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THE PERSONALIZATION-PRIVACY PARADOX EXPLORED THROUGH A PRIVACY CALCULUS MODEL AND HOFSTEDE'S MODEL OF CULTURAL DIMENSIONS

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Abstract

The Personalization-Privacy Paradox is a relevant issue for companies today, as it deals with the paradox of customers who on the one hand want to keep their personal data private, but on the other hand desire the personalization benefits that can be gained by giving up that privacy. Many studies in the past have observed the Personalization-Privacy Paradox, but not thoroughly through the lens of a privacy calculus model. This paper uses a privacy calculus model to examine the Personalization-Privacy Paradox using Hofstede's Six Dimensions of Culture and examines the United States, Germany, and China as case studies of three different cultures. These three cultures all have a great deal of influence in the world and are world opinion leaders but have vast differences in cultural values and beliefs. This paper shows the importance for marketers, designers, and implementers of personalization services to understand diverse cultures and how their varied idioms, beliefs, and values affect how they will perceive benefits and costs of personalization services in their internal privacy calculus. The marked differences in cultural scores and how those cultural beliefs affect the perceptions of personalization and privacy demonstrate that companies looking to expand their services and applications into new markets cannot rely on universal approaches.

Keywords: China, Germany, Hofstede, Marketing, Paradox, Personalization, Personalized Advertising, Personalized Services, Privacy, Privacy Calculus, United States

The Personalization-Privacy Paradox Explored Through a Privacy Calculus Model and Hofstede's Model of Cultural Dimensions

In the modern world, multinational enterprises are becoming more common as it becomes easier for smaller companies to go multinational thanks to the globalization of travel and internet connectivity. Simultaneously, as technology advances companies become capable of increasing the personalization of advertising and services on the internet and in applications tailored specifically to an individual user based on their history, demographics, and desires. As companies use more personal data gathered from their consumers, and expand into new markets, they run into the problem of different cultures holding different beliefs about how their personal data should be gathered, stored, sold, and used. In order to increase the rate at which individuals in new markets adopt personalization services, the company implementing it must understand the Personalization-Privacy Paradox (Xu et. al, 2011) through the lens of a privacy calculus. Additionally, the company must understand that the costs and the benefits of their personalized service which will be perceived differently depending on the culture and the laws of each country.

Adopting one universal approach to personal data protection is not the most effective way to handle differences in culture (Evanoff, 2004). Consequently, the best practice for multinational and multicultural companies for handling personalization and personal data protection is to be informed about the culture of each country they attempt to enter. With this information, the company can make educated choices about how to tailor marketing, implementation, and service design to fit the given culture and most effectively gain market share and consistent use within that country.

A company implementing personalization services in a specific country must have a full understanding of the country's culture. This understanding must encompass laws, as well as a values, perceptions, and ethos, and the company must adopt an approach to marketing, implementation, and design of service fitted to that particular culture.

The remainder of this paper is organized as follows. In the first section, terms are defined. This section includes a description of what the Personalization-Privacy Paradox is and how it can be measured using a privacy calculus. The next section deals with the Personalization-Privacy Paradox's relationship to marketing in two distinct ways, namely personalized advertising and personalized service. The third section of the paper deals with defining Hofstede's six cultural dimensions, as well as an outline of how each of them relates to the Personalization-Privacy Paradox. The fourth section takes three large and influential countries, the United States, Germany, and China, and examines each of them through the lens of Hofstede's cultural dimensions. This section draws on the previous sections' discussions of how each of their scores affects their reaction to the benefits and costs of personalization and privacy. Finally, conclusions are presented with limitations and avenues for future research.

The Personalization-Privacy Paradox

With modern advancements in technology, one of the most difficult and important problems facing marketers is dealing with the *Personalization-Privacy Paradox* (Xu et. al, 2011). The Personalization-Privacy Paradox is a dilemma where "consumers, on the one hand, … may identify great values in receiving customized messages galvanizing their intended purchases, while on the other hand privacy concerns about disclosing personal information in exchange for

promotional messages may turn them away" (p. 42). For the case of the Personalization-Privacy Paradox, "Personalization" has been defined by The Personalization Consortium in 2003 as

> the use of technology and customer information to tailor electronic commerce interactions [and other electronic interactions] between a business and each individual customer. Using information either previously obtained or provided in real time about the customer, the exchange between the parties is altered to fit that customer's stated needs, as well as needs perceived by the business based on the available customer information (Adomavicius & Tuzhilin, 2005, p. 83).

Additionally, according to Rognehaugh's 1999 definition as cited in Sutanto et. al (2013), in the context of the Personalization-Privacy Paradox, "Privacy" refers to a "user['s] rights "to keep information about themselves from being disclosed to others [marketers and other unknown people]" (p. 1142).

Some studies (Dinev & Hart, 2006; Li, Sarathy & Xu, 2010) have advanced the concept that when a consumer is faced with the dilemma of whether to accept an added element of personalization themselves at the cost of disclosing some amount of personal information, they perform "privacy calculus". This privacy calculus is represented by Awad and Krishnan (2006) as the following formula:

$$U(X) = Benefit - Cost \quad (1)$$

Where Benefit is derived through "the degree of personalization received" (p. 18) and the cost function as follows:

Cost = f (consumer privacy concern, previous privacy invasion, consumer-rated importance of information transparency, consumer-rated importance of privacy policies) *(2)*

The Personalization-Privacy Paradox's Relationship to Marketing

The study of the Personalization-Privacy Paradox with regard to business operations leads to the conclusion that firms are "facing a paradox, as consumers who value information transparency are less likely to participate in personalized offerings" (Awad & Krishnan, 2006, p. 24). In that context, how firms' marketing departments should deal with privacy issues becomes less clear. In the Privacy Calculus performed by a firm's users, those who value their information transparency the most will overvalue the costs and undervalue the benefits, leading to a lower perceived utility of the personalization and a lower desire to adopt. Should the firm cater privacy standards to this segment of people who value information transparency the most, they will be leveraging resources toward more transparency, receiving less marginal return after having already provided enough transparency for the majority of users. Awad and Krishnan (2006) suggest that firms focus their efforts on those who are willing from the outset to partake in personalization, in order to "increase consumer-perceived benefits of personalized service as well as personalized advertising" (p. 25).

Personalized Advertising

The distinction between the two forms of personalization mentioned by Awad and Krishnan (2006), "personalized service" and "personalized advertising" is one that firms must keep in mind when considering information and privacy transparency (p. 25). One form of personalized advertising takes a user's private information and feeds it into their database,

where traits of the user are matched with specific kinds of advertisement and the user is fed an advertisement that matches with data about them that has been collected (Lambrecht & Tucker, 2013). Forms of data that can be used to this end include age, gender, search history, and likes and dislikes. This data is either gathered directly from the user or inferred from other data. The advertisements fed to them can be through email or appear on web pages as banner ads or sidebar ads, but none of these are as effective in terms of click-through rate and user-perceived benefit as search engine listing ads (McLaughlin, 2002). Additionally, a relative newcomer to the personalized advertising game comes in the form of social media advertising.

In a search engine search, the user is presented with a descending (by relevance) list of results related to their search term(s). However, interrupting a true relevance ranking, sponsored links also make an appearance. These sponsored links appear when a company pays the search engine to include their advertised links at the top or side of the result page for certain search terms. For example, a company like Expedia could buy advertisement space for search terms like “how to get from Seattle to New York” or “air travel” and have their web page links appear at the top of the search results, above even the most relevant matches found by the search engine algorithm (Ghose & Yang, 2009). This form of advertisement would be considered “personalized” because the advertisements only appear for users who show interest in certain items such as air travel.

The real personalization and privacy issue arises, however, after the user’s session of searching is completed. The banner and sidebar ads on other web pages the user might visit begin to show personalized advertisements related to their past search terms and past web pages they have visited, forcing the user to ask how the advertiser knew what they were

previously searching for (Kazienko & Adamski, 2007; Anand & Shachar, 2009). Advertisement agencies pay to get access to their search and web page history in order to show them relevant advertisements in those banner and sidebar locations which the specific webpage has reserved (and received payment) for this purpose (Chellappa & Shivendu, 2006).

Email advertisements follow a similar path of personalization, albeit typically from within an organization. For example, Amazon.com send emails to its users with personalized highlighted items and deals (see Appendix 2) based upon their search history specifically on Amazon's website. These advertisements show again that a customer's search history on every website like Amazon.com is being tracked and saved to provide them with an email with personalized links in the hope that the customer might follow through.

Social media. In recent years a new category of business has taken over a significant share of online advertisement. Social media websites/smartphone apps such as Facebook, Instagram, and Twitter also provide space for advertisement companies to display personalized advertisements. In addition to simply offering the space to advertisers to display ads based on external search history, these applications also offer more information to the advertisers, including likes, comments, page follows, reposts, and basically any other interaction offered on the social media platform (Okazaki & Taylor, 2013; Tucker, 2014). Advertisers can build a profile on a user using that user's history and patterns of interaction with various social media posts. Using that profile, the advertiser can then make an informed prediction of what kind of advertisement will be the most engaging for that user.

These social media advertisements sit in-between entries of the platform's actual content, so as the user browses the content their eyes naturally track over and experiences the

ad. This is aided by ads' prevalent use of eye-catching content such as video or image content to make sure the user's eye catches and experiences the ad (Resnick & Albert, 2014). Additionally, due to their interspersed nature (as opposed to search engines having them blocked off into separate sections like the very top or sidebar), these social media ads are much harder to simply ignore, as the user cannot only skip one section, they will see the ad in-between the content they browse as they scan through it (Resnick & Albert, 2014). Furthermore, the advertisers can track how long a user of the social media platform pauses while looking at the ad, recording even more data on the user's interactions with the ad (Hamaoui et. al, 2009). Social media users are mostly unable to avoid interacting with advertisements, and advertisers can measure the user's level of engagement with that advertisement. This information is invaluable to the advertisers in building and iterating their profile on the user, as the advertiser can judge the effectiveness of various types of advertisement among users of specific demographics.

Most users possess some amount of awareness of personalized advertisements due to their obvious nature and the user being unable to avoid them completely. However, there is another form of personalization that is less obvious but has a greater effect on the user: personalized service.

Personalized Service

Personalized service operates in a similar way to personalized advertising but is different at its core due to a difference in the end goal of the personalization. Personalized advertising tracks user information in an attempt to sell that information to advertisers, who proceed to use it to offer advertisements they believe will be relevant to the user and the user will

therefore click on—giving the advertising agency a cut of the generated profits of that action. In contrast to personalized advertising, personalized service—defined as "context-specific services to each individual" by Ho & Kwok (2002, p. 10)—operates primarily within the firm or application that collects the data. The goal of the system is not to sell items or services to the application's user, but rather to improve the user's experience and keep the user returning to use the application repeatedly (Guy et. al, 2010). The application primarily records a user's usage data, but demographic data can also play a lesser role in personalized service.

The most common way a service is personalized is found in applications such as Facebook and Netflix. In Facebook, based on the user's personal usage data, search history, and interaction history (e.g. commenting on or "liking" posts from certain pages or other users), the application's algorithm can choose what recommended content to show the user. Facebook's newsfeed does not show a true historical account of all of the posts from friends and other pages a user follows. Rather, it curates the feed to show only the content the algorithm decided would be the most relevant to the user. It chooses a subset of all activity available to show to the user. Typically, the subset is comprised of friend's posts, posts from pages the user follows, and content it deems relevant based on pages their friends have liked that are similar to pages the user has liked (Lee, Hosanagar, & Nair, 2018; Machanavajjhala, Korolova, & Sarma, 2011; Lazer, 2015). Facebook arranges that content on the home page based on both relevance and recency (DeVito, 2017). The Facebook personalization and personalized posts are not particularly obvious. The underlying algorithm is basically invisible and does not make itself obvious on casual scanning of the home page. The exceptions to this invisibility are minor, as the posts Facebook's algorithm recommends to a user personally are only tagged in two ways.

Either the post is tagged as “Sponsored” in relatively small, if still moderately obvious, text (See Appendix 3), tagged as “Similar to posts you’ve interacted with” (See Appendix 4), or they are shown to be appearing because one or more of the user’s friends have interacted with it or been “tagged” in it and the algorithm also believes the user would like to interact with it (See Appendix 5).

Netflix’s personalization algorithm functions very similarly to Facebook’s. Based on a user’s past viewing habits, Netflix’s recommendation algorithm can build a profile of what that particular user likes or dislikes. From that profile, Netflix’s algorithm can build a personalized list of other shows he or she might like (Gorgoglione, Panniello, & Tuzhilin, 2019; Wilson & Crawford, 2007; Gomez-Uribe & Hunt, 2016). If a user likes the recommendations, they are then more likely to come back to Netflix or stay on Netflix to watch when browsing or in the recommendation screen upon finishing a movie or the latest episode of a series. The Netflix algorithm can take factors like how often users interact with their recommended section to improve its recommendations over time, or even outsource improvements in a challenge to the community at large, which Netflix has done before (Bennett & Lanning, 2007; Hallinan & Striphas, 2016). When the algorithm shows poor results (e.g. a low percentage of user interaction with recommended options) or Netflix otherwise decides their algorithm should be updated, Netflix can use that data to improve its algorithm programming to increase user experience in the future.

These algorithms for personalized service decide what they think is the content that would be most interesting to the user. With that information, the service can personalize the user’s experience to show primarily content that is interesting and engaging for the user and

improve the user's experience with the application. If a user is exposed to content they are interested in, they are likely to have a positive user experience and keep returning to the service, whereas if the user is exposed to irrelevant or even jarring content it can lead to a poor overall user experience and less of a desire to continue frequent use of the service.

Comparison of Personalization Techniques

The two techniques of personalization—personalized advertising and personalized service—share similar methods of implementation and data collection yet have vastly different effects on the consumers exposed to them. According to McLaughlin (2002) and Zhu & Chang (2016), personalized advertising is largely perceived as less beneficial than personalized service. That fact, paired with the earlier discussion of consumer perception of benefit having an impact on a consumer's likeliness to adopt a personalization, leads to personalized advertising being less well-accepted than a personalized service. Therefore, for managers of firms or applications looking into implementing some form of personalization, this distinction between personalized advertising and personalized service is of great importance.

These personalization techniques seem to range from unobtrusive to actually helpful to the user, but there is an issue with them that cannot be overlooked. The issue arises from the fact that in order to implement these personalization techniques the firms who wish to implement them—and make money from advertising or improve their user experiences—must collect and store information on their users, and some of that information could be considered sensitive or private (Hull, 2015). Additionally, for corporations or applications that span multiple nations and cultures, the differences in laws and culture must be accounted for. Those legal and cultural differences as to what is considered private or sensitive and how readily consumers will

trust corporations with their data are vital information for managers to possess so that they can make culturally informed decisions.

How Cultures Differ and how that can Affect the Personalization-Privacy Paradox

Each distinct culture around the globe has its own unique set of values and weights placed upon the importance of those values, despite the individual's perception of their own culture being universal (Evanoff, 2004). It is important that managers and decision-makers in corporations and of applications that transcend national and cultural borders break out of the mindset that their own culture is the most viable and should be universally accepted. Instead, they should make culturally aware decisions. One of the most common ways to examine cultural differences objectively is to use Hofstede's theory of cultural dimensions. This theory ranks cultures on four spectrums: Femininity-Masculinity, tendency toward Uncertainty Avoidance, amount of Power Distance, and Collectivism-Individualism (Hofstede, 1984). These dimensions are defined, and their relationship to the Personalization-Privacy Paradox is outlined below.

Femininity-Masculinity

The Femininity-Masculinity spectrum measures a culture's feeling toward emotional roles and how they value certain emotional and relational goals. "This dimension indicates how individuals in a society value work goals, assertiveness, competitiveness, and material possessions (masculinity) rather than personal goals, good working relationships, cooperation, and quality of life (femininity)." (Lowry, Cao, & Everard, 2011, p. 173). For reference, by Hofstede's measures China is high on the list of masculine cultures; the United States is considered moderately high, though not as high as China (Hofstede, 1984), as shown in the

following figure. Additionally, as shown in the figure, Germany and most of the European Union falls far to the Masculine side of the spectrum as well.

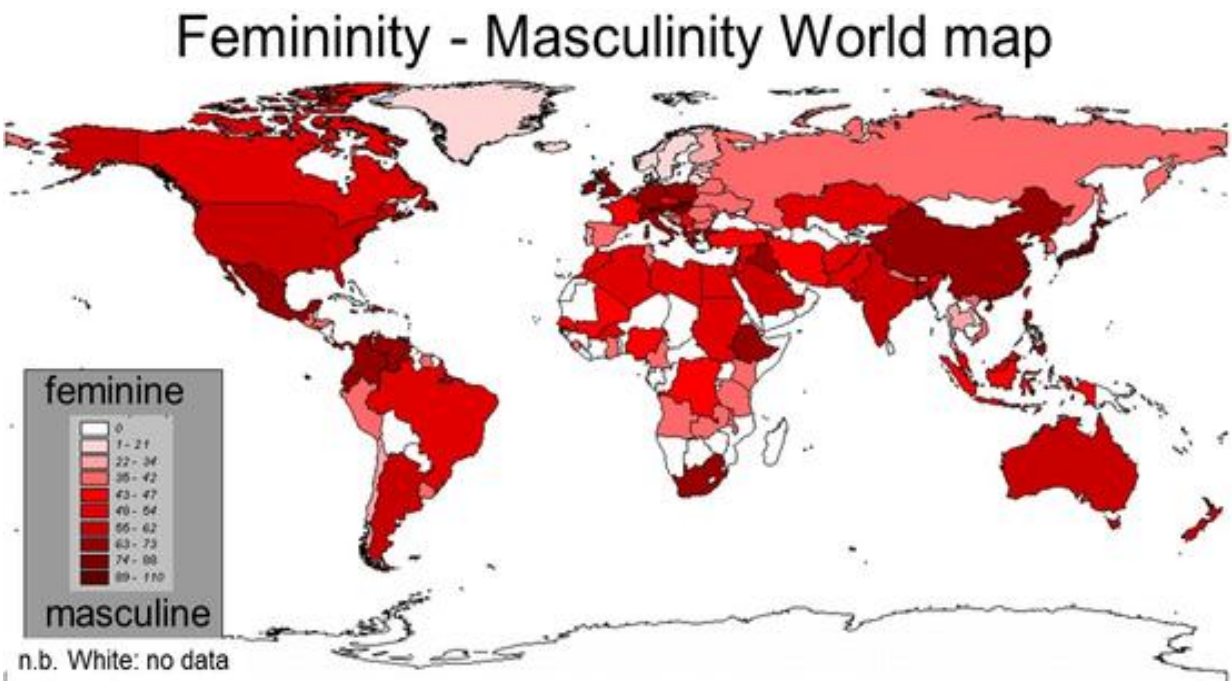

Figure 1: Hofstede's World map of the Femininity-Masculinity spectrum (Hofstede, n.d.a)

Relating this measure to the Personalization-Privacy Paradox, Lowry, Cao, & Everard (2011) argue that "To achieve work goals, highly masculine individuals may understand the need to forego a certain amount of privacy; conversely, highly feminine individuals are less achievement oriented, less competitive, and may have greater information privacy concerns. We thus posit that higher levels of masculinity decrease one's information privacy concerns" (p. 174). Therefore, if only this dimension is considered, none of China, Germany, or the United States would have a particularly high concern about their information privacy, worrying much more about losing potential benefits that could be derived from the personalized advertising or service. For managers of multinational firms or cross-cultural applications, this information can be vital to know because privacy approaches that work in the middling United States could

cause issues with the more masculine China or Mexico, but also could cause issues in the very feminine Scandinavian countries.

Uncertainty Avoidance

The spectrum of uncertainty avoidance measure how much a culture generally seeks to avoid uncertainty and ambiguity. A high ranking in uncertainty avoidance means that a culture is generally more reserved and desires to have fixed habits and rituals. As shown in the following figure, China and the United States are classified as low uncertainty avoidance cultures, and Germany is a bit of an outlier among its European neighbors with its lower uncertainty avoidance. Germany is, however, still leaning more toward uncertainty avoidance than is China or the United States (Hofstede, 1984).

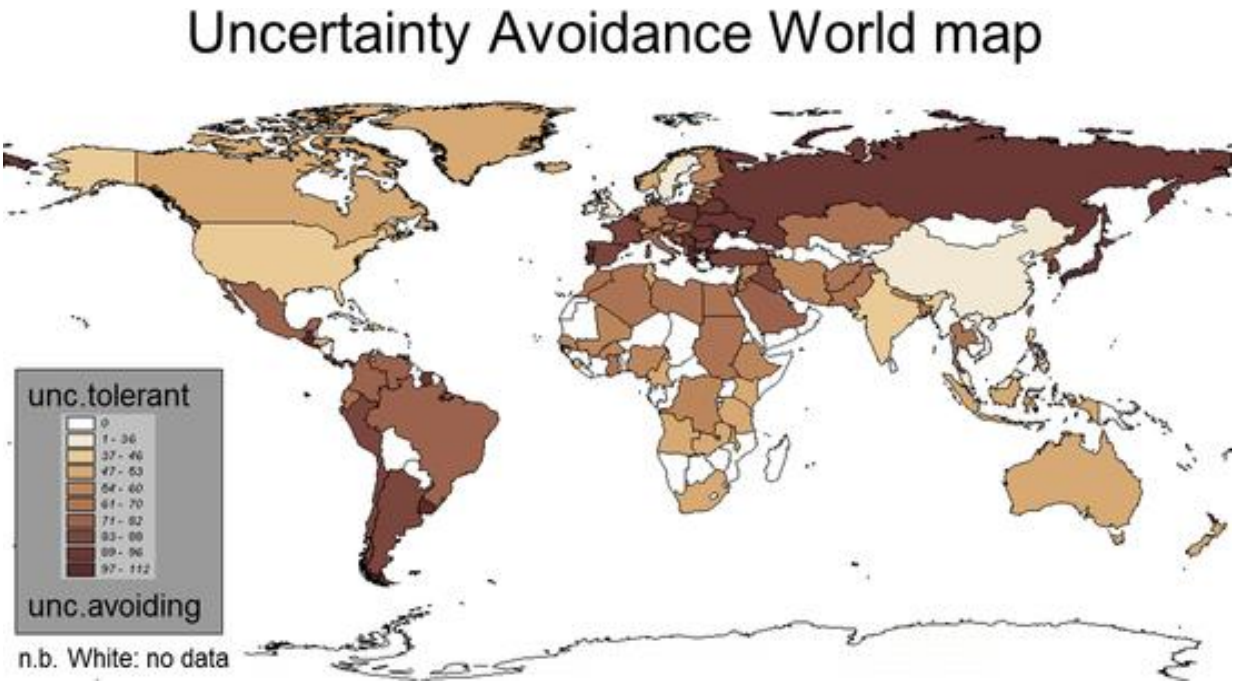

Figure 2: Hofstede's World map of the Uncertainty Avoidance spectrum (Hofstede, n.d.a)

With regards to the Personalization-Privacy Paradox, Cao and Everard (2008) note that individuals with high uncertainty avoidance scores will try to avoid or minimize ambiguity about

the use of their personal information by limiting others' access. For managers, this information can be important to know when going into business in these countries, as a privacy approach that works in the uncertainty tolerant United States might not be as effective in the uncertainty avoiding Germany (or the rest of the European Union outside of Great Britain (pre-Brexit), who rank as even more prone to uncertainty avoidance).

Power Distance

The power distance spectrum measures where a culture ranks with regard to how much the people in the culture are used to power being distributed unequally. A high power distance ranking means that a culture's power is distributed very unequally, with those in power being nearly untouchable by those not in power, and those not in power have little chance of making it to the top of the power struggle. As shown below, China ranks notably high on the power distance spectrum, while the United States and Germany (along with most other "Western" cultures) rank low, meaning that their power is distributed more equally (Hofstede, 1984).

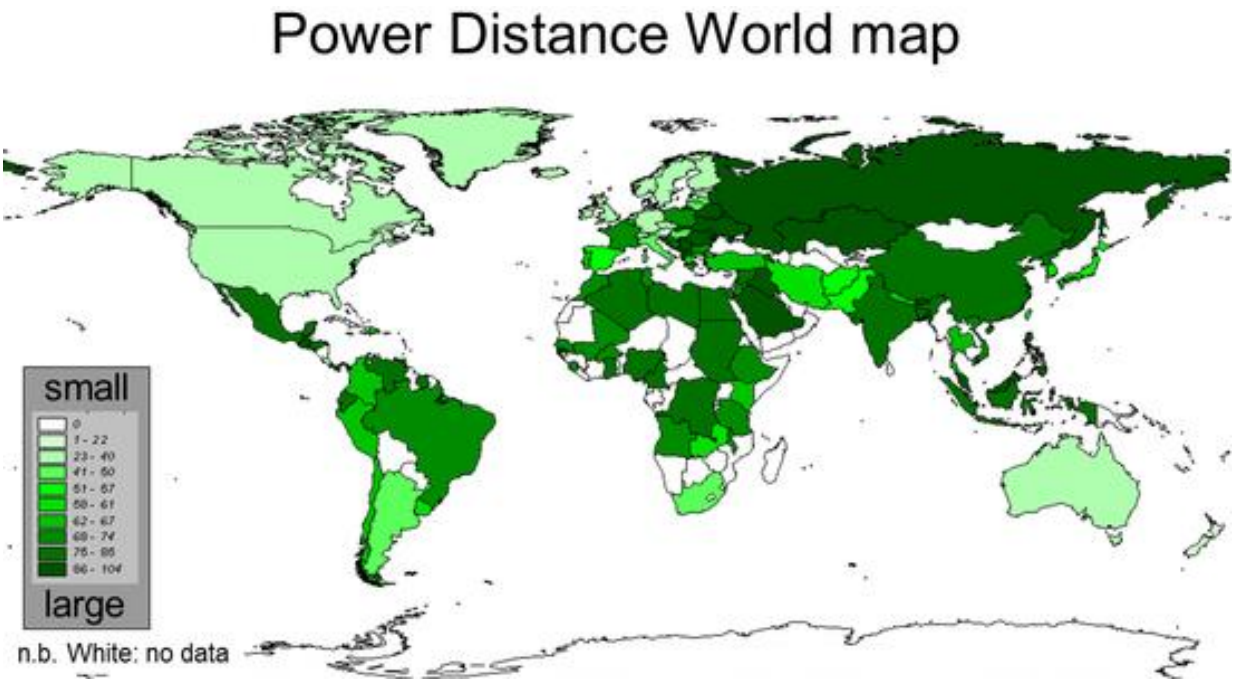

Figure 3: Hofstede's World map of the Power Distance spectrum (Hofstede, n.d.a)

In relation to the Privacy Paradox, Cao and Everard (2008) note that individuals in high power distance cultures who are not in authority positions can tolerate greater levels of power inequality and therefore are accustomed to authorities having access to their personal information. Additionally, Lowry, Cao, & Everard argue that high power distance cultures experience a more formal standard of control through more centralized knowledge and restrictions of the exchange of knowledge, and "[i]ndividuals in such highly regulated cultures would thus have fewer concerns about sensitive information being distributed" (p. 175). For managers, this information can be vital to their operations as individual consumers in a higher power distance culture such as China will react differently to privacy standards and approaches than individuals in Western, lower power distance cultures. Chinese individuals might be more accepting of centralized, governmental control of information and uncomfortable with private corporations having control of the same information, while Western individuals are more used to relying on the goodwill of corporations and less trusting in the centralized government's safety and security with their private information.

Collectivism-Individualism

In Hofstede's (1984) dimensions, the Collectivism-Individualism scale measures the amount to which individuals in the culture feel strong bonds to other individuals—to the point of it being culturally imperative to always put the good of the group before one's own good. An individualistic culture is one where bonds between individuals are generally weaker, individual decision-making is encouraged, and individuals are lauded for their personal achievements. Collectivist cultures, however, encourages individuals in the culture to integrate into strong,

cohesive groups and show those groups unquestioning loyalty in exchange for protection (p. 176). As shown in the following figure, China is an extremely collectivist culture, as are most non-Western cultures, while the United States, Germany, and the rest of the Western cultures rank very highly in terms of individualism (Hofstede, 1984).

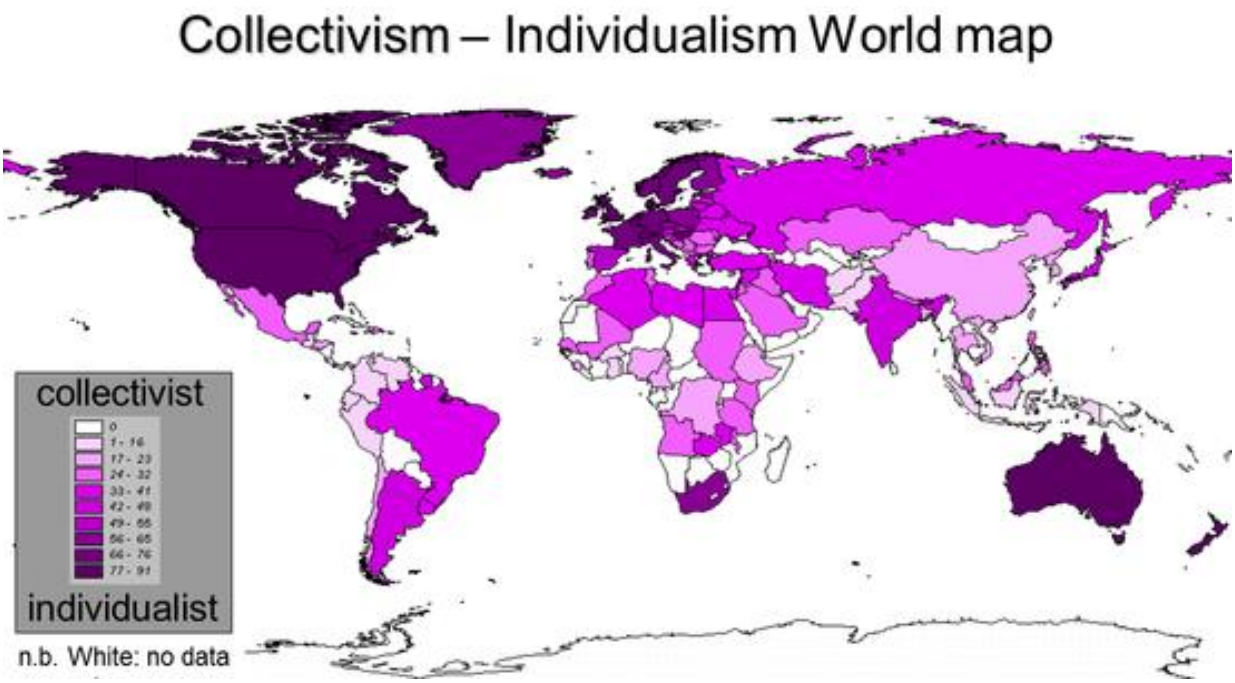

Figure 4: Hofstede's World map of the Collectivism-Individualism spectrum (Hofstede, n.d.a)

In relation to the Privacy Paradox, collectivist cultures like China are believed more concerned with their information privacy, while on the other hand individualistic cultures like the United States and Germany have more pressing issues (Lowry, Cao, & Everard, 2011). In cases where the marketing for personalization services targets individuals, highly individualistic cultures are expected to react more positively to the services (LaBrie et. al, 2018). In the individualist mindset, where individual accomplishments are lauded and individuals are rewarded instead of whole groups, individuals are more likely to take some risks to "get ahead" either monetarily or socially and are less concerned with their personal privacy. Individuals in a

collectivist cultures like China, however, must think about not only their information privacy, but that of their group. Additionally, these individuals must be mindful of the possibility of repercussions should they take an action that damages the group as a whole, while individualists can operate under the assumption that any mistakes they make will only affect them individually. With the focus of collectivist cultures like China being on what is beneficial to the collective and less on what could be harmful to the individual, Chinese individuals will naturally be less concerned with personal privacy than their Western counterparts.

Long-Term Orientation

Since Hofstede's first implementation of his model in the 1980s, two more dimensions have been added to the original four. The first of these new dimensions is long-term orientation. Long-term orientation measures how people in a given culture deal with change. Cultures on the more long-term oriented end of the spectrum highly value perseverance, thrift, relationship ordering by status, and adaption both at a personal level and adapting tradition to fit the future (Hofstede, 2011). Long term cultures believe in the stability of their world, specifically the stability of the current regime of government and do not expect drastic political changes in the near future. Short-term oriented cultures, on the other hand, most highly value reciprocating social obligations, saving one's "face", and personal steadiness and stability in the now (Hofstede, 2011). Short-term cultures might expect more governmental turnover and drastic shifts, either from election-based systems or instability in the current regime inviting a takeover. China is one of the most long-term oriented countries in the figure, showing their values for thrift, perseverance, and status-based relationship ordering, along with their belief in the stability of their current governmental regime (Hofstede, 2011). Germany, while it doesn't

show in the figure, ranks as similarly long-term oriented to China based on Hofstede's data tables (Hofstede, n.d.b). The United States is far more short-term oriented than either of those other two major countries, though not as much so as are the number of African countries highlighted in orange hues in the figure. This shows the United States culture's value for tradition, reciprocation is social obligations, saving and protecting "face" and personal image, and social spending and consumption (Hofstede, 2011, pp. 13-15).

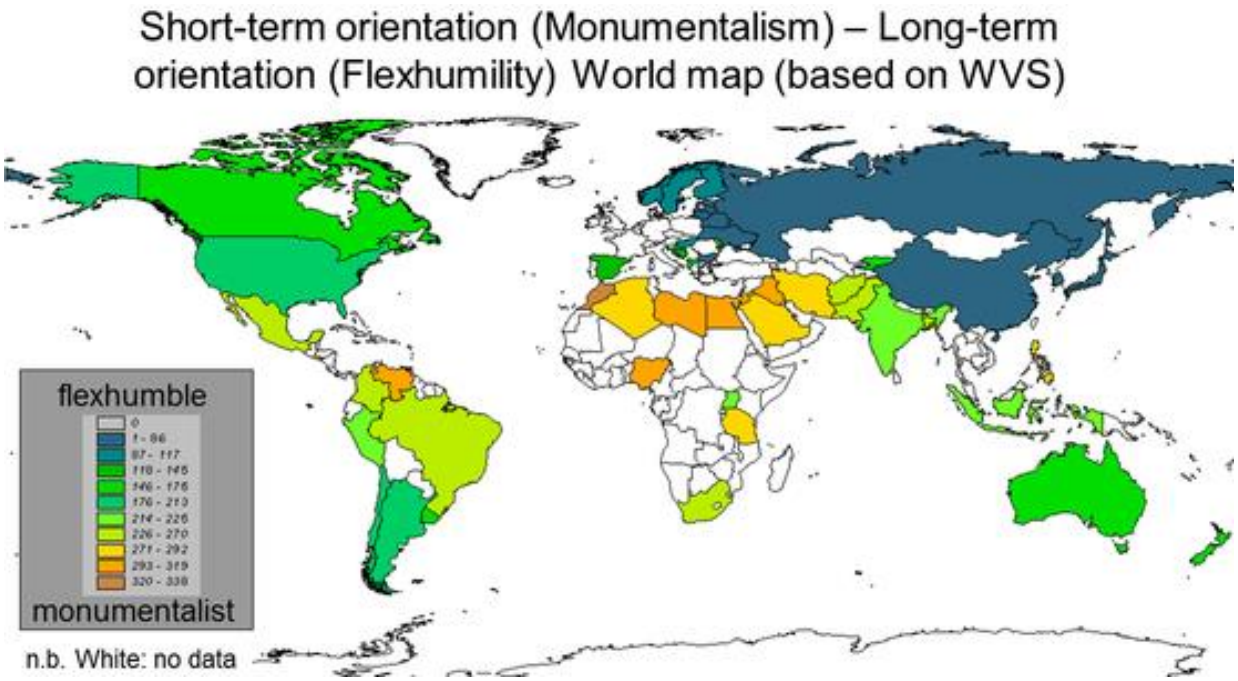

Figure 5: Hofstede's World map of the Long-Term Orientation spectrum (Hofstede, n.d.a)

In thinking about this cultural measure with regard to the Personalization-Privacy Paradox, it seems likely that cultures with shorter-term orientations might value different things in a personalization service, such as expediency of results and the spread over the long-term of any drawbacks. In contrast, long-term oriented countries would not care so much about the immediate or expedient benefits, preferring instead to look at the overall picture of benefits and costs, both in the immediate future and down the line. Long-term oriented

cultures might be swayed by a personalization service that even has more cost than benefit in the immediate-term, so long as the long-term benefits outweigh the total long-term costs. A short-term culture would never accept such a personalization service, because they do not case as much about the total in the long run as they do about the expediency and immediate-term comparison, even accepting immediate-term benefits with greater later costs, such as loans with too high of interest rates.

Additionally, as explored by LaBrie et. al (2018), long-term oriented cultures are more pragmatic about the future, and can be expected to react more favorably to new personalization technologies than their short-term oriented counterparts. Short-term oriented countries are likely to be less trusting of new technologies and can be projected to view them with more suspicion rather than approaching them with an open mindset to how the new technology might be beneficial in the future.

Indulgence-Restraint

The sixth and final dimension in Hofstede's model as of the present is indulgence-restraint. In an indulgent culture, freedom and following impulses on a whim without forethought is the norm (Hofstede, n.d.a). An indulgent culture is more likely to seek immediate gratification of desires related to enjoying life, while a restrained culture seeks to control whims and impulses through strict social norms and a sense of duty outweighing a sense of needing immediate personal gratification (Hofstede, 2011). As shown in the following figure, the United States is a very indulgent culture, while China is a very restrained one. Germany falls somewhere in between the two but leans more toward restraint and duty than indulgence and personal gratification.

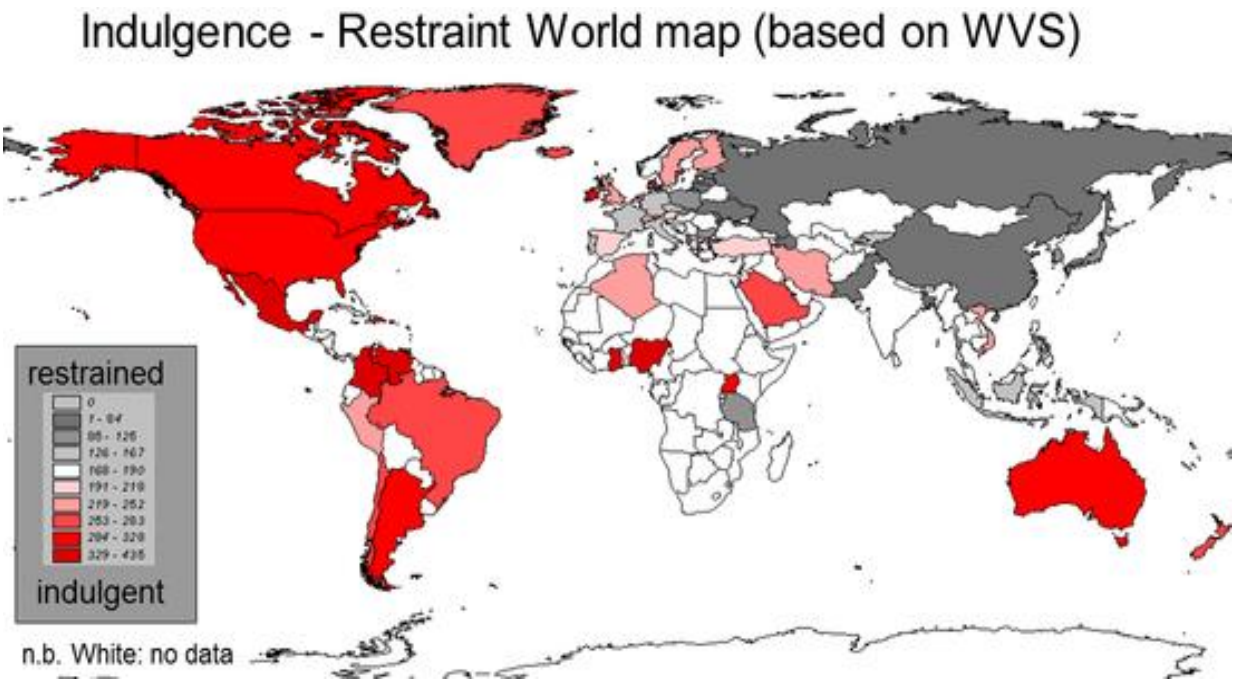

Figure 6: Hofstede's World map of the Indulgence-Restraint spectrum (Hofstede, n.d.a)

In relation to the Personalization-Privacy Paradox, the high indulgence countries and cultures would be more likely to highly perceive benefits of personalization and therefore be more likely to accept having to give up some privacy to gain those. It is more important to an individual in an indulgent culture to receive the instant gratification and benefits of a personalized service or personalized advertisement than it is to protect one's private data—a more duty-based and restrained approach. Following that, individuals in a more highly restrained culture would be less likely to participate in a personalization service if it means giving up privacy, because he or she is less focused on instant gratification and more focused on the duty of keeping oneself and one's private information and data safe. Highly restrained cultures can also be expected to view persuasive marketing geared toward showing how a new service might gratify personal desires less favorably (LaBrie et. al, 2018).

Each one of the six cultural dimensions has a bearing on how individuals in a given culture view privacy, personalization, and the interplay between the two. To best see the effects these differences have in action, this paper will examine three countries from three different regions of the world with vast differences in culture. While all three countries examined are at the forefront of the world's economy and advancements with regards to both personalization and privacy, their substantial differences in culture alter how individuals in the culture view the subjects of personalization and privacy.

Case Studies by Country

In order to gain a better understanding of how Hofstede's dimensions of culture affect how multinational companies market their personalized services and legally and ethically deal with data across those countries, this paper examines three major countries from different cultural settings and circumstances around the world: The United States, Germany, and China. Using Hofstede's dimension scores for these three countries, along with an overview of relevant laws connected to privacy and personal data usage, this paper investigates three case studies of how a multinational company attempted to implement personalization services in one country, whether it was accepted, and if the company should have done something differently to better match the culture and laws. Hofstede's numerical scores for each index of culture range from 0-100, but they are not distributed equally, and a small number of countries actually exceed the 0-100 continuum (Hofstede, n.d.b). With regards to cultural dimensions, this paper attempts to shy away from assigning set "positive" or "negative" markers toward adoption of personalization services depending on what side of the scale a country's culture lies

on, and instead focuses on how the differences shift the strategy of marketing and designing those services.

The United States

The United States is a vital country to examine for multiple reasons, including its global dominance in terms of economy and technology. Additionally, the United States has a massive userbase for relevant applications and services and a unique culture with scores in a few of Hofstede's dimensions that tend to the extremes. Finally, the United States has relatively relaxed and "firm-centric" privacy protection laws.

Cultural scores.

Femininity-masculinity. As shown in table 1, the United States ranks a score near the median in terms of the Femininity-Masculinity spectrum, a 62 (20th out of 78), ranging toward the Masculine end (Hofstede, n.d.b). As previously mentioned, Lowry, Cao, and Everard (2011) suggest that this tendency would cause individuals in the United States to value things like work goals, competitiveness, and material possessions more highly than good working relationships and quality of life. Due to the United States' score in this index, firms looking to operate personalization services in the United States must be aware that individuals in the United States' culture will generally tend to be more accepting of giving up private information to achieve work goals or somehow "get ahead" of competition. Therefore, the marketing of the personalization service should emphasize the benefits of the service in terms of achievement and advancing in work goals and should not have to worry as much about attempting to mitigate concerns regarding the costs of loss of good working relationships or cooperation.

Uncertainty avoidance. As indicated in table 1, the United States ranks with a lower-end score of 46 (66th out of 78) in the uncertainty avoidance index measure. This number places it near the lower end of the range of all countries in being tolerant of uncertainty even though 46 is near the middle score of 50, as the scoring is not evenly distributed from 0-100 (Hofstede, n.d.b). With the United States culture's relatively low level of uncertainty avoidance comes a higher tolerance for risk-taking, especially should the potential benefits be clear. For companies or applications wishing to offer personalized services in the United States, this measure of the United States' culture is another positive note for marketers, personalization designers, and privacy safety designers. In the more uncertainty tolerant United States culture, individuals are less likely to worry about the future uncertain ramifications of giving up a bit of private information in exchange for a better user experience through better service or better personalized advertising.

Power distance. As exhibited in table 1, in the United States, power is distributed very evenly compared to many other cultures, and this is reflected in Hofstede's power distance score of 40 (62nd out of 78) for the country (Hofstede, n.d.b). The United States' lower power distance score suggests that individuals are not used to being in the power of people "above" them in social hierarchy and see those people more as peers than deserving superiors. Therefore, the individuals will tend to be less comfortable with giving over private information to those peers than individuals used to having others in power over them would be giving information over to deserving superiors. For companies looking to implement personalization services in the United States, this information can be vital to understand because it means that the marketers will have to focus on assuring potential consumers of the personalization service

that even though they are not superior and do not automatically command trust, they can still be trusted to safely and responsibly handle the consumer's private information.

Collectivism-individualism. As shown in table 1, the United States ranks extremely highly in terms of individualism with a score of 91 (1st out of 78) (Hofstede, n.d.b). In the United States' individualistic culture, personal achievement and individual success are highly prized and individuals are encouraged to pursue actions that have the chance of gaining them individual achievement. Additionally, decision-making in the United States' individualistic culture is generally done on an individual (or near-individual) scale with more thought devoted to how it will affect that individual positively or negatively than is devoted to considering ramifications for any group (with the exception of immediate family or close friends, perhaps). For companies looking to implement personalized services in the United States, knowing the United States' culture's score in this index is vital. The United States has one of the most individualistic cultures in the world, so the tendency of individualistic cultures to devalue information privacy in exchange for higher values on "getting ahead" socially or economically as an individual are just amplified in the United States. In a similar concept to how marketers should treat the masculinity tendency in the United States, because of the United States' exceptionally high individualism score marketers should focus on advertising the benefits of using their personalized service and the possibility of "getting ahead" economically or socially as an individual and the possibility of individual accomplishment stemming from benefits related to using the personalized services.

Long-term orientation. As presented in table 1, the United States ranks low in terms of long-term orientation with a score of 26 (71st out of 96), meaning it is a country that is more

short-term oriented (Hofstede, n.d.b). In this type of short-term oriented culture, the average individual in the United States is more focused on themselves now, attempting to stay up to date with the current trends and technologies and socially spending and consuming in order to maintain a social standing. For these individuals, benefits now outweigh potential future benefits, and costs in the present carry more weight than potential costs in the future. For companies attempting to implement a personalization service in the United States, this measure should be understood in order to make informed decisions about how to market and design the service. A culture like that of the United States is very focused on the present and being socially respected in the present. Trying to entice an individual to use a service with promises of great benefits in the distant future will likely be ineffective, and short-term costs will be more important to downplay than long-term costs.

Indulgence-restraint. As shown in table 1, the United States skews toward indulgence rather than restraint, with a score of 68 (18th out of 97) (Hofstede, n.d.b). Indulgent cultures somewhat correlate with short-term oriented cultures (Hofstede, 2011, p. 15), and share some of the same values. Indulgent cultures like the United States tend to allow more freedom to pursue personal happiness in the present, rather than imposing social norms like feelings of duty toward working only for the goals of your social group or working only toward the future as restrained cultures tend to do. For companies looking to implement and roll out personalization services in the United States, there is a lot of similarity with knowledge of best practices related to the United States' short-term orientation. Individuals in the United States' indulgent culture are likely to respond well to marketing emphasizing immediate benefits related to personal happiness and will be more likely to adopt the personalization if the

benefits are shown in this light. Following this train of thought, marketers should downplay immediate costs that would cause an adopter to lose happiness in the immediate term, and don't have to worry as much about dealing with future benefits or costs.

Table 1

The United States' scores in Hofstede's dimensions compared to the rest of the world.

	Femininity-Masculinity	**Uncertainty Avoidance**	**Power Distance**	**Collectivism-Individualism**	**Long-Term Orientation**	**Indulgence-Restraint**
Highest	110 *(Slovak Republic)*	112 *(Greece)*	104 *(Slovak Republic & Malaysia)*	91 *(United States)*	100 *(South Korea)*	100 *(Venezuela)*
Lowest	5 *(Sweden)*	8 *(Singapore)*	11 *(Austria)*	6 *(Guatemala)*	0 *(Puerto Rico)*	0 *(Pakistan)*
Average	49.27	67.64	59.33	45.17	45.96	45.90
United States Score (+/-)	**62 (+12.73)**	**46 (-21.64)**	**40 (-19.33)**	**91 (+45.83)**	**26 (-19.96)**	**68 (+22.10)**
Ranking	20th *(out of 78)*	66th *(Out of 78)*	62nd *(Out of 78)*	1st *(Out of 78)*	71st (*Out of 96)*	18th *(Out of 97)*

Table 1: United States index rankings compared to world (Hofstede, n.d.b)

Relevant Laws. The United States has considerably few universal regulations in the way of protecting personal data privacy. In place of the universal regulations, the United States' data privacy regulation is made up of a patchwork of some federal laws and regulations and separate and different state regulations (Lake, 2017). Each state, therefore, can have different

amounts of regulation and different regulation on specific industries, as they have different state regulations building off of the minimal federal universal regulations. Additionally, in many cases companies are essentially expected to self-regulate their data practices (Lake, 2017). This self-regulation can easily lead to problems if corruption takes hold in a certain company, as there are not external auditors to ensure their compliance, and they are expected to self-regulate but not forced to. In fact, in the United States many problems stem from the idea of self-regulation, as in many cases potential issues are not even discovered until they become a scandal, such as the recent scandal with Facebook and Cambridge Analytica where it came out that Facebook did not properly self-regulate their users' personal data, instead letting improperly vetted third-party sources like Cambridge Analytica have access to it (Lapowsky, 2019).

Nothing Facebook did technically broke any United States personal information privacy laws. The relevant laws in the United States are minimal in scope and companies like Facebook have used similar practices for years without action by the United States government to stop it (Rich, 2018). With the United States' emphasis on self-regulation and lack of laws enforcing even basic standards, it becomes possible for scandals like Facebook's interactions with Cambridge Analytica with United States' customer personal data to occur. For the United States, it shows that simply because something is currently legal with consumer personal data does not mean that the United States' culture regarding beliefs about what is ethical and right to do with personal and private data will be in favor of it. It can be vital for a company to go above and beyond simply what is legal in terms of their data protection standards to match the

culture's beliefs and ethos regarding how personal data and privacy protections need to be handled.

It is hard for the United States to pass general and universal data protection regulations at the federal level because despite whether the people want more federal data protection, there will always be those arguing against the passage because of stricter regulations being hard on businesses and particularly hard on small businesses (Sacks, 2018).

Company Case Study. In terms of a case study for how a company alters its data protection standards to fit with the laws and culture of a nation, the United States represents a bit of a problem. For the most part, companies have freedom to do whatever they would like (within reason) to process, store, sell, or use personal data to create personalized advertising and personalized services. Additionally, many of the companies looked to as case studies for personalization and privacy such as Google and Facebook are based in the United States, built their services in the United States' culture, and are run by American individuals. Because of this, their practices are already optimized for the United States' culture at their base level, and do not have to be altered to better fit that culture.

The one main requirement is that there exists a terms and conditions of service which consumers must agree to, but there are two main problems with this standard. First, the primary function of a terms and service agreement is to prevent legal recuperation from consumers for the company operating as standard, as they can point out that the consumer technically agreed to the terms and conditions of use and the company did not violate its own privacy policy (Masnick, 2012). Second, according to Forrester Research, less than 1 percent of visitors to six major online travel sites during April 2001 actually read privacy policies (Regan,

2001). Additionally, this research is dated, and the internet has only become more used as time has passed, with users having to interact with many more privacy policies. In fact, to read all of the privacy policies a typical internet user has to deal with on a yearly basis in 2012 would take 250 hours, or 30 working days (Masnick, 2012). The United States, then, with its minimal standards and higher focus on self-regulation operates as somewhat of a "baseline" to then compare to how companies operate domestically. A multinational company such as Google, for instance, changes their operating and data use and protection standards to fit with other culture's ethos and other country's laws.

Germany

Germany is another exemplar country to examine. Due to its leadership position in the European Union, Germany is a massive hub of economy, technology, and application/service userbase. The European Union also has a history of attention to relevant personal privacy issues—in some cases extending back into the 1800's (Krause, 1965). Furthermore, the important new privacy regulations implemented in the European Union along with Germany's interesting cultural scores in Hofstede's dimensions make it a useful and intriguing case study.

Cultural Scores.

Femininity-masculinity. As shown in table 2, Germany scores similarly to the U.S. with a 66 (14th out of 78) on the masculinity index (Hofstede, n.d.b). If only this measure were accounted for, this highly masculine culture would be considered by Lowry, Cao, and Everard (2011) to evaluate benefits and costs related to personalization and privacy similarly to the United States. They would argue that German culture tends to value work goals, competitiveness, and material possessions more highly than good working relationships and

quality of life. With this score and ranking in mind, companies looking to roll out a personalization service in German would do well to keep in mind the German culture's values for competitiveness and getting ahead in work and highlight how their service might aid the German individual in those goals.

Uncertainty avoidance. As exhibited in table 2, Germany scores a 65 (44th out of 78) in Hofstede's uncertainty avoidance index (Hofstede, n.d.b). This ranking shows that the German culture is a little more reticent to take risks and require more potential benefits to consider the risk as a viable option. Germany is still near enough to the middle that this cultural norm is not drastic, but it is worth consideration by companies looking to implement personalization services. Such firms have to realize that individuals in the German culture are less likely to be open to things that seem riskier than are individuals in the United States, and an approach to marketing or design that is effective in the United States might not be as effective in Germany.

Power distance. As shown in table 2, Germany scores a 35 (67th out of 78) in the power distance index (Hofstede, n.d.b). Germany scores and ranks very low in power distance, suggesting a very level spread of power with a low distance between the highest and lowest levels. A low power distance insinuates a socially mobile culture, where people from the lowest levels can move up to higher levels of power relatively easily. For companies considering executing personalization services in Germany, this cultural index might represent a negative mark, as individuals even at lower levels in the German hierarchy do not believe that anyone is that much their better, and therefore might not be as comfortable with those "higher-tier" individuals having added authority over them through extra access to private and sensitive data, even when it is used for a positive service. Companies examining expansion or

implementation in German must keep this cultural index in mind and be sure to emphasize safety measures to keep abuse of private data suppressed.

Collectivism-individualism. As indicated in table 2, Germany scores a relatively high 67 (21st out of 78) in individualism (Hofstede, n.d.b). This index is especially important for companies based in the United States to understand, as their position as the most individualistic country in the world by Hofstede's measures can make it difficult to recognize the collectivist culture's mindset regarding thing that might be disagreed on. Even though Germany leans heavily toward individualism, a United States-based company might take it further in that direction with marketing and design and implementation than even a German individual is comfortable with. A company looking to roll out personalization services in Germany has to understand that the marketing cannot focus as much on individual accomplishment and accolade as it does in the United States and must recognize that a German individual is also likely to want to understand how their choice will affect their social group and collective.

Long-term orientation. As shown in table 2, Germany scores an 83 (6th out of 96) in long-term orientation, marking them as one of the most long-term oriented cultures in the world by Hofstede's measures. From this, companies can assume that individuals in the German culture are more likely looking as potential decisions with a lens set to see the total long-term benefits and costs rather than the immediate benefits and costs. With this in mind, those companies might want to structure their deals more back-heavily than they would in the United States, a short-term oriented country. Companies looking to implement a personalization service in Germany must recognize this vast difference between the German culture and the

culture of short-term oriented countries like the United States. It is far more important in marketing to individuals in the German culture to emphasize long-term overall benefit than immediate benefit at greater long-term cost. Personalization designers must also keep in mind that the benefits of the personalization might not have to be as immediately evident as they would in the United States and can focus more heavily on overall benefit efficiency.

Indulgence-restraint. As shown in table 2, Germany scores a 40 (54th out of 97) on the scale of indulgence vs. restraint (Hofstede, n.d.b). Germany's score and ranking in this measure fall very near the middle, as they are a Western culture and Western cultures more typically tend toward indulgence, but within the group of Western cultures Germans have a reputation for being restrained and efficient even to a fault. Compared to the more indulgent cultures like the United States, German individuals are less likely to adopt a personalization service just for the immediate gratification and benefits and are more likely to be reserved and cautious and examine the personalization service from the lens of their perceived duty. It is important for companies looking at Germany as a potential expansion zone to understand that German individuals cannot be swayed by immediate gratification and fancy marketing as easily as individuals in more indulgent countries like the United States. Simultaneously, Germany's position in the middle of the scale makes their culture far more indulgent than countries like China on the low end of the indulgence scale, leaning much more heavily toward restraint and caution and not allowing promises of immediate gratification to influence their choices. So, companies coming from more restrained cultures can actually relax their standards with the German culture and offer more promises of immediate gratification than they are used to offering in their restrained home countries and cultures.

Table 2

Germany's scores in Hofstede's dimensions compared to the rest of the world.

	Femininity-Masculinity	**Uncertainty Avoidance**	**Power Distance**	**Collectivism-Individualism**	**Long-Term Orientation**	**Indulgence-Restraint**
Highest	110 *(Slovak Republic)*	112 *(Greece)*	104 *(Slovak Republic & Malaysia)*	91 *(United States)*	100 *(South Korea)*	100 *(Venezuela)*
Lowest	5 *(Sweden)*	8 *(Singapore)*	11 *(Austria)*	6 *(Guatemala)*	0 *(Puerto Rico)*	0 *(Pakistan)*
Average	49.27	67.64	59.33	45.17	45.96	45.90
Germany Score	**66 (+16.73)**	**65 (-2.64)**	**35 (-24.33)**	**67 (+21.83)**	**83 (+37.04)**	**40 (-5.90)**
Ranking	14th *(out of 78)*	44th *(out of 78)*	67th *(out of 78)*	21st *(out of 78)*	6th *(out of 96)*	54th *(out of 97)*

Table 2: Germany index rankings compared to world (Hofstede, n.d.b)

Relevant Laws. It is important to look at German personal data privacy laws because one of the main modern advancements in personal data protection laws anywhere in the world is the European Union's implementation of the General Data Protection Regulation (GDPR). GDPR is what's known as an "omnibus" bill, meaning that it covers the total of data protection in one place rather than the United States' approach of patchworking together many different regulations that cover different topics. GDPR replace old and now obsolete data protection

regulations with new standards built for the modern, online, data-driven world, and applies to every member country of the European Union evenly. Looking at German privacy regulations must include GDPR, as not only was Germany and German culture's beliefs vital to implementing and passing GDPR with Germany as a key player in the EU, the GDPR standards replace and cover any pre-existing data protection regulations and provide a new standard base with which to view Germany and all of the EU member states.

GDPR establishes a new baseline for what is legally required of companies who handle the data of EU citizens, even if said company is not based in the EU (Voss, 2017). Some of GDPR's main provisions include the explicitly requiring transparency of processes rather than implicitly requesting it, limitations on the historical storage of consumer personal data not required for public interest, scientific, or statistical purposes, further requiring unambiguous consumer consent, and the establishment of new consumer privacy rights, including the "right to be forgotten" (Voss, 2017). The "right to be forgotten"—more accurately: the right to be delisted from search engines—protects an EU consumer's right to request that information online that is inaccurate, out of date, or irrelevant and not needed in the public interest be removed from search engine results (Fleicher, 2016). Google's practice is to remove the offending result from all European versions of Google's search engine (i.e. google.fr, google.co.uk, google.de) as well as using the location of the request to further restrict access to the offending listing from ALL Google search engine subdomains to any individual searching from within the country of the original delisting request (Fleicher, 2016). This last is actually an example of how laws and regulations can affect how a company alters its personalized service

practices based on the culture of a given country, as the results are different depending on which country and what subdomain of Google an individual searches the same term from.

Another important regulation for companies based outside of the European Union to understand with regard to doing business in the EU with EU consumers is that in order for EU citizen data to transfer to external companies, those companies must be registered and approved by the European Union as having "adequate" level of protection (Voss, 2017). This standard, which was part of the now replaced Data Protection Directive carries over into GDPR protections. Specifically, United States-based companies have to understand this provision, because there has been an interesting history of the EU finding United States data protections to be inadequate. In 1995, the EU did not consider the United States to have adequate data protection standards, and only in 2000 in an agreement called the U.S.-EU Safe Harbor agreement did the EU and the United States reach an agreement that if United States-based companies self-certified their compliance with EU regulations could personal data be transferred (Voss, 2017). However, in the 2015 legal case in the EU of *Schrems v. Data Protection Commissioner*, the courts ruled that the Safe Harbor agreement was inadequate and put a halt to personal data transfers to the United States (Voss, 2017). Quickly after (as numerous United States companies were scrambling after finding themselves suddenly without a huge consumer base of data), the United States and European Union agreed to a new deal, known as "EU-U.S. Privacy Shield" (Voss, 2017). This new deal much more explicitly laid out various requirements—including purpose limitations—that United States-based companies must meet in order for the EU to find them adequately safe for EU citizen's personal data to be transferred (Voss, 2017).

Company Case Study. In Germany, the Google search results might be altered based on cultural differences in personal information standards. Because Germany has in place more protections for consumer personal data, companies like Google have less data to work with when providing personalized services or selling consumer information to allow for personalized advertising. Additionally, being a foreign-based country, Google has to meet all of the standards for the EU-U.S. Privacy Shield to even be allowed to receive data from German citizens. Not only will Google searched provide different results based on being in a different country—the search term "football" will return very different results in Germany from what it returns in the United States (Slawski, 2008)—the search results will by necessity be less personalized to the individual searcher and be more general. Personal information that is protected by GDPR in Germany but not protected by United States laws can be used by Google to tailor results to the individual searcher in the United States, but for a German citizen searching using google.de or even google.com (should Google still have access to the IP address of the searcher for his or her general location and country of search) will not have as tailored of search results.

Search engines are forced in Germany to alter their practice in another way to fit with the German culture. Due to cultural sensitivities toward Nazism and generally inciting the people against a minority group, some results that might appear in a search in the United States must be censored in Germany. Yahoo as well as Google are forced to censor a search result leading to an anti-Semitic website when the search term "Jew" is searched in Germany, while it is not required to do so in the free search market of the United States (Grimmelmann, 2008).

Comparing the United States and Germany is useful but does not tell the whole story of cultural dimensions. While many insights can be gained from examining the differences when

many of the dimensions are similar, it is also vital to examine a country with substantially different scores. In order to keep the comparison as objective as possible, it is important to choose another country with equal or even greater global importance.

China

China might be the most important country to examine for multinational companies looking to expand their services and userbase internationally due to a massive and still growing economy and application/services userbase. That, together with its position in many of Hofstede's dimensions as a direct opposite to the United States and other Western cultures make it a captivating and essential case study for companies seeking to understand international cultural differences and how they might affect personalization services and privacy protection standards. As United States-based companies and other companies from cultures similar to the U.S. look to expand into China's massive market, they must be mindful of the vast differences between a Western culture and the Chinese culture to avoid failing in their market expansion.

Cultural scores.

Femininity-masculinity. As shown in table 3, China scores a 66 (13th out of 78) in the index of masculinity (Hofstede, n.d.b). China's score is equal to that of Germany's, and only slightly higher than that of the United States, meaning that many of the values of masculine cultures are shared across all three countries. Based on Lowry, Cao, and Everard's (2011) research, the more masculine Chinese culture also values work goals, assertiveness, competitiveness, and material possessions. However, it is important to note that just because these three cultures share similar scores on this one measure does not mean the cultures place

the same importance on this measure, and the culture's values based on this index must be examined in the light of the other indexes for a better understanding. For companies looking to implement a personalization service in China, it is useful to recognize the Chinese culture's standing on this index, but it must be noted that due to vast differences from the United States and Germany in other indices, identical approaches will still not yield identical results.

Uncertainty avoidance. As shown in table 3, China scores a 30 (72nd out of 78) in the uncertainty avoidance index (Hofstede, n.d.b). China's culture is much more tolerant of taking risks than is Germany's (44th) and is even more tolerant of risks than is the United States' (66th). This tolerance of risk possibly stems from the vast changes and growing that has happened and is still in progress in China, as well as the extremely high-level of competition leading to some risk-taking being more necessary. For companies looking to roll out personalization services in China, the Chinese culture's risk-tolerance makes marketing and design of implementation a bit easier, as the marketers do not have to downplay the risks of the personalization service as much as they might have to in a more risk-averse and uncertainty-intolerant culture.

Power distance. As displayed in table 3, China scores an 80 (14th out of 78) in the power distance index (Hofstede, n.d.b). This high power distance score and ranking indicate a large gap between the everyman and those in positions of authority, either in government or in private business. For this reason, Lowry, Cao, and Everard (2011) contend that individuals in higher-power distance cultures might be more open to personalization services due to being used to people in authority having access to personal information and power over the individual. From here, it is not a large leap to say that the individual in the high power distance culture can more easily be persuaded by marketers that the individuals in authority and power

in the new personalization service can be trusted the same as those preexisting sources of power and authority. For companies looking to implement personalization services in China, this is an extremely important point. It becomes fundamental to tie the people in charge of the new personalization services to the pre-existing, accepted, and to a certain extent trusted sources of power and authority. If those existing authorities are trusted, and marketers in the new company rolling out the new service can tie the new service to the pre-existing trust, the new service can much more rapidly become accepted and trusted even though the individual is within the power of a new agent.

Collectivism-individualism. As indicated in table 3, China scores a 20 (61st out of 78) on the Collectivism-Individualism index (Hofstede, n.d.b). China is a very collectivist culture, strongly differentiating it from the more individualist Western cultural tradition, most especially the exceedingly individualist United States. In the collectivist Chinese culture, an immensely lower importance is placed on individual achievement and individual accolade is minimal. Where in individualist cultures like the United States—and to a lesser extent Germany—individuals can feel free to make a choice that might benefit them individually, and any consequences will only fall on their own head, collectivist cultures like China operate more in terms of units. A group of individuals all work together toward an accomplishment, and none are awarded more accolade. Additionally, any negative consequences of a choice typically fall onto the whole group, and the one individual responsible might suffer the most egregious of collectivist fates: to be anathematized from the in-group and considered an outcast and part of the out-group.

For companies looking to implement personalization services in China, this might be the most important cultural index to understand, because of how vastly different the values in a collectivist culture are from the values in an individualist culture. It is especially important to understand for companies based in the United States, the most individualist culture in the world by Hofstede's measures. One would expect that nearly all marketing materials from the United States that are geared toward personal and individual achievement, accolade, and even risk must be altered to work well in the collectivist China, where the focus is on "we" rather than "I". However, a recent study by LaBrie et. al (2018) does cast some doubt on this. In their study, the results showed a surprising tendency in China to react positively to marketing geared toward the individual; even more positively than individuals in the United States. Still, until more research is done exploring this tendency—perhaps showing a growing movement of individualism in China—the safe choice for companies expanding into the Chinese market is to alter to focus on group achievement and accolade, as well as risk to the whole group. Beyond simply the marketing techniques, the implementation of personalization services should also recognize the cultural differences and focus on making the personalization services work for the group and the collective, rather than only the individual when looking to build a loyal userbase in the Chinese market.

Long-term orientation. As shown in table 3, China scores an 87 (4^{th} out of 96) for the long-term orientation index (Hofstede, n.d.b). Immensely more than the very short-term focused United States', and even more than the itself quite long-term focused Germany's, the Chinese culture is focused on the long-term. Chinese individuals typically will not look to immediate benefits or immediate costs but will rather examine a whole picture and see all the

benefits and costs both in the short-term and over the whole lifespan and take them together for any decision that must be made.

For companies looking to actualize personalization services in China, it is important to recognize that a focus on the short-term benefits and costs as might be effective in the short-term focused United States will not be nearly as effective in the Chinese culture, and marketing must be altered to reflect this difference. Rather than highlighting immediate benefits and how they may outweigh immediate costs, marketing material must instead underscore the totality of benefits and costs across the entire lifetime of the personalization service. Even if the short-term costs outweigh the short-term benefits, individuals in the Chinese culture will be able to look past that at the total benefits and costs where an individual from the United States might not. Based on the results from LaBrie et. al (2018), companies expanding into the Chinese market can trust in the tendency of individuals from that culture to be open to the future potential of technological advancements, rather than being innately distrusting of them. Beyond only the marketing of a new service, the actual implementation of the service can also change its focus away from frontloading benefits and backloading costs to a focus on total efficiency, total cost reduction, and benefit maximization over the whole lifetime of a personalization service.

Indulgence-restraint. As denoted in table 3, China scores a 24 (79^{th} out of 97) on the indulgence-restraint index (Hofstede, n.d.b). Unlike the very indulgent United States culture, and the middling German culture, the Chinese culture is respectively quite restrained. The Chinese culture's restrained and non-indulgent nature ties closely in with its long-term orientation, as individuals focus more on long-term goals and being reserved than indulging on

a whim for immediate benefits that might not be beneficial in the long-run. For companies attempting to roll out personalization services in China, this means that marketing does not have to focus as heavily on immediate gratification of desires and can instead focus on showing the long-term benefits over time. However, the persuasive marketing techniques should not be abandoned. LaBrie at. al (2018) presents results showing that the restrained Chinese culture does find that "persuasive marketing techniques increases[sic] consumer value" (p. 8). Additionally, the personalized service in China should be altered so as not to be as frontloaded with benefits as it does in an indulgent or short-term focused culture and can instead surely and steadily provide benefits evenly over a whole lifecycle.

Table 3

China's scores in Hofstede's dimensions compared to the rest of the world.

	Femininity-Masculinity	**Uncertainty Avoidance**	**Power Distance**	**Collectivism-Individualism**	**Long-Term Orientation**	**Indulgence-Restraint**
Highest	110 *(Slovak Republic)*	112 *(Greece)*	104 *(Slovak Republic & Malaysia)*	91 *(United States)*	100 *(South Korea)*	100 *(Venezuela)*
Lowest	5 *(Sweden)*	8 *(Singapore)*	11 *(Austria)*	6 *(Guatemala)*	0 *(Puerto Rico)*	0 *(Pakistan)*
Average	49.27	67.64	59.33	45.17	45.96	45.90
China Score	**66 (+16.73)**	**30 (-37.64)**	**80 (+20.67)**	**20 (-25.17)**	**87 (+41.04)**	**24 (-21.90)**
Ranking	13th *(out of 78)*	72nd *(out of 78)*	14th *(out of 78)*	61st *(out of 78)*	4th *(out of 96)*	79th *(out of 97)*

Table 3: China index rankings compared to world (Hofstede, n.d.b)

Relevant Laws. China is a curious country to examine with regards to data privacy protections and laws. In China, there is an interesting dichotomy between the regulations on private businesses regarding personal data, and how the government treats personal data of its citizens. With the totalitarian government system and the social credit system, along with heavy governmental involvement in companies, the government has access to a huge amount of personal data and uses it without having to be transparent in their processes or establish the unambiguous consent of the citizenry. Simultaneously, the Chinese government is moving forward with establishing data protection systems in a similar way to what the EU is doing with GDPR, though not with the exact same system.

In 2018, China rolled out a new national standard on personal information protection, detailing new regulations for user consent requirements as well as how personal data is collected, stored, and used (Sacks, 2018). The language of this standard is in fact more comprehensive with onerous regulation than even GDPR (Sacks, 2018). The new Chinese standard covers detailed requirements for establishing unambiguous user consent, de-identifying sensitive data, limiting “secondary uses” of data, and also increases security assessment standards for third-party vendors (e.g. what Cambridge Analytica was to Facebook) (Sacks, 2018).

The new standard is interesting also because much like the United States, there is an ongoing debate in the government between the citizens asking for more comprehensive protection standards while the businesses (specifically companies developing AI in China) push for more access to big data with less standards to make better advancement in their

developments (Sacks, 2018). The Chinese government, in passing these new standards, seems to have come down somewhat on the side of protecting the citizens at the cost of making AI research a bit harder for private enterprises, which is an intriguing precedent when the United States faces a similar predicament. This is an especially important precedent because while the Chinese government has regulated AI companies' access to big data, it has not hindered the government's ongoing support for AI projects. As Kai-Fu Lee discusses in his book *AI Superpowers* (2018), the Chinese government has enacted a "sweeping plan for becoming an AI superpower [pledging] widespread support and funding for AI research" (p. 18). This example shows that a government can support technological advancements while still enacting regulations to protect the privacy of its citizenry, and the United States government should take note of this.

Company Case Study. In China, Google's search results have a similar shift as Germany away from the practice in the United States due to actually protecting some consumer data and not allowing Google to personalize their service and sell as much personal data to advertisers as much as they can in the United States. However, above and beyond those differences China's culture presents a new problem to Google. In China, with the vast power distance and the totalitarian system of government, not all search results can be allowed in a free market of information as can exist in democratic countries like the United States and Germany. China's government has long kept a tight grip on information and mass media, not allowing dissent and using it to spread propaganda. However, with the rise of the internes the government of China was forced to implement "The Great Firewall of China" to attempt to restrict content and keep

their tight grip on restricting dissenting opinions and keeping them away from the masses (Qiang, 2011).

In order to do business in China, Google is forced by the Chinese government to abide by their censorship standards and restrict their search results to not show information the Chinese government does not want to reach the citizens. For example, a search of the word "Tiananmen" or the term "Tiananmen Square" in the United States will bring up many copies of the very famous image of a Chinese man standing in the way of military tanks attempting to break up a protest (Grimmelmann, 2008). However, in China this sort of result making obvious and praising dissent against the Chinese government cannot be allowed to reach the populous as a whole, and the results from the same searches are censored (Grimmelmann, 2008). This censorship reflects how a company like Google has to change its practices from how they operate domestically in the United States to fit with the culture in a foreign country, in this case a culture of unquestioning obedience toward the government.

Cross-County comparison of the United States, Germany, and China vs. the world.

In figure 10 below, each of the three countries explored as case studies of cultural variance (The United States, Germany, and China) are compared visually to the high, low, and average scores in all 6 of Hofstede's dimensions.

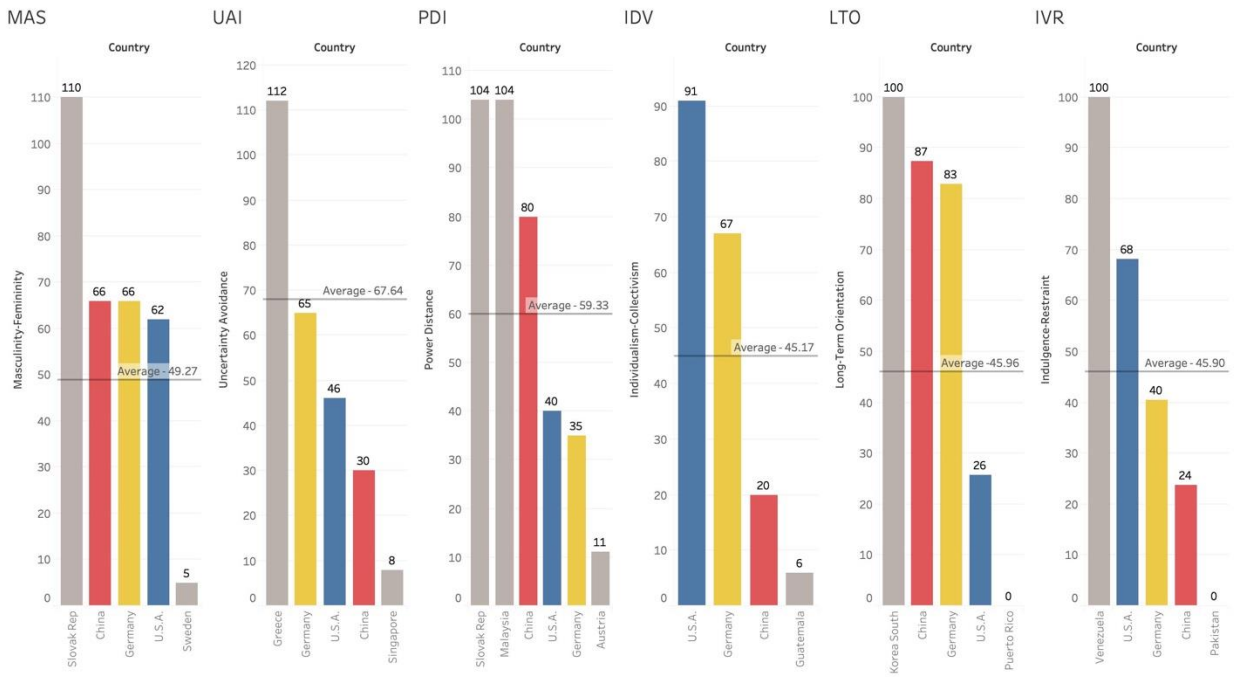

Figure 7: Comparison of China (red), Germany (yellow), and the United States (blue) vs. the High, Low, and Average Country scores in all 6 of Hofstede's Dimensions (data from Hofstede, n.d.b)

Discussion and Implications

The three countries discussed in this paper offer a good diversity in terms of scores in Hofstede's cultural dimensions. Even the more "Western" Germany scores more similarly to China than it does the U.S. in the Long-Term Orientation and Indulgence-Restraint measures, showing that surface similarities in a government's philosophy do not mean that a culture's different opinions can be overlooked. Where even in the more similar Germany a United States-based company must consider the implications of their marketing messaging and product design, those considerations must be performed at a much higher level if attempting to penetrate the Chinese market. The Chinese culture has marked differences from the U.S.'s

culture in the majority of measures (Power Distance, Collectivism-Individualism, Long-Term Orientation, and Indulgence-Restraint).

With this, and the knowledge that each of the measures has a relationship to how readily a culture will accept personalization at the cost of privacy, marketers must realize that individuals in the Chinese culture will react very differently to the same personalization or the same cost to privacy than individuals in the U.S.. Therefore, if a U.S.-based company attempted to implement a personalized service or allow personalized advertising within their product in the Chinese market without considering the implications of individuals reacting differently due to their culture, the U.S.-based company might quickly lose its presence in the Chinese market.

For a company looking to penetrate a new market by expanding into a new nation, all of Hofstede's dimensions must be accounted for. In many cases, the product or service itself might have to be altered to fit the culture's standards for privacy and desires for personalization. In some cases, though, much of the disparity in cultural reaction to the personalization services can be mitigated simply by altering messaging and focus of promotion. The goal of the messaging should be to maximize perceived benefits and minimize perceived costs with relation to this paper's model of privacy calculus in the specifically targeted culture.

To take an example of a U.S.-based company trying to roll out a personalized service or allow personalized advertising on their product in China, the similarities in culture can be noted, but the differences as shown in Hofstede's measures must change the strategy of messaging at the minimum, and at the maximum the product or service must be changed fundamentally to abide by China's laws.

A personalization service can still speak to the shared cultural goals of getting ahead in a culturally masculine world and it can worry only a little about messaging to uncertainty avoidance similarly in China as it does in the U.S.. However, this is where the similarities in terms of Hofstede's cultural dimensions ends. In the U.S. there is a lower power distance index, and therefore messaging to maximize the privacy calculus in the minds of the consumer has to focus on minimizing the worries about figures in authority having access to sensitive information. However, this messaging will be a waste of resources in China where such things are more tolerated with the higher power distance index. One of the biggest differences in messaging will stem from the massive difference between the U.S. and China in the Collectivism-Individualism dimension. Messaging in the U.S. to maximize the privacy calculus in the minds of consumers to convince them to adopt a personalization service will not have to focus on the collective and can focus almost entirely on individual benefits and advances. In China, the messaging must change to account for the much higher value placed on the collective good. A similar difference will occur with the Long-Term Orientation dimension, where messaging in the United States will not have to focus on consumers' worry for the long term, but in China the culture is far more oriented toward the long-term and the messaging to maximize privacy calculus must take that into account. Finally, for the dimension of Indulgence-Restraint, there is a significant difference between the U.S. and China. The culture of the United States is far more indulgent, and messaging in the individualistic U.S. can take advantage of that while it would be an ineffective strategy in the more restrained China.

Conclusion

The Personalization-Privacy Paradox understood through a privacy calculus signifies that consumers, when faced with a decision of whether to adopt a new personalization service at the cost of giving up access to some personal, perhaps sensitive, information perform a sort of cost-benefit calculation in their head. These costs and benefits however, are not static or universal. The costs and benefits as perceived by any given individual will be shaped by that individual's culture, as well as the laws of that individual's country. In order to effectively encourage adoption of the personalization service, the company implementing it must understand how to maximize perceived benefits while minimizing perceived costs. As shown in this paper through a thorough examination of three very different, but all important and influential countries with huge consumer bases this necessity of maximizing perceived benefit and minimizing perceived cost is no easy task. No universal approach will do for a company attempting to roll out their personalization service across nations and cultures, as the cultural values and country's laws are vastly different depending on which country the company looks to. In order to effectively maximize adoption rate of a personalization service, the company must have a full understanding of a country's laws, as well as a culture's values, perceptions, and ethos, and must adopt an approach to marketing, implementation, and design of service fitted to that particular culture.

Limitations and Future Research

This paper is limited by the ongoing discussions related to these and similar issues, which prevent terms such as privacy calculus from having fully agreed upon definitions. With privacy calculus, further research could be done using a different definition or a different equation entirely to measure the Personalization-Privacy Paradox.

This paper is further limited in its scope by only examining three countries as case studies for the interactions of Hofstede's Model of Cultural Dimensions with the Personalization-Privacy Paradox. Further research in this vein could apply the same methods used in this paper to other countries. This would support and build upon the premises and conclusion of this paper and allow for interesting case studies to be performed.

This paper is additionally limited by its reliance on only one method of stratifying cultures, that being Hofstede's Model of Cultural Dimensions. Further research on this paper's topic could be conducted examining the relationship of the Global Leadership and Organizational Behavior Effectiveness (GLOBE) (Hoppe, 2007) model of stratifying cultural differences to the issues of the Personalization-Privacy Paradox. The GLOBE model does not replace Hofstede's model, but rather expands on it, focusing more on the contextuality of effective leadership in different cultures. Future research should both examine the relationship of the personalization-privacy paradox with the GLOBE model, but also the interplay of the GLOBE model with Hofstede's model when it comes to the issue.

Some research studies, including Cui, Chan & Joy (2008) and the more recent LaBrie et. al (2018) have cast doubt on assumptions of how cultures like the United States and China—with their relatively extreme differences in cultural scores in Hofstede's model—will react to various stimuli in marketing. While China ranks as a highly collectivistic culture in Hofstede's cultural model, individuals in China have shown positive attitudes to persuasive marketing, something that is typically expected to perform better in individualistic cultures. Further research could be done into this seeming oddity in China's culture as compared to the United States.

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Appendices

Appendix 1: Relationship Between Faith and Learning

My worldview as a Christian is the most important aspect of my life. It influences everything else in my life, and acts as the worldview lens through which I see. I don't believe that my faith should be separated from the other aspects of my life, with Sunday Kellen at church being a different kind of person with different beliefs and different ways of viewing things to weekday Kellen. I believe therefore that all aspects of my life, my relationships, my hobbies, my outlook, and even my future career and current studies should be actively involved with my faith, and I should see them through the lens of my Christian worldview. As a college student actively involved in studies of the world, I am considered a scholar. But I am also a Christian who cannot separate my scholarship from my worldview. This, I believe is the most important point. I cannot, nor can anyone else, separate their scholarship from their worldview and who they are.

To understand a person's worldview, the obvious first step is to explore their upbringing. With faith and religion this first step is no different. In order to understand my faith today and how it interacts with my life today, it is necessary to explore my upbringing as a future scholar and my upbringing in faith. I was raised in a middle-class home in Newberg, Oregon—a suburban college town whose primary importance is the presence of George Fox University—actively attending Newberg Christian Church. Newberg Christian Church is a non-denominational church of about 1,500 attendees, though in general attendance is lower (around 500-750 people per Sunday, 100-250 per service) except for Easter and Christmas services. Basically, it is a very typical non-denominational church in a small suburban town. I

followed the very typical path of going through the children's ministry from pre-school to about 6th grade, and then "graduated" to attending adult services on Sunday mornings.

During the Sunday School years, not much attention was paid to how faith related to scholarship (for somewhat obvious reasons), but I suppose it did teach an innate belief in the truth of the teachings, which were later expounded and built upon by my future studies. The Sunday preaching, however, also did not focus much on the relationship of faith to study or scholarship, instead following the safe, applicable, and typical path of preaching on how to act in general as Christians who believe in the truth of the Bible.

Most of my relationship to learning in school and study, therefore, came from my parents. Both of my parents are college graduates and are very smart people. They made a point I think to instill in me and my two siblings (one older and one younger) a desire to learn and grow and do well in our schooling. I believe that their general encouragement to do well instilled in me an affinity for doing well in my studies, though I can't remember a specific instantiating event for my affinity. For as long as I can remember doing well in scholarship and schoolwork has come fairly naturally and easily to me. I do think that my parents' decision to homeschool from 2nd grade through high school was the most beneficial decision they could have made with regards to my education and offered ample opportunities to discuss with them the intersection of my faith with the scholastic principles I learned.

My parents fortunately are also not the kind of people to sit back and let their children's faith be *only* taught by a Sunday School teacher or the pastor. They have always made a point of teaching their children the truth of Christianity and teaching it more thoroughly and at the intellectual level of their bright children (rather than the one-size-fits-all approach of Sunday

School). They always spoke about the intellectual reasons for Christian faith and encouraged us to ask questions. To them, it was only natural that their children be both smart in the terms of the world *and* faithful, without the two needing to conflict.

As I grew older and continued to attend Newberg Christian Church, my parents and older brother became somewhat disillusioned with the non-denominational church and Protestantism in general for not being intellectually or theologically deep enough and lapsed in attendance. However, I had become actively involved in the youth group and had developed many friendships at the church, so I continued my attendance to Sunday services and youth group. The youth group at Newberg Christian Church seemed to offer the best chance for deep discussions of faith and how it relates to schooling and learning, but it, like the Sunday service, focused more on general principles of how to act as a Christian, not focusing much on how our faith and our learning intersected. Even through these teen years when my parents' attendance at church every Sunday had somewhat lapsed, they were still strong Christians and the discussions of faith and learning still happened and became deeper as I grew up and learned more.

When I started attending SPU and became a part of University Scholars, I felt like I fit right in, as the school's discussions of faith and scholarship and the USCH program's focus on rigorous academics were exactly what I was used to from my parents' homeschooling and discussions of faith. I maintain that joining the USCH program is one of the best decisions I have ever made, not just because of the lifelong friendships I have developed through the program, but because of the academic discussions and the discussions of how faith and scholarship interact.

After I started attending SPU, my parents and older brother found the Greek Orthodox Church after seeking a different denomination due to their dissatisfaction with Protestantism (my younger sister still regularly attends Newberg Christian Church, though she will also attend the Orthodox services on occasion). Their faith has deepened, and they have found a spiritual home with Greek Orthodoxy and have been baptized anew into the Orthodox Church.

Since I started at SPU, I have also found my own dissatisfactions with non-denominational Protestantism and have begun seeking a new denomination of Christianity myself. My family has not actively tried to convert me to Orthodoxy but have always encouraged me to ask questions about the relatively little known (in America) sect. I truly believe that Orthodoxy should be better known in America and SPU could do a great service to students by more often including it in the University Foundations classes. While in UFDN 3100 we did read Bishop Ware's *The Orthodox Way*, mostly we read sections dealing with responses to Catholicism and I found myself having to ask specifically for Orthodoxy's view on issues when the professor would only mention Catholicism's and Protestantism's. Through my personal journey, including my research paper for UFDN 3100 dealing with the sacrament of communion I have developed a deep appreciation for the Orthodox church but am still actively looking for a denomination and sect of Christianity that I believe to be right. I feel as though I am at a crossroads between diving into the Orthodox Church and staying a Protestant, albeit finding a new denomination such as Lutheranism, Anglicanism, or Methodism. One consideration that has gone into my decision is how each sect views scholarship. In my view, non-denominational Protestantism doesn't incorporate their faith into other parts of their life as well as other sects.

To me, it is incredibly important that the Christian sect I find properly defines the interaction between its faith principles and the relationship its members have with the world. As someone who is a scholar, I can't be a part of a faith tradition that devalues learning about the world. However, as someone who is strongly Christian, I also can't fully dive into the secular culture that tells me that my faith is delusional. Therefore, finding the proper balance is immensely important to me. I feel as though the non-denominational tradition I grew up in somewhat lacked the proper balance, being too easily the religion of those who go to church occasionally on Sunday but don't really let their faith influence the rest of their life in their studies or career. I fear that if the relationship my Christian faith doesn't have enough bearing on my career or scholarship, I'm not approaching it with the worldview of my faith. However, as George Marsden puts it, "Scholars do not operate in a vacuum, but rather within the frameworks of their communities, traditions, commitments, and beliefs" (Marsden, 1997). If it is not my Christian community, tradition, commitment, and belief that is the lens through which I view my scholarship, it is likely the secular lens of the world. I don't believe that the non-denominational background I grew up in properly emphasizes Christian beliefs or tradition in the lives of its parishioners outside the walls of the church on Sunday mornings.

In my journey towards the faith tradition of my future, one particular thing that has stuck out to me is the idea of analogical thinking. Analogical thinking and imagination imply that "the world is a vast web of connections upon connections. Thus, faith and learning do not have to be brought together (as if they existed in separate spheres); one needs only to discover the connections that already exist between them" (Jacobsen, 2004). The Jacobsens' book speaks of analogical imagination when discussing the Catholic tradition of faith and scholarship, but it is

not exclusive to Catholicism. I do believe in the "unity of truth" (Jacobsen, 2004) when it comes to faith and reason, where "reason, when it is operating properly, leads one to faith, and faith, when it is operating properly, drives one to reason" (Jacobsen, 2004), but I believe other faith traditions such as Orthodoxy and some Protestant traditions such as Lutheranism and Wesleyanism also to some extent believe in this analogically imaginative view of faith and reason.

As I discussed earlier, one of the most important factors to me is the ability of a faith tradition to extend beyond the walls of the church into every aspect of life. In *Mountains Beyond Mountains*, Tracy Kidder quotes Todd McCormack calling Partners in Health "Paul's Catholic Church" (Kidder, 2004). While this doesn't necessarily refer to Paul Farmer's actual faith background, the idea of this saying is that Farmer's beliefs extend so far that he would create Partners in Health because he believes so strongly in the principles of helping those in need. I believe that the Christian tradition and sect I eventually settle on should inspire this same kind of fervor for its Christian beliefs. It should be the kind of place where the attendees aren't lukewarm Christians, but the kind of people who truly live their faith and principles.

I am a Business Major, planning on entering the tech field. On first glance it would seem that I won't have much call to live my faith through that. But I have taken a Business Ethics class at SPU, and we discussed all that quarter how our faith affects our moral and ethical beliefs and decisions. My Christian faith cannot be locked behind the walls of a church, only taken on as a mantle on Sunday mornings. My faith needs to interact with reason analogically—both together leading to truth and interacting the whole way. And I need my faith tradition to define how its beliefs and traditions interact with the world and my career and my scholarship in the

future, to avoid the trap of falling into the secular worldview in the stead of my Christian one. The questions of how a sect's traditions and beliefs interact with the world, how the sect views the interaction of faith, reason, and unifying truth, and how the sect encourages living the faith beyond the walls of the church buildings will be foremost in my mind through my continued search for a faith tradition that I can call home.

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Appendix 2: An amazon.com email advertisement personalized based off of a user's search history and patterns

From: **Amazon.com** vfe-campaign-response@amazon.com
Subject: [redacted]
Date:
To:

A

amazon prime

Your Amazon.com Today's Deals See All Departments

Hello [redacted]
Are you looking for something in our Novelty Lighting department? If so, you might be interested in these items.

Novelty Lighting

Tingkam Led Strip Lights Kit 32.8 Ft (10m) 300leds Waterproof...
by Tingkam

Price: **$28.89** prime
Sold by Tingkam and Fulfilled by Amazon.

Learn more
Add to Wish List

Ikea Linnmon Desk with Adils Legs for Multi Purpose 47 1/4"x23...
by IKEA

Price: **$89.25** prime
Sold by KMY Discounters LLC and Fulfilled by Amazon.

Learn more
Add to Wish List

Tingkam 5050 SMD 32.8ft 10m RGB Flexible LED Strip Light Kit...
by Tingkam

Price: **$30.69** prime
Sold by Tingkam and Fulfilled by Amazon.

Learn more
Add to Wish List

Tingkam Led Strip Lights Kit 32.8 Ft (10m) 300leds Waterproof...
by Tingkam

Price: **$36.39** prime
Sold by Tingkam and Fulfilled by Amazon.

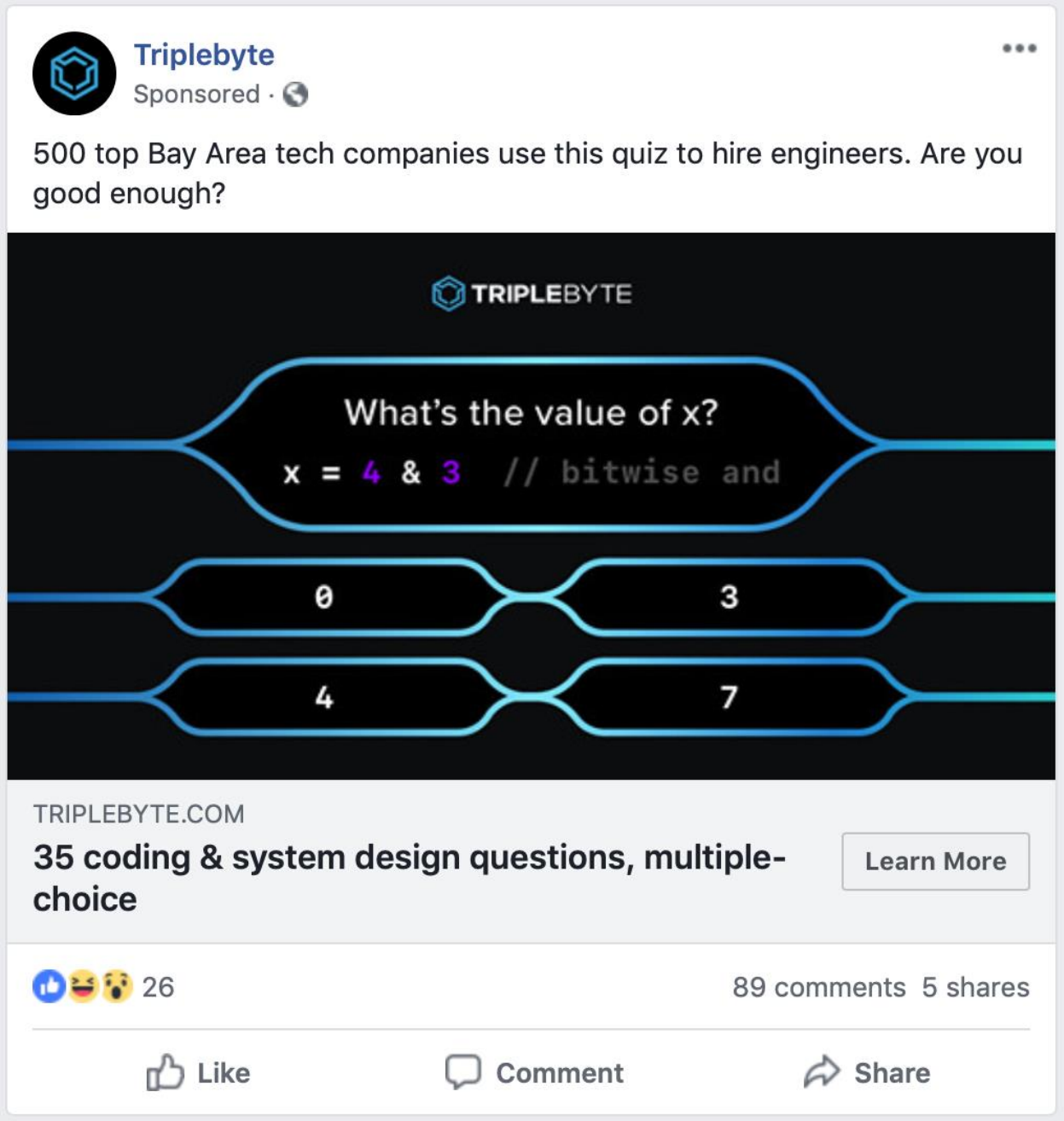
Learn more
Add to Wish List

Tingkam 1M 5050 RGB Colour Changing LED Strip Kit 44 Key...
by Tingkam

List Price: $12.99

Learn more
Add to Wish List

Appendix 3: A “Sponsored” post on a user’s Facebook Timeline



Appendix 4: A Post on a user's Facebook Timeline chosen because it is "Similar to posts" the user has previously "interacted" with

Appendix 5: A Post on a user's Facebook Timeline because one of the user's friends was tagged in it by a third-party