-Needs Consumers** - Consumer's need for cognition may play a role in the effectiveness of personalization (Montgomery & Smith, 2009). Consumers with higher esteem needs may be more amenable as they may be more likely to seek out and respond to offerings. Personalization can have the effect of making someone feel 'special'.

c) **Security Cautious Consumers** - There is a possibility that users prefer to provide information in a gradual process and communications resulting from personalization may be a type of violation for these customers (Montgomery & Smith, 2009).

3.5 Customized Pricing

One of the most intriguing aspects to personalization is the ability to combine product/service offerings by using Internet technologies that depict different price points for different customers. This is not possible in a traditional mass marketing campaign. Consumer data gained through the click-stream combined with other passive data and active data collection can suggest an ideal pricing strategy (Arora et al., 2008).

Personalization offers great potential flexible pricing strategies. There has been research as to whether or not offering individual prices can make a firm better or worse off. Researchers matched firms and personalization systems and found that while this pricing strategy was optimal, both firms in the end were worse off (Arora et al., 2008). The issue might have been that it is unrealistic to assume that two companies can truly be matched. Customer loyalty and relationships can differ and thereby determine the decision to purchase. Shaffer and Zhang (2002) showed that the firm with more loyal customers participating in personalization do indeed earn higher profits than the firm with lower customer loyalty participating in personalization (Arora et al., 2008). An understandable issue at play is the cost of personalization. Dewan et al. (1999) show that as the cost of personalization decreases, the revenues generated from offering individualized prices increases (Arora et al., 2008).

One of the leaders in personalized pricing is Amazon.   Jeff Bezos of Amazon stated "if we want to have 20 million customers, then we want to have 20 million 'stores'…Our mission is to be the earth's most customer-centric company" (Montgomery & Smith, 2009, p. 134). Amazon provides dozens of forms of personalization features: Your Amazon, Today's Deal's

Recommendations by Category, Your browsing History and Your Lists amongst an ever growing list.

Prices are not that difficult to customize at a personal level but matching that capability with a consistent marketing message is very difficult and very confusing for customers. Take the airlines for example; Southwest's Ding system offers customers special offers that are typically 20-25% lower than other Southwest fares. A customer registers with Southwest and downloads a 'small applet' that is in constant contact with the airlines. The customer indicates which destinations are of interest and must be ready to act quickly when a sell off from Southwest is communicated by Ding (Montgomery & Smith, 2009).

Another way click-stream data is being used to personalize price is by assessing how much a customer values a product/service and their willingness to pay. Price differentiation is determined by the number of times a customer views an article or where the customer lives (city or neighbourhood). For example, the second time a person views an article the price can be adjusted in an attempt to persuade the customer to make the purchase. With reference to where a customer lives, higher end areas have higher price points (Iyer, Miyazaki, Grewal & Giordano 2002).

Another approach is user-driven personalization. This occurs when the customer uses an intermediary to search out offers based on what the consumer values. For example, Farecast acts as an intermediary between the airline and the consumer, searching out the best airfare rates. Farecast analyses the past and seasonal prices offered by airlines to the extent that it recommends to a customer when to buy and when to hold out for a lower fare. Farecast goes

so far as to sell guarantees for a fee, so that if the price goes lower than the recommended price, Farecast will pay the difference (Montgomery & Smith, 2009).

3.6 Marketing

According to Cuneo (2008), personalization is the end to mass communication making customer communications relevant. Personalization helps marketers improve one-to-one selling, customer segmentation and cross-selling and may result in a firm's competitive advantage (Cuddeford-Jones, 2009). The question for a firm is whether or not they should invest in one-to-one marketing. This answer depends on the type of product or service being sold and the type of customer to which the product or service is attractive. Not all products and services may be suitable for a personalization stragegy. If the product or service is widely and repeatedly used by customers, it is simple to see that the most cost effective strategy is to start with mass marketing to initially get customer to buy and then transition to Customer Relationship Management through personalization. If the firm's typical consumer is individualistic in nature, not interested in buying what the masses prefer, strong branding is immaterial. If the customer is more collective in their buying patterns (buying what is in vogue at the time), then personalization is not cost effective, and marketing dollars should be spent on mass marketing campaigns.

 "Customers "are desperate to have a relationship where they are nurtured, cared about and recognized…to a point" (Cuneo, 2008). The risk is that marketers put people into categories that they may not want to be in. This activity could result in a consumer backlash.   A study of 700 CMOs and CEO and top marketing executives found that "being just a little more personal

in how to help, hunt, handle and hold onto customers across every channel of engagement can pay major dividends" (Cuneo, 2008).

The other part to whether or not personalization is worth the cost and effort is the ability of the company to close the sale. The presentation of products or services in terms that are relevant to consumers; price, utility, features/benefits, is critical. To invest in personalization without the corresponding dedication to product/service presentation may be the equivalent of 'bringing the horse to water but not being able to make him drink.'

3.7 Strategies to Capitalize on Personalization

Smart technology is able to identify when a frustrated customer is about to abandon a transaction by measuring the times between clicks and the paths taken through a web site (Cuddeford-Jones, 2009). Research suggests that it takes at least 6 clicks for the average consumer to find exactly what they may be looking for. Given this some estimates suggest that 95% of potential consumers abandon their baskets before checking out (Cuddeford-Jones, 2009). This attrition may be lessened if the site introduces a 'click to call button' letting the consumer talk to a real person in real time (Cuddeford-Jones, 2009). Technology can register the rate of clicks and as the rate increases or momentarily stops signaling frustration confusion or indecision, the 'click to call button' appears. This online, off-line option makes people feel reassured and can limit the amount of potential sales that are abandoned (Cuddeford-Jones, 2009).

Another suggestion is that a site creates a sign-in process that calls up a persons profile to facilitate their shopping experience. However, this idea may in fact deter a customer from a

site. An alternative to signing into a site is linking a connection with Facebook and other social media platforms. Harnessing social media is a less expensive way of building personalization.

> Twitter, blogs and ratings get customers to interact. It's a small incremental cost to have customers engage with retailers…[Social media creates a platform where the] consumer can share his/her experiences, comment and review with others. This creates ownership and a sense of consumer advocacy. (Cuddeford-Jones, 2009)

Problems with this may be cost and time idicates Frank Lord , managing director of EMEA. He has spearheaded this type of initiative for a client charging 6-7 figures and taking nearly 12 months. The costs are high as are the returns (Cuddeford-Jones, 2009).

Marketers must also decide whether they are to use 'pull' as opposed to 'push' marketing techniques. Sinha (2009) explains that consumers may find push strategies in online marketing (i.e. Frequent online pop-up ads) to be annoying and intrusive. Too many choices can be very intimidating and confusing for a consumer. One of the outcomes for personalization is that a firm can offer customers a customized product, let the customer participate in what they want to be shown – customization. Cuddleford-James (2009) highly recommends combining personalization with customization. Let the customer decide what features or benefits are important to them, showing them as few choices as possible as they make their way to the buying decision (Sinha, 2009). Ads should not be too loud or aggressive but instead focus marketing messages on being honest, quirky, and understated, with some level of nuances. This will translate to trust and credibility (Montgomery & Smith 2009, Rowley & Slack 2001, Sinha 2009). Eastlick, Lotz, & Warrington (2006) find a strong positive correlation between trust and reputation, and a customer's purchase intent, which will bring companies higher sales and higher profits.

4. Issues Going Forward with Personalization

4.1 Privacy concerns

One of the major issues in personalization is that it is percieved as an invasion of privacy. In order for personalization to function properly, companies need a large amount of data and information about individuals. Information that customers may not be willing to part with. Governments have a range of laws that limit the collection and use of their citizen's information, but the private sector in many developed countries operates under fewer restrictions. Personalization on the web is a relatively new concept, but a great concern to Internet users is how organizations are able to collect data without their explicit permission (Geest, 2005). Privacy concerns for consumers are real and many consumers will weigh the pros and cons of divulging information against their need for a specific product. Studies have shown that customers consider both costs and benefits when revealing personal information. A firm can influence this balance of costs and benefits if they strictly adhere to keeping all information private and by rewarding the consumer for this disclosure with lower prices and products of interest (Akcura, Ozdemir, & Altinkemer, 2009). Companies also may use customer information as a method of boosting profits by cross-selling this data. Akcura, Ozdemir, & Altinkemer (2009) found that although cross-selling may be beneficial to the customer, they may be hestant to have their information shared with third parties making them less likely to divulge it when the possibility of cross-selling exists. Montgomery & Smith (2009) explain that there is a "tradeoff between information to implement personalization and the potential violation of privacy that comes with this information" (p. 135). This trade off is of legal interest in the sense that sees privacy vary on a continuum between a contractual consenting

agreement all the way to a basic human right. In order to provide customized browsing for

users without discouraging its customers through privacy concerns, marketers must be able to

understand this balance (Montgomery & Smith, 2009). Smith (2005) suggests that

> If personal information is collected, the collection mechanisms must adhere to both national and local laws and privacy statements regarding how the information is to be used might be necessary. In addition to remaining legal, companies must give their customers at least some sense of control over their own personal data.

 Citing a 2002 survey by Hanrick Associates, Smith (2005) explains that most people are not

concerned with their information being used for personalization purposes when they know how

it is being used beforehand. Consumers are strongly concerned however with the 'lack of

control over who gets the information' and receiving 'unsolicited e-mails'. Smith recommends

giving customers some influence over their own data, finding that companies that give

customers the ability to explicitly manage their prefereneces and make their own choices

regarding personalized marketing have a better likelihood of appealing to and retaining a

profitable customer base. Lee & Lehto (2009) found that the majority of online users today

prefer the website to have features that are personalized to their individual needs and wants,

however, when faced with the trade-off between higher personalization and higher privacy,

consumers appear to value privacy concerns more. This study determined that "high

personalized and high privacy features lead to a high lelvel of attitute and purchase intention"

(Lee & Lehto, 2009, p. 11). The study establishes that the ideal condition for users is a website

that is both highly personalized, and has high privacy features. A study performed by Eastlick,

Lotz, & Warrington (2006) found that that "the strongest relationships leading to online

purchase intent were those between trust in and commitment toward an electronic retailer,

and between firm reputation and trust. Privacy concerns influenced purchase intent with strong

negative effects, both directly and indirectly through trust." (p. 877).This study shows that

when companies have low privacy concerns amongst consumers, they will experience a higher

level of trust and a higher level of purchase intent. Inversely, companies with high privacy

concerns amongst consumers had strong negative purchase intent effects. Companies need to

be aware of the negative implications on purchase intent associated with high privacy concerns

and low trust, and create a personalization strategy that takes these relationships into account.

How can both the objectives of business and consumer privacy be balanced?

Researchers have the ability to estimate norms based on standard deviations. Montgomery &

Smith (2009) explain that all the information that analysts need to make inferences regarding a

parameter is contained within a sufficient statistic. For personalization models the question

exists as to whether this sufficient statistic can be disguised enough to protect the identity of

the customer while giving the customer choices in products and services that are of interest to

them. "From a privacy standpoint, sufficiency reductions are helpful because the anaylist no

longer needs the raw information but can work with a reduced potentially more anonymized

form of data without a loss of information" (Montgomery & Smith, 2009, p. 135).

Mechanisms such as TRUSTe and industry audits are needed to guarantee that customer

information is being used appropriately. TRUSTe addresses fair information principles by having

licensees agree to provide choice, security, data quality, notice, and access, and are

recommended as a basic method of showcasing to users that industry standards are being met

with regards to customer information. However there are still limitations with third party

regulation efforts. It can be argued that these privacy advocates are more for the industry than consumers because they earn their money from e-commerce organizations (Milne, 2000).

4.2 Personalized Pricing or Discriminatory Pricing

Discriminatory pricing is when a company charges different prices to different consumers for the same product (Maxwell & Garbarino, 2010). Depending on one's perspective it can be viewed as an adantage or as a disadvantage. As has been discussed in an earlier section, e-commerce websites have been known to have personalized pricing for customers based on a number of different viewing habits. A study released in 2005 by the Annenberg Public Policy Center of the University of Pennsylvania identified instances of dynamic pricing on the Internet. For example, a retail photography website charged different prices for the same product depending on whether shoppers had viewed price-comparison sites. Also, Amazon.com angered customers when it was uncovered that they had been offering different prices to different customers in 2000 (Ramasastry, 2005). The Annenberg study revealed that almost two-thirds of adult Internet users believed (incorrectly) that it was an illegal practice for online retailers to charge different prices to different users. The study also found that 87% of those surveyed strongly objected to dynamic pricing based on information that was collected through personalization techniques (Ramasastry, 2005). In an online survey of 387 respondents, Maxwell & Garbarino (2010) determined that online shoppers believe that the social norms that should guide discriminatory pricing in the United States are as follows: a seller should charge the same price for a given item to all customers; a seller should not charge a higher price to either more loyal or more frequent customers; a seller should not charge more to new or infrequent customers; and a seller should not charge less to infrequent purchasers. Online

retailers are aware of the concerns that shoppers have regarding price discrimination techniques, and have felt the wrath in online blogs and reviews over these questionable practices. It is critical to maintain customer loyalty and trust of the public in online commerce, and this negative publicity would more than likely hinder the public's perception. As was mentioned in the study by Eastlick, Lotz, & Warrington (2006), reputation and trust are pivotal in leading customers to purchasing online. If the trend of dynamic pricing is to continue online, e-retailers must find the balance between rewarding and not-rewarding customers without causing a backlash from its users.

4.3 Collection and Application of Data

Through the use of personalization, companies are able to create an individual marketing mix for every consumer. Arora et al. (2008) explain that "Traditional concepts in economics, such as price discrimination, and in psychology, such as information processing, have long supported tailoring the marketing mix to each consumer" (p. 14).   Personalization has become a technique used more extensively by marketers. One of the reasons as to why Internet personalization has taken so long to become a common marketing tool is the powerful software and hardware infrastructure required for data analysis and storage has not been readily available until recently. For this reason, intelligent personalized communications are really in their infancy, and have only been adopted by corporations over the past decade.

A recent study of 700 CMOs, CEOs and top marketing executives found that companies plan on spending only a small percentage of their budget on personalized communications (Cuneo, 2008). One reason for this trend that was suggested was the difficulty in personalized communications from a logistical standpoint. The survey performed by the CMO Council

outlined that the biggest challenge for implementing personalized communications was inadequate systems and infrastructure (Cuneo, 2008). From the same study, it was determined that the other key challenges for companies are the lack of customer data and insight, and the cost and complexity of the systems and infrastructure.

Arora et al. (2008) explain that personalization will only bring benefits to the company if the software that implements it is extremely intelligent and specific. The accuracy of the prediction of a consumer's wants is critical in operating successful personalization marketing. Misclassification of a customer's wants can be very costly as customers could find advertisements annoying and distracting. Companies must also decide the extent to which they integrate individual customer's data. Companies collect and store data from individual's 'touch points'. The more 'touch points' an individual goes through, the more comprehensive and accurate will be their identified needs and wants. Firms have found that integrating the data for every single customer is very expensive and time consuming (Arora et al., 2008). This is important because companies have to use a cost-benefit analysis, where the cost to the company is in the infrastructure and software systems and putting them in place, and the benefit is the return on investments of personalization. Companies may be unwilling to purchase personalization software and hardware components because of the significant financial investment involved, and in order for personalized communication to become more widespread in corporations, the technology has to be made more accessible. Due to the high costs associated with establishing and operating a personalization program, companies often have to decide to what extent they use one-to-one marketing. For example, a company may be able to obtain a 360 degree view of 40% of its customers that are signed up to a loyalty rewards

program. However it is prohibitively expensive to gain a 360 degree view of the other 60% of its customers. Companies may lack the customer data for the remaining 60% of its customers due to financial and technology restraints, and try to leverage the insights from its 40% sample to the remaining 60% (Arora et al., 2008); however this lack of customer data and insight may lead to misclassification and companies that do this run the risk of alienating their users.

4.4 Statistical Modelling of Collected Data

Insights into customer data are developed from statistical modeling capabilities. Some of these more sophisticated techniques are being sold in computing packages like SAS and BUGS, however this software is very expensive for most firms (Arora et al., 2008). The high financial investment can dissuade companies from purchasing the software, and limit the companies' insights into customer behaviours and patterns. One of the biggest problems with the software available is its inability to analyze qualitative data such as blogs, e-mails, news groups, and chat forums (Arora et al., 2008). With no techniques in place to analyze the qualitative data, this useful information can be wasted and never factored into an individualized marketing campaign. For example, a male creates a blog about how annoying he finds it when a website tries to sell him a BlackBerry based on the fact that he is a middle-aged man. The software has no means of analyzing this qualitative data and continues to advertise the BlackBerry to the man who becomes more and more displeased as the advertisements continue.

Research into the use of data intensive marketing strategies has been intense. Most of the progress has been due to Monte Carlo Markov Chain (MCMC). The MCMC is a simulation technique used for estimating the expectation of a statistic in a complex model (Gilks, 2005). These models are highly successful but they are very complex and time consuming to run often

taking hours to complete. In practice, a system has to be able to churn through choices

extraordinarily quickly in real time. The algorithms available are very sound but they are just

too cumbersome and time consuming to use. Montgomery & Smith (2009) offer a

recommendation to this problem through the use of Grid computations. Grid computations

"allow companies to harness the power of hundreds of thousands of low-cost personal

computers by splitting up the computational tasks so that they can be handled in parallel"

(Montgomery & Smith, 2009, p. 135). The processing would not be done sequentially the way

they are being processed by MCMC, and providing a promising direction for the way

quantitative models are employed in marketing problems. If this were possible then the gap

between theoretical expensive, academic models and the fast response models needed in

practice could be closed, and companies may be able to afford the time and costs associated in

operating the complex statistical models used for personalization.

4.5 Barriers to Implementation

Mining through consumer data in order to personalize marketing for individuals can have a

negative impact if the implementation is carried out incorrectly. Over-targeting is one instance

where personalization has a negative impact on consumer perceptions. According to Sinha

(2009), over-targeting can lead to offering consumers too much choice and too many decisions,

and result in intrusive push marketing. An example of this would be constantly having pop-up

advertisements appear on an individuals' screen. This can turn off a potential consumer in the

same manner that pushy salespeople and high pressure techniques do when shopping the

conventional way. Presently the Internet is becoming a strong resource of information with the

widespread usage of social media. Social networking, blogging, and widespread availability of

product reviews has made today's consumer less susceptible to marketing gimmicks and more focued on products, brands, and prices (Sinha, 2009). The problem that marketers face in the age of social media is that they need to recruit opinion leaders who will bring followers with them, but how can they personalize ads with incentives for this segment of the market? Another problem outlined by Sinha is that personalization can eliminate a highly meaningful and powerful network effect referred to as 'buzz'. Eliminating the network effect detracts from a commonality of experience and limits marketers. For consumers that make purchases based on social needs, egoistic needs and self-actualization needs, personalized marketing may be lost on them. Finally, marketing and nonmarketing sources differ in their credibility. Information that is delivered to consumers through marketing sources (i.e. mass media) are perceived as being less credible, manipulative, and biased. On the contrary, consumers believe that nonmarketing sources to be more credible because they do not have a stake in the purchase decision. This means that nonmarketing sources have a greater influence on consumer behaviour than marketing sources (Hoyer & MacInnis, 2010). By focusing solely on personalization, marketers may lose focus on marketing created by the 'buzz', the nonmarketing sources. By creating 'buzz' on social mediums marketers have a stronger influence on consumer purchase decisions.

5. Conclusions and/or Applications

The high level of personalization that is achievable today through Internet marketing is a direct result of advances in technology. There are many benefits to companies that embrace personalization techniques, most notably the opportunity to increase sales based on purchasing and behavioural patters of Internet users and their response rates. Companies also argue that

they are able to benefit the consumer through personalization by providing suggestions and recommendations to products the consumer may like.

In theory, personalization should work to better enhance an individuals' shopping experience by proposing items and products that are suited to their individual needs. However, research shows that there are ongoing concerns with consumers regarding the use of their information. Privacy remains the biggest concern as users seem to have lost control over what information is being collected on the Internet. Privacy concerns among consumers stem from lack of control over their information, leaving many feeling a profound invasion of privacy. Although governments have stepped up recently to address these concerns (such as the Federal Trade Commission drafting up Self-Regulatory Principles, and Canada's Office of the Privacy Commissioner addressing concerns regarding privacy on Facebook), there does not appear to be any laws or regulations being passed in the near future that will put harsher restraints on companies collecting user data. Research explains that users who have concerns regarding privacy and intrusiveness are less likely to purchase a product online (Eastlick, Lotz, & Warrington, 2006). TRUSTe is one mechanism that companies should consider in order to show Internet users that they are following the accepted practices of information collection and sharing. Companies should strongly consider giving individuals more control over their information, explaining what their information is being used for, and stay within the boundaries of the laws. This can instill trust and confidence in users, enhancing business consumer relationships, and increase profits. Finally, nonmarketing sources such as blogs and word-of-mouth have a greater influence on consumer purchase decisions than do marketing sources. Marketers must keep this in mind when developing their marketing strategy, and look for

synergies between the two. The best marketing strategy would be one that integrates both personalization, as well as generating the 'buzz' (often accomplished through mass marketing).

This research paper proposes that future studies must analyze whether privacy concerns are a generational issue that will be eliminated within the next number of decades as the younger generation of Internet users become adults. For a generation that grew up with the Internet since it was first commercialized in the 1990's, there may be an inertia that has developed as they have slowly seen their control over privacy and anonymity dissapear on the World Wide Web. In contrast, the younger generation (ages 5-15) who have grown up in the age of social medias such as Facebook and MySpace, may have already accepted that privacy online is an entity of earlier times. By becoming behaviourly trained at a young age to accept their information being online for the public domain to see, this generation may be a lot more accepting of personalized marketing messages and the lack of privacy control over their information.

Further studies must be completed to determine this, for if this is the case personalization practices will experience an enormous boom in the next five years as the younger generation begins to enter adulthood. A study that addresses this issue would be extremely beneficial to companies as it would inform them of how to best spend their marketing dollars, and allow them to foresee the changes and invest in the hardware and software needed for personalization.

6. Limitations of the Paper

Through this research we were able to address major customer concerns with personalization techniques on the Internet, and suggest ways to alleviate these concerns to consumers.

Due to scope restraints, the paper did not address personalization in mobile browsing.

Recently Facebook introduced *Instant Personalization*, a method where partner sites will share

customer information and data to create an extremely intelligent profile to help better

personalize marketing campaigns at the individual level. There was a noted backlash regarding

this sharing of information, but it was not substantial enough to provide Facebook with

incentive to cancel the initiative. This is a relatively new topic as it was initiated by Facebook in

April of 2010, and there wasn't enough peer-reviewed articles yet regarding the program. As

was suggested as an area to advance study, companies need to gain a better understanding of

whether privacy concerns will disappear as younger generations of Internet users begin

participating more in electronic commerce.

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