Geofencing – Enhancing the Effectiveness of Mobile Marketing

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A B S T R A C T

With the increasing market penetration of smartphones and the emergence of high speed wireless data transmission technologies, the global advertising industry is highly interested in using the mobile channel for marketing purposes. Despite the increasing number of companies now spending more money on mobile marketing than on any other marketing channel, the nature and characteristics of this channel implicate limitations. Underlying research shows that consumers' acceptance of the mobile channel for promotional purposes is closely linked to the personalization and the situational relevance of presented content. This work project addresses the issue of consumer acceptance and demonstrates, how Geofencing can enhance the effectiveness of mobile marketing campaigns.

Keywords: Mobile Marketing, Consumer Acceptance, Customer Journey, Geofencing

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1.   Introduction

Digitalization is changing society. Forecasts indicate that by 2018 more than a third of the world's population will use smartphones (eMarketer, 2014). Their rapid ascent in recent years revolutionized the public use of the internet. Mobile data and Wi-Fi hotspots guarantee flexible internet usage, independent of location and time, allowing the user to be "always on". The world goes mobile! Smartphones are always in reach and an inherent and personal part of everyday life. They are increasingly becoming the media and communicative center of society. On average, users spend 81 minutes per day on their smartphone (defacto digital research, 2015b).

In the last years, mobile marketing has become an essential part of companies' marketing mix. Forecasts show that mobile internet will replace stationary internet as the most important advertising medium, in 2017. Advertisers worldwide will spend US $ 99.3 billion on mobile advertising compared to US $ 97.4 billion spent on desktop advertising (Zenith Opti Media, 2016). However, companies have not yet taken full advantage of the potential of mobile marketing. Mobile communication presents the capability to reach potential customers with target audience specific and personalized content and even geographical relevance. Geofencing is one of the most anticipated trends in this field. It is an innovative technology introducing methods to increase the relevance of mobile advertisements. But what about the consumer? Does he prefer personalized advertisements on his smartphone? And can companies increase the effectiveness of mobile campaigns through Geofencing?

This thesis intends to answer the raised questions, by explaining the technology and fields of application of Geofencing and showing how their successful integration can positively influence the consumers' perception of mobile advertising.

2.   Methodology

This work project was developed in collaboration with the *defacto digital research GmbH* based in Erlangen, Germany. Secondary research was conducted to provide the reader with an essential understanding of the topic of mobile marketing. Subsequently, studies of defacto digital research were analyzed to identify the key issues of consumer acceptance towards mobile advertisements. Thereafter, the application of Geofencing is introduced consolidated by primary research in the form of expert interviews. Lastly, four cases are presented to exemplify the three dimensions of Geofencing.

3.   Literature Review

The following literature review introduces the general topic of mobile marketing referring to previous researches. To give a deeper understanding of the topic, objectives, instruments and limitations are presented. During the course of the chapter, studies reveal the issues of consumer acceptance leading to the investigation of unrealized potentials of the mobile channel.

3.1 Definition of Mobile Marketing

In literature, mobile marketing is assigned to mobile business as well as to mobile commerce. For a clear allocation, the three terms are defined initially.

Mobile business is a broader concept comprising the execution and support of business processes on mobile devices with the assistance of wireless data transmission technologies (Möhlenbruch and Schmieder, 2002; Wohlfahrt, 2001).

Mobile commerce is defined as a special form of electronic commerce including the initiation, arrangement and completion of transactions across mobile radio networks on mobile devices. In more detail, the definition is limited to the transaction itself meaning the purchase of goods via a mobile distribution channel (Turowski and Pousttchi, 2004; Wriggers, 2006).

Mobile marketing designates the process of planning, conducting and controlling all marketing activities utilizing mobile data transmission technologies on mobile devices to engage with the target audience (Holland and Koch, 2014). It becomes the interface between traditional marketing at or around the physical point of sale (POS) and online marketing primarily taking place on desktop computers at home. Thus, it represents the connecting link between real and virtual world.

Consequently, mobile marketing is subordinated to mobile business. Since this understanding includes all components of the marketing mix, it is applied in this work project.

3.2 Objectives of Mobile Marketing

The overriding objective of mobile marketing is the long-term satisfaction of consumer needs through mobile channels and to increase customer benefits. Furthermore, individualized offers and services intend to influence the purchasing behavior of the target audience (Holland and Koch, 2014). Therefore, mobile marketing aims at the following four key marketing and communication goals:

Customer Acquisition and Sales Promotion

The first key objective of the mobile channel is to arouse potential customers' interest. Due to the independence of location and time, consumers can participate in promotions or campaigns at any given time. In addition, mobile marketing intends to minimize divergence loss of customer approaches through target audience specific offers and context sensitive services (Wurster, 2010). Also, mobile marketing intends to influence the purchasing behavior of consumers at the point of sale, ultimately aiming for an increase in sales volume as well as in sales frequency (Holland and Bammel, 2006).

Customer Retention

The second key objective of mobile marketing is improving customer retention by enhancing customer satisfaction as well as prevailing customer deprivation (Holland and Koch, 2014).

Image and Branding

The creation or enhancement of specific brand or product images is the third key objective of mobile marketing. Companies and brands distinguishing themselves with actuality and innovational strength, can emphasize their positioning with mobile marketing as they are often labeled as modern and innovative, while engaging in this field (Holland, 2016).

Beyond that, the mobile channel can be used for rapidly increasing brand or product awareness due to its extensive coverage. Outstandingly inventive mobile campaigns can achieve a positive viral effect. However, caution is required as poorly executed campaigns can even-handedly result in severe image damage (Reust, 2010).

Market Research and Advertising Control

The fourth key objective of mobile marketing is the acquisition of information. Companies can increase their knowledge about consumers by gathering valuable information on them via the mobile channel. In the same way, the success of mobile marketing campaigns can be measured and assessed (Steimel, Paulke and Klemann, 2008).

3.3 Mobile Marketing Mix

After defining mobile marketing and illustrating the key objectives, strategies and activities are developed based on information on consumer behavior. Strategies and activities can be assigned to the four instruments of the marketing mix: product, price, place and promotion. Comparable to classical marketing, mobile marketing extends to all four instruments (Kuß and Tomczak, 2007). The interplay between them as well as the coherence within an instrument is from significant importance for a successful marketing mix. Subsequently, the executed strategies and activities influence the behavior of consumers. Their success can be reflected by market data such as sales figures and market share or determined through market research. Figure 1 shows that these insights can serve as the basis for adjustments of existing strategies or activities as well as a foundation for redevelopment (Holland and Koch, 2014).

Figure 1: Marketing Strategies and Consumer Behavior (Peter, Olson 1999, own elaboration)

The following paragraph illustrates the application of mobile marketing along the four instruments of the marketing mix.

Product

Product policy comprises all decisions concerning the products and services a company offers. In terms of mobile marketing there are two alternatives that can increase product involvement (Kuß and Tomczak, 2007). First, the creation of new mobile products available for sale intended for customer acquisition. Secondly, the development of add on-services for existing products fulfilling customer retention purposes. The most common form of mobile features or add on-services are smartphone applications (apps). For example, airline apps that provide useful information on airports, manage and alter bookings as well as hand over boarding passes to users. (Top8, 2015).

Price

Pricing determines all conditions and prices of a company's products and services. In addition, existing prices can be influenced through pricing instruments. In this context, the primary role of the mobile channel is to convey these instruments to the consumer via smartphone (Holland and Koch, 2014). Price differentiation can be sent in form of mobile coupons, discounts or digital credentials on consumers' smartphones which then allow to receive additional benefits at the POS. As they can be received on the go and redeemed immediately, mobile pricing instruments can have a strong influence on consumers' purchasing behavior and lead to impulse

purchases (Holland and Koch, 2014). Thus, they are a powerful tool for customer acquisition as well as for customer retention.

Place

All decisions concerning alternating distribution channels are attributed to place policy. As previously mentioned, using the mobile channel as a new distribution channel is defined as mobile commerce. Mobile commerce is neither location restricted nor time dependent and, therefore, a valuable addition to existing distribution channels. In general, the products and services offered through mobile shops on smartphones are the same as the offer of the corresponding online shop.

Promotion

As the fourth instrument of the marketing mix, promotion includes all activities to present and explain a company's brands, products and services to the target audience. Within mobile marketing this instrument plays the most important role and is, therefore, emphasized. Because of the personal characteristic of the mobile channel, it is not suitable for mass advertising but considerably more advisable for individualized dialog marketing (Holland and Koch, 2014). Keeping in mind the high degree of interaction, the mobile channel presents strong activation potentials (BVDW, 2013). There are four key fields of application that must be differentiated: mobile content, mobile advertising, mobile response and mobile promotion (Täubrich, 2006).

Mobile Content

In general, mobile content comprises mobile websites, apps, texts, images and videos, which are conveyed to the consumer via the mobile channel. Companies can create a mobile version of their websites optimizing the display of information and communication. Moreover, so-called mobile micro sites can be designed. Their scope is limited to a specific campaign or defined objective. Generally, the presented contents are more bold and edgy aiming to create

viral effects (Holland and Koch, 2014). The additional platform offers companies flexibility in content creation as the primary homepage does not require adjustments.

Another way of creating mobile content is by apps. Most mobile devices and smartphones come with pre-installed operating systems and programs. Users can extend the existing portfolio of functions by downloading and installing additional apps. Companies can create mobile content by either developing an own app or creating texts, images or videos designed to be placed in third-party apps (Holland, 2016).

Mobile Advertising

Like in traditional online marketing, companies can place their content in form of advertisements on mobile websites. However, the two most common types of mobile advertising are Mobile Search Engine Advertising (MSEA) and In-App Advertising (Krum, 2012).

In the case of MSEA, advertisements are placed next to the results of a search query on the user's smartphone. Defined keywords as well as the user's location determine whether the advertisement is relevant for the user and thus displayed (Holland and Koch, 2014). Companies only face costs when the user interacts with the placed ad.

If companies decide to relinquish developing their own app they can direct towards third-party apps to present their content. This method is called In-App Advertising and as most apps are partly or fully ad-financed, there is a broad range of available advertising spaces (Reust, 2010). The extent to which third-parties offer ad spaces is closely linked to the dependency on advertising revenues financing the app. In-App advertisements can have multiple forms. The most important types are: banners, idle screen advertisements and push notifications.

As well as in online marketing, mobile advertisements can appear in the form of banners placed in apps (BVDW, 2013). The ad is presented while the user is actively using the app's functions or is engaged in the app's experience.

Advertisements appearing on the screen of the smartphone during loading processes of apps are called idle screen advertisements. These so-called interstitials allow the overlay of screen wide formats such as images and videos in the foreground of the app (Holland and Koch, 2014). The user cannot escape the ad unless the specified time has expired or the app is quitted.

Besides the previously described In-App Advertising forms, push notifications are an exceptional tool to draw consumers' attention. Unlike the other ad types, push notifications appear when the user is not actively using the app. They are the most direct line of communication towards the mobile target audience and can notify, alert, address or engage the consumer depending on to the placed content. However, the push function must be authorized by the user after the app is installed on the smartphone. There are two different types of push notifications. Default Push Notifications appear on the idle screen of the user's smartphone when it is not in use. The user can interact with the notification by swiping or taping directly leading him to the corresponding app (Pulsate HQ, 2016c). Software updates enabled app developers to create interactive push notifications carrying images and videos paired with integrated action buttons. This type can increase the response rate as it gives users the ability to take immediate action from the idle screen (Pulsate HQ, 2016c). Depending on the placed content, direct actions include ordering, buying, replying or engaging in an activity like answering a questionnaire.

For third-party apps that provide in-app advertising it is critical to ascertain the extent to which users are willing to consume advertisements in exchange for the provided services and functions. If the promotional use exceeds the added value, users will have a negative experience. The consequence is the deletion of the app and, therefore, the loss of the advertising platform and direct link to the consumer.

Mobile Response

With the implementation of response functions like mobile surveys or questionnaires, companies can collect profound information on consumers, products or promotions and measure the success of their mobile as well as their offline marketing campaigns (Wurster, 2010; Steimel, Paulke and Klemann, 2008; Holland, 2016). Advantages of the mobile channel are high answer rates as smartphones are always at hand and major parts of society are interested in new media (Bruhn, 2014). With infrastructure and a core pool of respondents in place high sample sizes can be compiled fast. Moreover, interim evaluations can be performed easily and influences from personal interviewers are eradicated (Bruhn, 2014). Consequently, consumer involvement can be increased and reliable feedback received. The gathered data can be used to form customer profiles setting up the basis for customer relationship management and retention activities. In addition, the costs of using the mobile channel are minor compared to traditional personal interviews at the point of sale (Bruhn, 2014).

Mobile Promotion

Because of the increasing overstimulation from mass media and mass advertising, companies need to differentiate themselves from competitors through creative and innovative marketing concepts at the point of sale. To leverage the experience at the POS, offline elements can be combined with contemporary mobile elements (Holland and Koch, 2014). Inventive mobile components can arouse the consumers' curiosity and offer added value, thus, supporting sales through mobile promotion (Reust, 2010).

3.4 Limitations of Mobile Marketing

The field of mobile marketing has three major limitations: technological requirements, legal frameworks and consumer acceptance. Due to the limited scope of this work project technological requirements (e.g. mobile communications, wireless data transmission technologies, mobile internet, mobile data volume, mobile device compatibility, mobile device

battery life) and legal frameworks (e.g. data protection regulations, telecommunications act, act against unfair competition) are not addressed in this project.

Consumer Acceptance

Besides technological and legal frameworks, consumer acceptance is the most important factor decisive for the success of a mobile marketing campaign. There are two central issues that companies need to address. First, the content of the advertisement and secondly, the context in which it is presented to the consumer.

Mobile devices are rarely used by other persons than their owners and thus being very private utensils (Bauer et al. 2005). Underlying studies show that only 14% of smartphone users like undifferentiated mobile advertisements presented on their device (defacto digital research, 2015a). Therefore, the mobile channel is unsuitable for mass advertising as consumers prefer personalized marketing communications, because of the very intimate relationship with their smartphone. Figure 2 shows how mobile advertisements tailored to the preferences of consumers positively influence marketing effects.
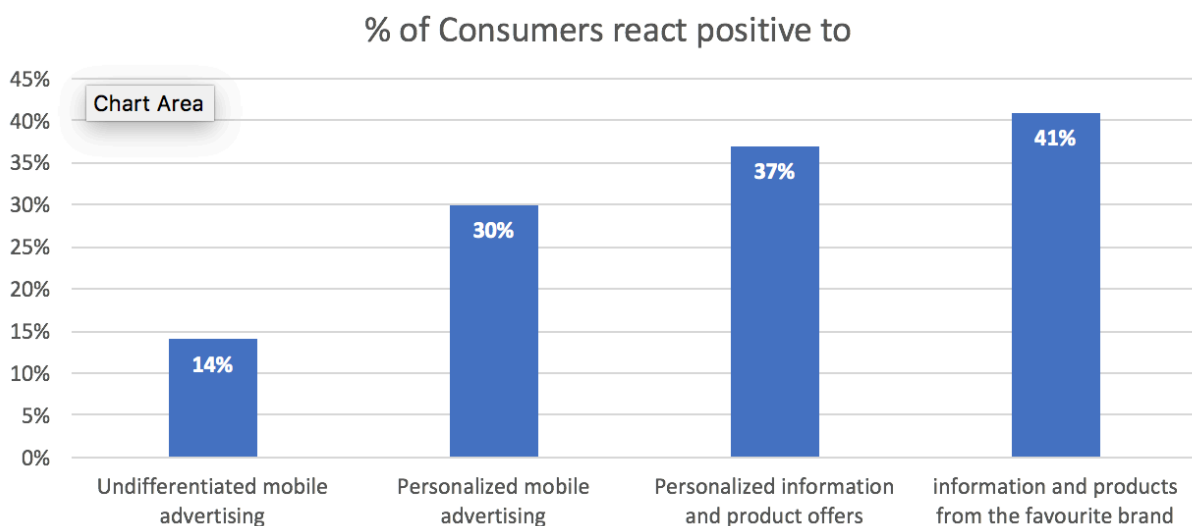

Figure 2: Consumers' Reaction to the Content of Mobile Marketing (defacto digital research, 2015a; own elaboration)

If the content is embellished with information and products of preferred brands, 41% of consumers react positively. As general rule, the more individualized the communication is the better is the feedback of the consumers. By matching advertising content with the interest

profile of recipients, transmitted communication can be perceived as useful information service rather than disturbing advertisements reducing the likelihood of negative reactions. (Dushinski, 2009; Oswald and Tauchner, 2005). Consequently, the personalization of the presented content is the first great opportunity to enhance mobile marketing.

Placing the content in the right context is the second big challenge. As consumers mostly carry their device at all times, advertisers are enabled to approach them anytime and anywhere (Bauer et al. 2005). The set of circumstances and conditions surrounding the consumer in a particular situation must be taken into account as they have strong influence on the consumers' perception of the content presented. Only 20% of consumers indicate that mobile communications are interesting when received regardless of location and point of time (defacto digital research, 2015c). Figure 3 shows that consumers want companies to provide information when they are in proximity to or at the point of sale. 36% state that the moment of entering the POS is the most interesting point of time for receiving additional mobile contents. Consequently, being situationally relevant in the context of the consumer is the second opportunity to leverage the effectiveness of mobile marketing campaigns.
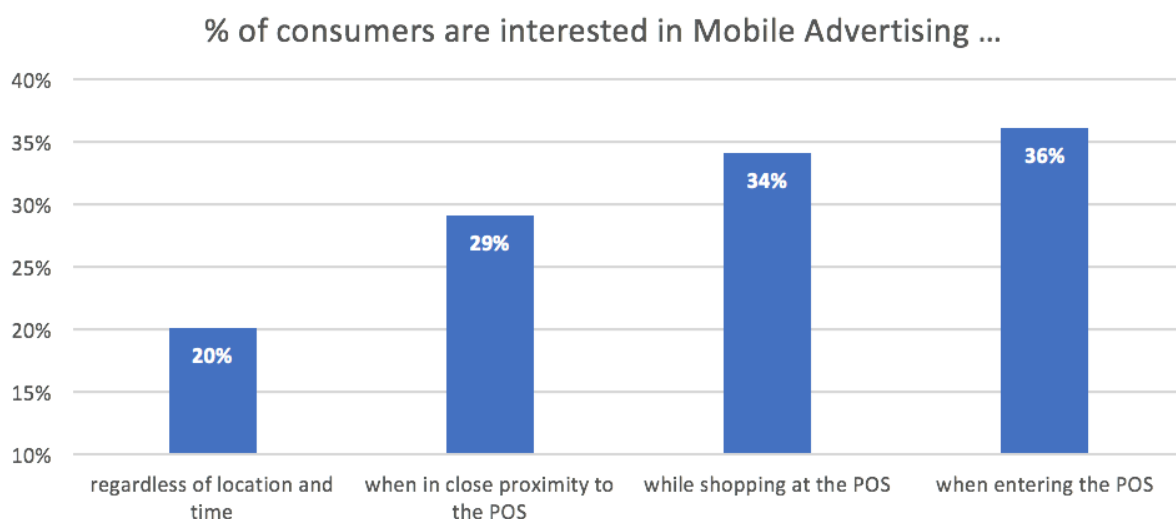

Figure 3: Consumers' Interest in Mobile Marketing Depending on the Context (defacto digital research, 2015c; own elaboration)

To unlock the full potential of mobile marketing, personalized content must be combined with the current environment of the consumer (Cornelsen, 2017). Geofencing is an innovative

technology enabling companies to customize their marketing approach accordingly and take advantage of the presented opportunities.

4. Geofencing

4.1 Definition

A Geofence is a virtual fence that can be drawn around any real world physical location such as cities, streets and stores. Via smartphones and apps, a Geofence tracks consumers' locations in real-time immediately identifying the entrance or exit of the determined space. This allows companies to trigger personalized campaigns in the relevant context.

Due to the actuality of Geofencing, so far, only few companies implemented the technology into their mobile marketing mix. However, it is one of the most discussed trends for digital and especially mobile marketing (artegic AG, 2017). Figure 4 describes the fields of application of Geofencing, attributable to all strategic processes of mobile marketing.
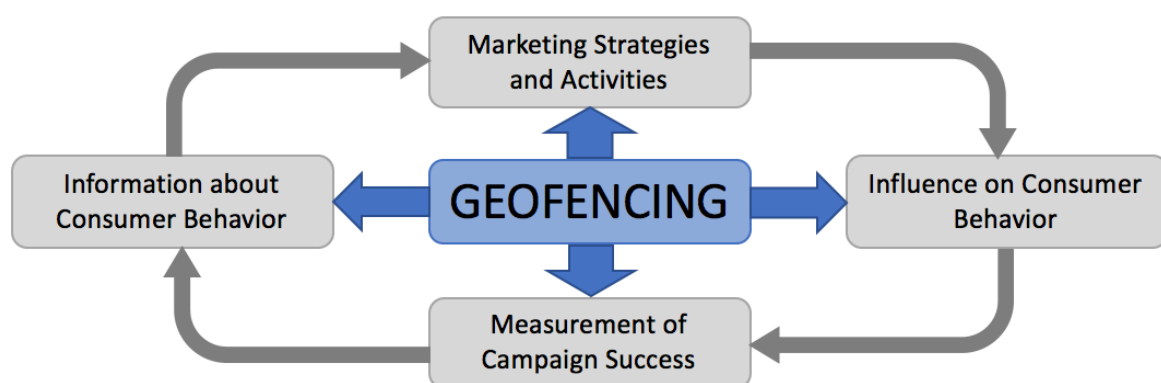
Figure 4: The Fields of Application of Geofencing (own elaboration)

With Geofencing, companies can gather information on consumers' preferences, behaviors and movement patterns. By identifying different personas, the basis for the development of marketing activities is built. In addition, it is a promotional instrument of the mobile marketing mix, also able to convey pricing instruments directly to the consumer's smartphone. Thus, Geofencing is also a form of direct marketing. Additionally, integrated mobile response

functions are ideal for dialogue-oriented communication or allow the measurement of campaign success.

4.2 Technological Requirements

To obtain the necessary information on the consumers' location and to place content on their smartphones, apps and geo-location technologies are the decisive components to be applied (BVDW, 2015).

4.2.1 Smartphone Apps

Primarily, Geofencing requires apps on the consumer's smartphone that are equipped with software development kits (SDK) or Plug-ins reading data from the localization sensors of the device (Pulsate HQ, 2016a). They must be authorized by the user to utilize the location data after installing or opening them for the first time. Secondly, the apps must provide ad spaces.

4.2.2 Localization Technologies

The success of Geofencing is closely linked to a precise localization of consumers. Figure 5 illustrates the advantages and disadvantages of the most relevant geo-location technologies: Global Positioning System (GPS), Cell Identification (Cell-ID) and Wi-Fi positioning system.

	Advantages	Disadvantages
GPS	• very accurate localization • GPS receivers are installed on every modern smartphone	• not applicable inside malls, buildings or underground • users must explicitly authorize the use of GPS • high power consumption
Cell-ID	• high precision in densely populated areas • no additional hardware requirements on smartphones • low power consumption	• used exclusively by telecommunication service providers and only for their respective networks • limited access to data providers
Wi-Fi	• very high precision in urban areas • applicable inside malls, buildings or underground • usable for all Wi-Fi compatible devices • low power consumption	• precision can vary depending on density of Wi-Fi networks • requires Wi-Fi to be enabled

Figure 5: Advantages and Disadvantages of Localization Technologies (BVDW, 2015; Alpeter, 2017; own elaboration)

To achieve a precise and an equally important constant localization of consumers outdoor and indoor, all three technologies should be utilized in collaboration (Pulsate, 2016a). For technical information on the underlying technologies please see appendix 1-3.

4.2.3 Active and Passive Localization

There are two types of apps whose eligibility for Geofencing differs significantly. Apps performing active localization only track the consumer's location when opened and the user is actively engaged in its experience (Pulsate HQ, 2016b). The issue here is that consumers are unaware of the existence and the virtual boundaries of Geofences. Therefore, in most cases the contact between consumer and Geofence will not be detected restricting the possible interactions.

The second app type utilizes passive localization. This means, the app is determining the device's position in a steady but low-power way even if the app is closed (Pulsate HQ, 2016b). Thus, every contact to a Geofence is noticed, recorded and can be utilized to engage with the consumer. The previously presented research unveiled the significance of proximity for the consumers' interest in additional information or product offers. Therefore, the importance of the moment of entering as well as the moment of exiting must be emphasized. Both situations represent so called trigger events, which are used to collect data and can set off the promotional functions of Geofencing (Ilhan, 2017). Because of the high eligibility for Geofencing, passive localization is assumed in the further course of this project.

4.3 The Three Dimensions of Geofencing

This chapter presents the three stages of Geofencing that are necessary to unlock the full potential of mobile marketing. First, the tracking of consumers' movements to gather location-derived data unveiling the customer journey. Secondly, the creation of personas to match advertising content with interest profiles of specific target audiences. Thirdly, the creation of

situational relevance of advertisements for the context of the consumer. Four cases are presented along the course of this chapter, to facilitate the understanding of the fields of application of Geofencing. Case 1 exemplifies the tracking of consumers and the creation of personas. Later, the case is extended to show how to influence the customer journey. Case 2 shows how a Geofence can present advertisements within a certain geographical area. Case 3 gives an example of creating situational relevance for an advertisement. Case 4 illustrates how a company can trigger the right message in the right context through an own app.

4.3.1 Track the Customer Journey

The first dimension of Geofencing is devoted to the acquisition of location-derived data of consumers.

When starting a project, companies must carefully choose appropriate points of interests (POI) relevant for their intended outcome. By defining GPS-coordinates, Geofences can be drawn around POIs such as cities, city centers, streets and buildings. Afterwards, the number and form of Geofences is determined. There are radial and polygonal types that distinguish themselves in shape, size and quality of data. Figure 6 provides an overview of the different types and their characteristics. Appendix 4-6 shows examples of the alternating Geofence types.

Shape	Geographical Reference Area	Quality of Data
Radial	• larger areas around POIs • cities, city centers, shopping areas	• general • city/area visitors • possibly interested consumers
Polygonal (Macro)	• specific areas around POIs • streets, pedestrian areas	• more specific • possibly interested consumers • window shoppers/ passers-by
Polygonal (Micro)	• specific POIs • POS, stores, competitor locations	• very detailed • POS, store, competitor visitors

Figure 6: Types of Geofences (Pulsate, 2016a, own elaboration)

The trigger events record the consumer's interactions with the deployed set of fences and pair them with timestamps. Thus, the dwell time within a fence can be calculated. By combining the information on location and time of each POI, the customer journey is unveiled. The customer

journey presents information on the POIs visited by a single consumer, their chronological order of attendance and the lengths of stay. In addition, tracking the set of fences for a longer period reveals information on the frequency of visits at the POIs.

4.3.2 Build Personas to Match Advertising Content

The second dimension of Geofencing transforms the acquired information on the customer journey into personas presenting rich human insights. Subsequently, the advertising content is matched according to the interest profiles.

By carefully analyzing the gathered data of the deployed fences, implications on the consumer can be formulated. The POIs visited indicate the consumer's interest in certain activities or brands. They can also hint at demographics like age, education or job status, if deployed accordingly (Gahbauer, 2017). The chronological order expresses the consumer's shopping behavior pointing out his preferred shopping paths. The visiting time is another determinant of the consumer's interest in the POI. In the case of POSs, it can indicate brand affinity. The frequency and amount of POS visits can either imply loyalty or discontent and rejection.

To turn the previously stated implications into certainties, it is necessary to gather enough evidence through an extensive collection of data. Therefore, the tracking period of a deployed set of fences should amount to three months, at least (Gahbauer, 2017). As a result, comprehensive statements display accustomed routines of consumers, eligible for the creation of personas. Personas symbolize different consumer segments reflecting their interests, preferences and behaviors (Skyhook Wireless, 2017). Subsequently, advertising content can be matched with the profiles of personas, providing relevant and personalized information for the consumer. In all remaining cases, consumers are not confronted with undifferentiated content. Thus, it enhances the acceptance of and interest in mobile advertisements, while reducing divergence loss and advertising costs.

> **Case 1: Tracking the Consumer and Creating Personas**
>
> defacto digital research conducted a Geofencing project for a leading sports and fashion brand to identify a specific persona called "urban athlete", in Berlin, Germany. The urban athlete is a young and active person living in an urban area within the city. He engages in sport activities and public sport events. Additionally, he has a fable for contemporary fashion and lifestyle products. To identify urban athletes in Berlin, 65 Geofences were deployed around POIs like: own POSs, competitor locations, other sports and fashion retail stores, pedestrian areas, malls, gyms, soccer fields, stadiums and universities. Appendix 7-8 show the specific POIs and their locations in the city. To ensure a precise visitor identification, polygonal micro fences were drawn around the own POSs, competitor locations and other retail stores. The tracking period of the set of fences was three months and resulted in over 8500 unique consumers presenting the desired characteristics of the specific persona, ultimately classifying them as urban athletes. This was achieved by solely using location-derived data from Geofences and no other sources of information. As a result, the sports and fashion brand is now able to approach the relevant urban athlete with advertising content tailored to his exact preferences and interests.

4.3.3 Creating Situational Relevance of Advertisements

In the third dimension, Geofencing optimizes the situational relevance of ads by placing them in the right context. To achieve that, the trigger events clearly marking location and time of the consumer's interactions with a Geofence are utilized to limit and set off advertising content (Ilhan, 2017). The form of the ad varies according to the available ad spaces.

A single Geofence can ensure the relevance of an advertisement by determining geographical boundaries for the transmission, depending on its content.

Case 2: Creating Geographical Relevance through Geofencing

Nespresso used Geofencing to inform consumers in Wiesbaden, Germany, about the opening of the first POS in the city. The communication was placed in ad-financed apps and the broadcasting area was limited by a radial fence around the city. Whenever a consumer opened an associated app, while inside the Wiesbaden Geofence, Nespresso interstitials were displayed on his smartphone. Appendix 9 shows the two images promoting the new presence of Nespresso in the city and the exact location of the store.

The mobile campaign of Nespresso is a basic but successful example of placing content in the right geographical context. For existing customers the ad presented valuable information, as previously, Nespresso products were more difficult to obtain. Additionally, the ad might also spark the interest of potential customers and guide them towards the new POS.

To motivate potential customers to visit a POS, mobile campaigns can convey pricing instruments. Depending on the promotional period, time constraints can also be added to Geofences.

Case 3: Creating Situational Relevance through Geofencing

McDonald's is actively using Geofencing for a mobile promotion campaign in Germany to acquire new customers. Appendix 10 shows the advertisement presented to consumers and its different components. The ad carries a pricing instrument in the form of free coffee at McDonald's restaurants (POSs) until 10:30 am. The address included in the ad is substitutable and customized depending on the POS. First, it must be assured that consumers receive the ad referring to the restaurant in immediate proximity. Therefore, radial Geofences with a width of 1000 meters were drawn around the POSs, assigned with the customized location reference. Secondly, it must be ensured that the ad is received within breakfast hours, only. Therefore, a time constraint was added limiting the timeframe of the

ad to 6 am and 10 am. Hence, only trigger events detected during the given promotional period cause the dispatch of the ad. As a result, consumers receive the offer of a free coffee, when passing by a McDonald's restaurant on the way to their workplace, in the morning. McDonald's can review the campaign's success by measuring the number of consumers entering the restaurant after previously receiving the ad. Therefore, a polygonal micro fence around the POS is needed, tracking visiting consumers.

This case is an example of matching the content of an ad with the context of the consumer by adding time constraints and geographical limits. However, McDonald's spared the creation of personas and the matching process of consumer interests with advertising content. As part of the strategy, divergence loss is tolerated in exchange for high contact numbers.

Another way to achieve situational relevance is by approaching consumers in crucial moments along the customer journey. Movement patterns between the POIs unveil the preferred path of the consumer. It is critical to identify moments, when the consumer is deciding where to go next. In this context, mobile marketing is most powerful, as it can influence the consumer's choice on the go (Cornelsen, 2017).

Case 1 (extended): Take Advantage of Crucial Moments along the Customer Journey
The analysis of the urban athlete's journey presents meaningful insights concerning his interest in POIs, his movement patterns and preferred shopping paths (Appendix 11-12). Most cases show, that he visits Zara before continuing his journey to either the competitor location or the own POS. The situation after exiting Zara is crucial, as 73% of urban athletes head towards the competitor's location (Appendix 13). In this very moment, it is necessary to influence the urban athlete's decision and direct him towards the own POS. This is possible by utilizing the exiting trigger event of the Zara Geofence, to send the previously

> personalized advertisement to his smartphone. Consequently, the percentage of urban athletes proceeding their path to the own POS should be increased. By continuously tracking the urban athlete, the campaign's influence on his journey can be assessed.

In this case Geofencing is applied for a Geo-Conquesting campaign, enticing consumers away from competitor locations and guiding them towards own POSs.

The studies of defacto digital research revealed that consumers are most interested in personalized information on products, when entering the POS. For that purpose, the entering trigger event of Geofences can be used to engage with the consumer in this specific situation.

> **Case 4: Trigger the Right Message in the Right Context**
>
> In Portugal, the retail chain Continente has an own app called Continente Cartão. It is used for mobile commerce but more importantly as a direct line of communication to the consumer. Thus, third-party ad space-providers are not required reducing advertising costs. Polygonal micro fences are deployed at the POSs of Continente and as the app can perform passive localization, consumers' interactions are detected even when the app is closed. When a customer enters a hypermarket, the app automatically sends a push notification to the idle screen of the consumer's smartphone. The notification can hint to new products available, inform about promotions at the POS and place purchasing incentives (Appendix 14). As a result, the consumer receives highly relevant information in the moment he starts shopping at Continente.

The fact that Continente is able to contact the consumer via the own app is a decisive advantage. Because of the personal contact and the existing connection to the brand, the consumer perceives Continente's notification as useful information rather than an annoying advertisement. Continente could integrate further Geofencing functions to foster the relationship with the consumer. The exiting trigger event of a POS could be used to deliver a thank you note or to

place a mobile response function like a questionnaire or survey. In return for completing the survey and providing valuable insights about the experience at the POS, the customer could be awarded a coupon, redeemable at the next POS visit. Additionally, if the Geofences detect frequent visits at POSs, the customer could be rewarded for his loyalty in form of bonus programs conveyed through the app.

5.   Conclusion

Consumers as well as companies are extremely sensitive to technological change. Environmental developments like the digitalization and the emergence of smartphones strongly affect the consumer's behavior and, thus, the requirements for a successful marketing campaign. In respect of the consumer's acceptance of mobile marketing, undifferentiated content and contextless advertisements were identified as key issues. The objective of this project was to introduce the three dimensions of Geofencing and to demonstrate their potentials, addressing the issues in question. The presented cases illustrate the different fields of application of this technology depending on the company's pursued strategy.

By matching advertising content with the detailed interest profiles of personas, companies can increase the consumer acceptance of mobile advertisements and minimize divergence loss. Consequently, fewer ad spaces are required, hence reducing marketing expenditures. In addition, by means of Geofencing companies can give advertisements situational relevance by adding geographical limits and time constraints. Their trigger events can be utilized to set off the previously personalized advertisements in crucial moments along the customer journey or at the POS, ultimately influencing the consumer's behavior.

As a result, a successful mobile campaign combines personalized content and situational relevance to achieve the company's marketing objectives by creating high consumer acceptance and engagement. Therefore, Geofencing is a promising technology to enhance the effectiveness of mobile marketing.

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