ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL OF SCIENCE ENGINEERING AND TECHNOLOGY

USING MICRO LOCATION-BASED TECHNOLOGIES IN MOBILE MARKETING: INTEGRATION OF SMS WITH MASS, SEGMENTED AND LOCATION-BASED CUSTOMER DATA

M.Sc. THESIS

Gülşah ÇINAR

Department of Management Engineering
Management Engineering Programme

MAY 2015

ISTANBUL TECHNICAL UNIVERSITY ★ GRADUATE SCHOOL OF SCIENCE ENGINEERING AND TECHNOLOGY

USING MICRO LOCATION-BASED TECHNOLOGIES IN MOBILE MARKETING: INTEGRATION OF SMS WITH MASS, SEGMENTED AND LOCATION-BASED CUSTOMER DATA

M.Sc. THESIS

Gülşah ÇINAR
(507121014)

Department of Management Engineering

Management Engineering Programme

Thesis Advisor: Assoc Prof. Dr. Elif KARAOSMANOĞLU

MAY 2015

İSTANBUL TEKNİK ÜNİVERSİTESİ ★ FEN BİLİMLERİ ENSTİTÜSÜ

MİKRO LOKASYON BAZLI TEKNOLOJİLERİN MOBİL PAZARLAMA ALANINDA KULLANIMI: KİTLESEL, KESİMLENMİŞ VE LOKASYON DATASI BİLİNEN MÜŞTERİLERE SMS GÖNDERİMİ

YÜKSEK LİSANS TEZİ

Gülşah ÇINAR
(507121014)

İşletme Mühendisliği Anabilim Dalı

İşletme Mühendisliği Programı

Tez Danışmanı: Doç.Dr. Elif KARAOSMANOĞLU

MAYIS 2015

Gülşah Çınar, a **M.Sc.** student of ITU **Graduate School of Graduate School Of Scıence Engıneerıng And Technology** student ID 507121014, successfully defended the **thesis** entitled "**USING MICRO LOCATION-BASED TECHNOLOGIES IN MOBILE MARKETING: INTEGRATION OF SMS WITH MASS, SEGMENTED AND LOCATION-BASED CUSTOMER DATA**" which she prepared after fulfilling the requirements specified in the associated legislations, before the jury whose signatures are below.

Thesis Advisor : **Assoc Prof. Dr. Elif KARAOSMANOĞLU**   ....
İstanbul Technical University

Jury Members : **Assist Prof. Dr. Gülberk Gültekin Salman**   ....
Istanbul Technical University

Assist Prof. Dr. Oğuzhan Aygören   ....
Istanbul Technical University

Date of Submission : 04 May 2015
Date of Defense   : 29 May 2015

iii

To my family,

FOREWORD

I would like to thank those who gave us the possibility to complete our master thesis. The support, valuable guidance, knowledge and advice provided to us throughout the research enabled us to fulfill our thesis purposes.

I would like to take this opportunity to thank the following persons:

My sincere gratitude goes to my supervisor Assoc Prof. Dr. Elif KARAOSMANOĞLU and I would like to thank for her guidance, expertise, support and motivation throughout the research. Her supervision enhanced the ease of the progression of our research.

I am also grateful to mobile operator for its support and co-operation during entire period of my studies.

Last but not least I would like to thank my loving partner Nurtaç Karaca whose words of encouragement and push for tenacity ring in my ears. My family, Fatma, Şemsi, Ibrahim, Veyis, Gökhan, Emrah, Gülçin and Merve have never left my side and are very special and my little nieces Yaren Su, Övgü Su and Hatice Naz are source of my motivation.

May 2015   Gülşah ÇINAR
                                                                                                    (Industrial Engineer)

TABLE OF CONTENT

ABBREVIATIONS

SMS	**:**	Short Message Services
MMS	**:**	Multimedia Messaging Services
NFC	**:**	Near Field Communications
LBM	**:**	Location-Based Marketing
LBS	**:**	Location-Based Sevices
LBA	**:**	Location Based Advertising
GPS	**:**	Global Positioning System

LIST OF TABLES

LIST OF FIGURES

USING MICRO LOCATION-BASED TECHNOLOGIES IN MOBILE MARKETING: INTEGRATION OF SMSs WITH MASS, SEGMENTED AND LOCATION-BASED CUSTOMER DATA

SUMMARY

Mobile usage and mobile penetration increase rapidly following the emerging use of smartphones and other smart mobile devices. This creates a new promising direct marketing channel empowered by quick response capabilities called mobile marketing. Mobile marketing has been considered as a new form of marketing and consist of a group of practical activities that enable a company to communicate and include its segmented market by using mobile devices and networks. Especially, the rising popularity of short messaging services (SMS) has created for marketing, called mobile marketing. As the mobile penetration is very high, it has a huge market potential and this business is significantly lucrative.This paper explores success factors of mobile SMS marketing based on content management, segmentation of the customer groups and using location data of targeted customers. Three main objectives of this study are analysing the influence of different factors in affecting consumer attitudes toward mobile marketing, the impact of segmentation on marketing campaigns especially on purchasing motivation and measuring the enhance effect of location-based services on purchasing motivation of targeted consumer. This study casts light on the relationship of content of the SMSs, segmentation and using the location information of the customers to suggest that the proposed model is suitable for maximizing the marketing effect. Data gathered through a survey study and real SMSs delivered to the specific customer group by a mobile operator in Turkey. And the data has been analysed in SPSS program. Based on analyses and findings from both survey study and real data from SMS delivery,; there are factors affects customer attitude toward mobile marketing -informativeness is the major predictor-, segmentation effects the success of the marketing SMSs campains in a positive way, and delivering SMSs considering location of the customer along with segmentation, has an enhancement effect on mobile marketing campaigns.

MİKRO LOKASYON BAZLI TEKNOLOJİLERİN MOBİL PAZARLAMA ALANINDA KULLANIMI: KİTLESEL, KESİMLENMİŞ VE LOKASYON DATASI BİLİNEN MÜŞTERİLERE SMS GÖNDERİMİ

ÖZET

Günlük yaşamda önemli değişikliklere sebep olan mobil kullanım ve penetrasyon oranlarının artışı, akıllı telefonlar ve diğer mobil cihazların yaygınlaşması ile birlikte bilginin ulaşılabilirliğini ve yayılmasını daha kolay hale getirmiştir. Artık insanoğlunun bir parçası haline gelen mobil iletişim donanımları müşterilerin daha kolay ulaşılabilir olmalarını sağlamıştır. Bu durum mobil pazarlama kapsamında yeni bir direkt pazarlama kanalının doğmasını sağlamaktadır. Bu şekilde şirketler müşterilere çok daha kolay ve etkin şekilde ulaşabilmekte ve ürün hizmet tanıtımı/pazarlaması yapıabilmektedir.

Mobil pazarlama diğer pazarlama yöntemlerine göre nispeten yeni bir form olarak nitelendirilmekte ve şirketlerin ilgili müşteri grupları ile iletişimini sağlayan pratik bir yöntem olarak değerlendirilmektedir. Özellikle mobil telefonlar aracılığı ile gönderilen kısa mesajların kullanımının yaygınlaşması yeni bir pazarlama yöntemi oluşmasını sağlamaktadır. Bu pazarlama kanalını doğru kullananlar yakaladıkları üstünlük sayesinde pazarlama faaliyetlerini daha esnek hale getirmektedirler. Esnek olmak pazarın dinamizmi karşısında çözüm üretkenliğine katkı sağlamaktadır. Esnekliğin yanı sıra mevcut, potansiyel ve hedef müşterilere doğrudan iletişim yapabilme ve geri dönüşlerin anlık ölçülebilir olması mobil pazarlamanın bu aracı doğru kullanan şirketlere sağladığı olanaklar olarak değerlendirimektedir. Tüm bu olanaklara ek olarak klasik pazarlama iletişim araçlarına göre maaliyet avatajı sağlaması mobil pazarlamanın günümüzün en popüler iletişim yöntemi olmasına sebep olmaktadır.

Hedef müşteriyi belirlemek ve bunların satın alma davranışlarını incelemek önemli olduğu bilinmektedir. Şirketler kendi ürünlerinin satışlarını artırabilmeye yönelik müşteri davranışını anlamaya çalışmaktadır. Çoğu müşteri duygusal sebeplere veya satın alma yönteminin kendilerine verdiği hisse göre satın almaktadır. Müşterilerin bir

ürüne veya hizmete karşı olan tutum ve algıları bu noktada çok önem kazanmaktadır. Mobil tüketiciler açısından değerledirildiğinde müşterinin ilgi alanına ve yaşam stiline göre kişiselleştirilmiş iletişim tüketici algısında iyileşmeye sebep olmaktadır. Bu noktada iletişimin içeriği de önem kazanmaktadır. Literatürde yer alan araştırmalar göstermektedir ki, eğlenceli ve bilgilendirici içerikler algı üzerinde olumlu etkiler yaratırken rahatsız edici (irite edici) içeriker olumsuz sonuçlar doğurmaktadır.

Tüm bunların yanı sıra, mikro lokasyon bazlı teknolojilerin yaygınlaşması sayesinde mobil pazarlama daha önem kazanacaktır. Müşterilerin nokta atışı şeklinde lokasyon bilgilerine erişebilen teknolojiler, perakende, finans ve hızlı tüketim sektöründe uygulama açısından uygun koşullar sağlamaktadır. Öyke ki mikro lokasyonlar mağaza içindeki reyon veya kasa için bile özel olarak ayarlanabilmekte ve farklı müşteri gruplarına farklı içerikte SMS'ler göndererek pazarlama kabiliyeti sağlamaktadır. Müşterilerin mağaza içindeki hareketlerinden oluşturulan sıcaklık haritaları ile mağaza içindeki ürünlerin konumu belirlenerek satış etkinliği yaratılabilmektedir. Böylece hangi segmentteki müşterilen hangi ürünlere ilgisinin daha çok olduğu, hangi ürünü alan müşterilerin başka diğer ürüne ilgisinin çok oluğu belirlenebilmektedir. Ek olarak satın alma davranışını etkileyen diğer unsurlar ise ürünün müşteri tarafından algılanan faydalılığı ve kullanılabilir olmasıdır. Mobil pazarlama açısından da müşterilerin mobil pazarlamayı faydalı ve kolay kullanılabilir bulması önemlidir.

Bu çalışma SMS'lere yönelik içerik yönetimi, seçilmiş hedef müşteri gruplarına yönelik iletişim ve müşterilerin lokasyon bilgilerinin kullanımı bazında mobil SMS pazarlamasının başarı faktörlerini araştırmaya yönelik yapılmıştır. Mobil pazarlamaya yönelik müşteri algısını etkileyen faktörlerin ve segmentasyonun müşterinin satınalma davranışı üzerindeki etkisinin analiz edilmesi ve ilgili ürünün bulunduğu lokasyondaki hedef kitleye yönelik yapılan SMS pazarlamasının başarıyı artırıcı etkisinin ölçülmesi çalışmanın üç temel amacı olarak belirlenmiştir. Bu çalışma ayrıca, pazarlama uygulamasının etkisini artırmaya yönelik SMS içeriği, segmentasyon ve müşteri lokasyon bilgisi arasındaki ilişkinin anlaşılmasına olanak sağlamaktadır. Bilgilendiricilik açısından iki farklı nitelikteki SMS içeriği, müşterilerin daha önceki verilerinden elde edilen analizler sonucu segmente edilmiş ve belirlenen satın alma noktalarında canlı gönderimler yapılarak anlık olarak izlenmiştir. Bu konuda gerekli olan veriler Türkiye'de hizmet veren bir mobil işletmeci tarafından sağlanmış, ilgili SMS'ler bu işletmeci müşterilerine gönderilmiştir.

Dünya üzerindeki işletmeciler değerlendirildiğinde müşteri verilerini en iyi ölçümleyen, saklayan ve işleyen işletmecilerin mobil işletmeciler (mobil şebeke işletmecileri) olduğu görülmektedir. Büyük veri (big data) olarak adlandırılan günümüz araştırmalarına konu olmaya başlamış popüler olgu sayesinde pazarlama faaliyetleri artık daha çok analizler sonucu planlanlanmaktadır. Müşterilerin daha önceki davranışları ve mevcut durumları segmentasyon kriterleri açısından demografik, sosyo-ekonomik ve mobil kullanım koşulları değerlendirilerek doğru hedef kitle belirlenmeye çalışılmıştır. Bu doğrultuda bu çalışmada, müşterilere gönderilen farklı bilgi seviyesindeki iki SMS için anket çalışması yapılarak müşteri düşünceleri incelenmiştir. Anket çalışmaları ve SMS gönderimlerinin sonuçları SPSS üzerinde incelenerek sonuçlar detaylı olarak analiz edilmiştir.

Çalışma kapsamında gerçekleştirilen, anket çalışması ve hedef gruplara gerçek SMS gönderimi yöntemleri ile elde edilen bulgulara göre; SMS içindeki bilgi seviyesi başta olmak üzere müşteri algısını etkileyen bazı faktörler bulunmaktadır. SMS içindeki bilgilerin nasıl düzenlendiği ve alıcıları nasıl harekete geçirdiği yapılan anket çalışması ve tam zamanlı SMS gönderimleri ile desteklenmiştir. Ayrıca SMS'lerin ilgili hedef müşteri gruplarına gönderiminin mobil pazarlama kampanlarının başarısına olan etkisi inceleme konusu olmuştur.

Bu noktada öne çıkan bir başka konu da tanıtımı yapılacak ürünün hedef müşteri kitlesinin doğru belirlenmesi gerekliliğidir. Hedef kitlesi belirlenmemiş toplu SMS gönderimleri geri dönüşü düşük başarısız uygulamalara sebep olduğu gibi müşteri algısının mobil pazarlamaya olan inancının da azalmasına sebep olmaktadır. Bu yüzden işletmeciler kısa vadeli yanlış çözümler yerine uzun vadeli doğru çözümlere yönelmelidir. Doğru kişiye doğru içerikte tanıtımlara katma değeri yüksek sonuçların elde edilebileceği yapılan çalışmalar sonucu ortaya çıkarılmıştır.

Bunlarla birlikte mobil pazarlama SMS'lerinin ilgili müşterilerin ürünün satın alınabileceği lokasyonda bulunduğu esnada gönderilmesinin başarıyı artırıcı etkisi bulunmaktadır. Müşteriler ürün/hizmete yakın oldukları noktada (ürünün satın alınabileceği noktada) ürün/hizmet ilgili tanıtımım veya promosyon bildirimi aldıklarında satın alma konusunda daha istekli olmaktadırlar. Bu sayede klasik pazarlama kanallarının en büyük sorunu olan akılda kalıcılık sorunu mikro lokasyon bazlı iletişim ile neredeyse ortadan kalkmaktadır. Ürün ile aynı ortamda bulunan

müşterinin satın alma işlemini gerçekleştirmesi tanıtım yapan firmanın doğru içeriği doğru kişi ile buluşturmasına kalmaktadır.

1. INTRODUCTION

In the marketplace of the twenty-first century, there are new marketing trends instead of traditional programs throughout the world, which have created an entirely new competition in almost every industry. Now consumers are always online and in many societies, they have become "mobile dependent". Companies are able to produce unbelievably creative marketing campaigns through reaching right consumer with delivering the right messages, at a right time and place. Today, the mobile medium presents unprecedented opportunities to companies to connect with their customers, through a multitude of innovative applications like SMS, MMS, IVR, mobile internet, mobile coupons, mobile games, mobile payment systems, mobile applications and location-based services. Efficiency of marketing campaigns now are achieved at very high levels.

Espacially, the rising popularity of short messaging services (SMS) has created for marketing, called mobile marketing. As the mobile penetration is very high, it has a huge market potential and this business is significantly lucrative.

But at the same time in order to get succesful results from mobile marketing activities, it is important to know how consumers feel about the mobile campaigns delivered to their mobile phones, what factors affect their attitude, how designers and marketers should better strategize their mobile marketing designs.

Within this scope, the three main objectives of this study are analysing the influence of different factors in affecting consumer attitudes toward mobile marketing, the impact of segmentation on marketing campaigns especially on purchasing motivation and measuring the enhance effect of location-based services on purchasing motivation of targeted consumer.

Segmentation is a vital starting point for most marketers. From the point of mobile network operators segmentation is main capability of them. Mobile network operators is in a better position to gain revenue by using this terrificial ability to monetise their

1

big data as well as understand their customer and grow market share and improve profitability.

1.1 Literature Review

Mobile marketing has been considered as a new form of marketing and consist of a group of practical activities that enable a company to communicate and include its segmented market by using mobile devices and networks.

Mobile marketing requires wireless network, mobile technology, and infrastructure in order to be effective. These technologies serve as the sound platform for implementation of wireless promotion and advertising (Netsize Guide, 2005)

There are many definitions of mobile marketing in the literature. According to Plavini and Durgesh (2011), Altuna and Konuk (2009), mobile marketing is defined as the use of wireless technology to provide an integrated content regarding a product or a service to the intended customers in a direct manner.

The Mobile Marketing Association (2008) defines mobile marketing as *"The use of wireless media as an integrated content delivery and direct response vehicle within a cross-media marketing communications program."*

According to Shavitt (1998), even tough old studies show that there is an unfavorable manner toward advertising among consumers; some researchers found that there is favorable view of advertising. However, situation in mobile marketing and advertising may differ.

Among all mobile marketing channel SMS have been very successful and have more foundation and advantages to send related messages to tailored customers. Sending message at appropriate time and with personization of the content increases the success of advertising campaign.

According to Barwise et.al. (2002) advertisers need to be cautious about the content and the information when planning mobile advertisements in order to get end user's attention. Mobile advertisements should be entertaining, emotional and interactive and provide incentive to customers in order for them to pay attention to the advertisements (Jelassi, 2004).

In addition, in order to function properly wireless advertising should provide the information customer find more valuable and creates benefit to the customer. If the content of SMS advertisements is irrelevant, customers may have negative reaction when receiving such messages (Barwise et al., 2002)

Several researchers argue the importance of content in mobile marketing (Leppäniemi, 2004; Dickinger, 2004; Haghirian, 2005; Xu, 2007; Rebello, 2009, Hamka, 2012). Attributes of the content is defined by Haghirian, 2005 as entertainment, informativeness, credibility and irritation.

According to Leppäniemi, 2004 content of the message is crucial in all type of advertising and it is also valid in mobile advertising. In order to communicate properly and efficiently with consumers, underlying factors of mobile advertising must be identified. Information and entertainment are found to be the most important acceptance attributes of mobile marketing (Bauer, 2005).

According to Xu, 2007 personalization, entertainment and informativeness are the attributes of content that have positive effect on overall attitude, but irritation has negative impact on overall attitude. Xu's model of factors contributing to attitude and intention toward mobile advertising is shown in Figure 1.1 below.
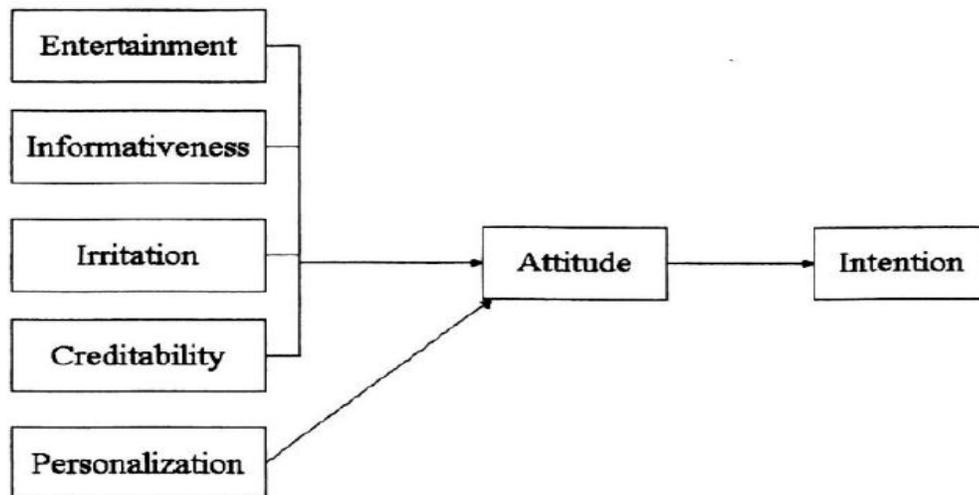
Figure 1.1 : Factors contributing to attitude and intention toward mobile advertising.

According to Dickinger (2004) mobile marketing is *"Using interactive wireless media to provide customers with time and location sensitive, personalized information that promotes goods, services and ideas, thereby generating value for all stakeholders"*.

According to Xu (2007) it can be expected that mobile advertising is more valuable for consumers when considering location based services and time sensitive events.

Location-based services are very beneficial for local advertising campaigns: for example, consumer may receive short message about the nearest restaurant or bus station with directions.

Location-based advertising utilizes the location by using individual consumers to target consumer in particular location (Tsang, 2004). Location based advertising is time sensitive in a way that advertisement can be sent to signed up client when this client pass through a certain point of purchase (Dickinger, 2004).

By tracking mobile devices technical address, it is possible to detect local position of the user in the environment of mobile commerce (Lee, 2007). As an example Avea one of the mobile operators in Turkey, applied real-time SMS service by using mobile devices position to send SMS notifications regarding new traiffs in order to trigger customers to buy an up-sell tariff while passing near one of its dealers.

2. MOBILE MARKETING

Many people once considered mobile phones a novelty, but today they are considered must-haves. Mobile phones have replaced the more traditional computer landscape of laptops and personal and desktop models. Moreover, with mobile devices occupying the majority of user free time, ripple effects are being felt far and wide, especially when it comes to business and marketing. Where potential customers once stood idle, reading advertisements on the backs of shopping carts and browsing merchandise while standing in the register lines, today's consumer will most likely spend those few free moments connecting to the online world. With mobile devices from smartphones to tablets, businesses large and small are now beginning to realize that mobility is no longer a novelty, a future consideration.

With the potential benefits of mobile ranging from customer acquisition to streamlined sales conversion, it is no wonder that mobile media has become a serious marketing tool for businesses of all sizes. Successful mobile campaigns have common fundamental characteristics, can be distilled down to three; measurability, consumer insights, and innovation. Tracking the effectiveness of mobile marketing campaigns is easier than traditional programs. It is a simple process to follow an individual with a unique phone number attached to every action; plus companies can instantly communicate with their audience. The audiences are most likely carrying their mobile devices with them, which means they can always receive messages. This is superior to other forms of marketing, whereby the audience has to be in a specific place to see a billboard or view and advertisement. Marketing through mobile devices is also very efficient. Producing content for mobile view, such as video or audio, is very inexpensive when compared to producing content for desktop computers.

There are nine ways that companies are using the far-reaching potential of mobile media in marketing programs. They can be list as Short Message Services (SMS), Multimedia Messaging Services (MMS), Near Field Communications (NFC) and Bluetooth, Mobile Websites, Mobile Display Advertising and Paid Search, Location-based Marketing, Mobile Apps, QR Codes/2D Codes, Tablet Computing. (Hopkins, J., Turner, J., 2012). Among these alternative marketing programs, SMS is the most far-reaching and ubiquitous of data applications. SMS has so far proved to be the most successful mobile media tool for businesses. Cost-effective and easy to integrate, SMS

capabilities provide a number of benefits to a variety of specific applications include; ubiquity, compatibility, personable, environmentally friendly, cost effectiveness, community dialogue, contentability, promotional campaigns, time-sensitive information, authenticate identification. Another way to provide advantage in building customer loyalty and repeat business is Location-Based Marketing. Whereby this terrific method, companies can make use of real time promotional campaigns while customers are physically in the store. This can provide customer feedback and generate word-of-mouth advertising. In addition to enhancing the customer shopping experience, LBM also provides the marketer with an opportunity to target engaged consumers in the moment, when they are much likely to make a purchase.

2.1 Introduction to Mobile Marketing

The Mobile Marketing Association (2008) defines mobile marketing as *"The use of wireless media as an integrated content delivery and direct response vehicle within a cross-media marketing communications program."* Anyway, it is important to clarify mobile marketing and mobile advertising (Leppäniemi, 2004). Hence Leppäniemi, 2004 defines mobile advertising as *"Any paid message communicated by mobile media with the intent to influence the attitudes, intentions and behavior of those addressed by the commercial messages."* which can be also inferred from definitions mobile advertising is part of mobile marketing.

After stating two types of mobile advertising which are push and pull advertising, Leppäniemi (2004) explains it as following: "Advertising that is "pushed" to the users' devices is generally used in conjunction with mobile advertising. Push advertising may be unsolicited such as special promotions delivered by SMS to users within the context of an existing customer relationship, or it may be solicited where users agree to have certain services or promotions pushed to them at certain times (sponsored sports score alerts, for example). Pull advertising, on the other hand, is defined as an advertising that is attached to content or services that users request or "pull" to themselves. For instance, when a customer requests the local weather from mobile service provider, the content of the response, including any related advertising, is pull advertising.

The increasing growth in the area of mobile commerce gives new dimensions to interactive marketing. Direct interaction with consumers is possible via mobile

marketing without time and place boundaries (Dickinger, 2005). Personal nature of the mobile phones provide an opportunity to understand buying habits and trends of individual consumers which is impossible in PC environment, that's why marketers should see mobile internet as a powerful medium.

Because the smartphone is becoming more and more the vehicle of communication and online interaction for countless consumers worldwide, many companies resort to mobile marketing, sending advertisements straight to phones in the form of a text message.

2.2 Types of Mobile Marketing

Improved technology in mobile devices allowed mobile consumers to surf the internet, find the location, tweet with friends or chat with them, watch movies and play games and so on (Liu, 2010)

2.2.1 Mobile banner marketing

Banner ads are image-based rather than text-based and are a popular form of website advertising. The aim of banner advertising can be defined as to promote a brand and/or to get visitors from the host website to go to the advertiser's website. An example of mobile banner advertising can be seen in figure 2.1.

Figure 2.1: Mobile banner advertising example.

2.2.2 Location based marketing

Location-based services are very beneficial for local advertising campaigns: for example, consumer may receive short message about the nearest restaurant or bus station with directions. Location-based advertising utilizes the location by using individual consumers to target consumer in particular location (Tsang, 2004). Location based advertising is time sensitive in a way that advertisement can be sent to signed up client when this client pass through a certain point of purchase. Location based marketing phenomenon can be animated as in figure 2.2.

Figure 2.2: Location based marketing.

2.2.3 Bluetooth wireless proximity based marketing

Bluetooth marketing can be explained as the placement of Bluetooth access point in any public place like airport, train station or any live event, and when consumer walks by this device and the Bluetooth is enabled on mobile device access point request automatically request interaction with mobile device. If user accepts the request bluetooth access point sends rich content like game, ringtone sound, picture or any other form of content to users phone (Sundaray, 2014). Bluetooth wireless proximity based marketing phenomenon can be animated as in figure 2.3.

Figure 2.3: Bluetooth wireless proximity based marketing.

2.2.4 Application marketing

Mobile applications can be used to create rich software experiences for consumers and can be provided to mobile devices like tablets or smartphones (Becker, 2010). Mobile applications also can be used for branding and advertising purposes and can be sold to get money.

Mobile applications can be used for branding and advertising purposes and can be sold to get money. Mobile television is also another type of application that holds great potential for advertising. An example of application marketing can be seen in figure 2.4.

Figure 2.4: Application marketing examples.

2.2.5 QR codes

Quick Response (QR) codes which are also a type of mobile marketing, is defined as as a matrix code (or two-dimensional bar code). Eventually, flat surface advertising like paper and cyber media already become popular around the world with the widespread adoption of smartphones led to the QR code's expansion into the marketing industry (Sundaray, 2014). Basic QR code scanners can now be downloaded as smartphone apps and used to scan any QR code that anyone publishes, from anywhere. QR code image can be seen in figure 2.5.

Figure 2.5: QR Code.

2.2.6 Interactive voice response (IVR)

Interactive voice response is providing and option to send or receive voice calls with people and communicating with them without any live person is involved on the other side of the communication.

2.2.7 SMS marketing

Short message service (SMS) advertising is an advertising message, in alphanumeric format up to 160 characters that can be stored in the user's handset, reviewed or forwarded to others at a later time. SMS advertising is diverse in content, including special offers, teaser ads and product information requests (Barwise, et. al., 2002). When defining SMS advertising, it is first necessary to understand the term of mobile marketing as this definition may in part apply to the definition of SMS advertising. Dickinger (2005), defines mobile marketing as the use of interactive wireless media to provide customers with time and location sensitive, personalized information that promotes goods, services and ideas, thereby generating value for all stakeholders.

The usage rate of SMS in many parts of the world as a B2C marketing channel via wireless devices such as mobile phones. Even though music, videos, sounds ares used less than SMS, rapid growth in mobile technology increased the rate of usage of them. SMS marketing can provide advantages like lower cost than other media channels.

According to Kavassalis (2003), SMS advertising as the use of short message service (SMS), sent to consumers' mobile phones, to provide consumers with time and location sensitive information that promotes goods, services and ideas, thereby generating value for all stakeholders. Jamestown (2013) stated that SMS advertising, also known as text message marketing, allows businesses and organizations to communicate mobile coupons, specials, alerts, event reminders and more via highly targeted, opt in text messages because 98 percent of all text messages are read and therefore SMS marketing is quickly becoming an extremely popular stream for marketers to communicate to their customers.

Mobile couponing is one type of specific promotion tool wich integrates classic couponing with mobile communications (Wehmeyer, 2005). *"Advertising funded information services include news, weather, traffic, market rates, horoscopes, or songs*

just played on the radio" (Dickinger, 2004). User may pay little or nothing for this kind of services and information. Companies are changing their focus from mass marketing media to more targeted personal media and replacing them with more personalized media (Leppäniemi, 2008). Customer Relationship Management (CRM) is supported by text messages by allowing registered consumers to receive newsletters, special discounts, prizes and coupons (Dickinger, 2004).

3. UNDERSTANDING BUYING BEHAVIOR

Companies try to understand about consumer behavior in order to be able to convince people to buy their product instead of others. People buy most products because of the way their purchases make them feel, they buy products for emotional reasons. (Hopkins, et. al., 2012)

A study at Baylor University asked 67 people to do a blind taste test of Coke versus Pepsi. The results showed that about 50 percent liked Coke and about 50 percent liked Pepsi. When the university conducted o nonblind taste test – when people knew which brand they were drinking – 75 percent of them preferred Coca-Cola. It can be stated as a result that Coca Cola has more deeply ingrained imaginary than Pepsi does. (Varnalı, K., Toker, A., Cengiz, Y., 2012)

3.1 Perceptions And Attitudes

Attitude is a major factor in information systems and marketing researches. Attitude is outcome of what we say, feel and know. According to Antonides (1998), *"Attitude is the individual predisposition to evaluate an object or an aspect of the world in a favorable or unfavorable manner." For Solomon (2009) "Attitude is a lasting general evaluation of people (including oneself), objects, advertisements or issues."* It is important to highlight that attitude toward mobile advertising refers to consumers' attitude toward advertising in general rather than one specific type of advertisement (Haghirian, 2008). Our feelings about product advertising are directly effecting how we feel about the product itself (Solomon, 2009). General public attitude toward advertising has been a main concern and focus for a long time.

Even tough old studies show that there is an unfavorable manner toward advertising among consumers; some researchers found that there is favorable view of advertising. However, situation in mobile marketing and advertising may differ. According to Dickinger (2004) mobile marketing is "Using interactive wireless media to provide customers with time and location sensitive, personalized information that promotes

goods, services and ideas, thereby generating value for all stakeholders". According to Xu (2007) it can be expected that mobile advertising is more valuable for consumers when considering location based services and time sensitive events. Xu (2007) also stated that personalization of mobile content can change the negative attitude of the public toward advertising.

Users' intention to adopt and engage in mobile marketing practices are affected significantly by perceptions about the mobile marketing message, the application, and the medium itself. These perceptions predict consumers' attitude toward mobile marketing which, together with social/peer pressure, are the most important direct drivers of willingness to engage in and accept mobile marketing. Therefore, knowledge regarding user perceptions of various dimensions of mobile marketing would provide valuable input for personalization plans in the process of designing effective mobile marketing messages and applications. (Varnalı et. al., 2012)

3.1.1 Factors that affecting mobile consumer attitudes

This part of the research will present current theories and models in the relevant literature to discuss different variables that playing a role in consumer's attitude toward mobile marketing. According to Xu (2007), entertainment, informativeness, irritation creditability of the marketing campaign and personalization of the message effect the consumer attitude. Xu's model of factors contributing to attitude and intention toward mobile advertising is shown in Figure 1.1.

3.1.1.1 Personalization and content

According to Xu, 2007 by personalizing the mobile advertising message consumer attitude can be improved. There is a direct correlation between content (Informative, irritation, credibility and entertaining variables of the content), of mobile marketing and personalization with consumer's overall attitude.

Personalization: Personalized SMS advertising refers to sending advertising messages to mobile devices, based on user demographics such as income, user preference such as preferred product, context for example location and user activities and content such as brand name factors. Robin (2003) stated that consumers would like the content of mobile services to be customized to their interests and relevant for them.

Personalization of SMS advertising can enable marketers to reach their potential customers in a very individual way thus increase the relationship with the consumers. Most companies use personalized promotions to each individual consumer to promote their products and to increase their sales. Especially in mobile market, mobile phones are highly personal, rarely used by anyone except their owners. They are also equipped with a SIM card that can store personal information and identity. According to Latto (2014) for teenagers, a mobile phone is used as a means of self-expression, as its features, are personalized to reflect the preferences of its user. And for adults, the mobile medium becomes more personal when it contains important information, such as contacts and messages.

Personalized advertising improve the experience for companies and consumers (Dickinger, 2004). Success of the target marketing is based on well-structured and maintained databases. By allowing mobile advertising providers to collect data about demographics and location of the consumers, personalization improves the quality of mobile commerce and turns it into important medium (Xu, 2007). The impact of the message can be increased by personalizing the message (Dickinger, 2004).

Marketers are gaining the advantage of personalization of the message and collecting consumer feedback and their choices, this is improving customer relation by enabling companies to communicate with them in very individual way (Haghirian, 2005). Personalization of the message is not only making consumer more favorable about the mobile advertising, it is also improving the consumer attitude by turning unfavorable attitude to favorable attitude (Xu, 2007).

It is obvious that privacy concerns of the consumer is crucial and must be taken into account. Because of the personal nature of handheld mobile devices, mobile marketing campaigns should ultimately be permission-based. (Varnalı et. al., 2012) Barnes and Scornovacca, 2004 as cited in Leek, 2009, personalized marketing messages are adding value to information service, and there is also a potential of decreasing the negative reaction of the consumer. Ho and Kwok, 2003 indicate that with personalization, the amount of messages sent to the customers will be reduced, and the users will no longer receive numerous irrelevant messages. Although the number of messages should be high enough to remind customers about campaigns, a very high number of messages has a negative impact on perceived mobile advertising value,

which ultimately causes negative perceptions about the brand and frustration with the mobile operator.

Content: Most of researchers argue the importance of content in mobile marketing. According to Xu (2007) personalization, entertainment and informativeness are the attributes of content that have positive effect on overall attitude, but irritation has negative impact on overall attitude.

Attributes of the content are defined by Haghirian (2005) as entertainment, informativeness, credibility and irritation. According to Leppäniemi (2004) content of the message is crucial in all type of advertising and it is also valid in mobile advertising. In order to communicate properly and efficiently with consumers, underlying factors of mobile advertising must be identified. Information and entertainment are found to be the most important acceptance attributes of mobile marketing (Bauer, 2005). Although it is the vale tendency of the individual or the purpose of usage that determines the relative importance of these benefits in influencing the customer's intention to use mobile services, generally both have been found to have a significant impact on consumer attitudes. Users who engage in mobile marketing in pursuit of a specific outcome (e.g., participating for a monetary gain, making an urgent transaction, booking a ticket, looking for a destination) would value informativeness, and simplicity more than its entertainment and enjoyment value. (Varnalı, et. al., 2012)

Entertainment: The mobile devices has become an important media and entertainment platform. In the mobile entertainment industry, there are plenty of entertainment services such as music downloading, games, gambling, net television, video and sport matches, which have set a stage for an explosion of mobile entertainment industry. Entertainment is also a crucial factor for mobile marketing. Bauer, Reinchardt, Barnes and Newmann (2005) in their study revealed that consumers' perceived entertainment utility of mobile marketing has a positive influence on consumers' perceptions of the overall utility of mobile marketing, which in turn has a positive influence on consumer attitudes towards mobile marketing.

According to Tsang (2004) entertainment is the most important attribute of the content that has an impact on overall attitude. Customer loyalty can be increased with entertainment services, furthermore extra value can also be created for costumers.

Entertaining messages with creativity is holding potential to generate positive attitude toward mobile marketing activity among consumers. Research conducted by Tsang, 2004 found that entertainment is the major attribute that affects consumer attitude toward mobile advertising.

Informativeness: Assuming the mobile platform as a relatively new marketing channel, marketing centered activities like content and information sharing are main motivations for consumer acceptance of mobile marketing (Sultan, 2010). The user needs easy access to the information that he or she is looking for. The main difference between personalized mobile marketing with informativeness is that personalization highlights the individual preferences and adjusted to personal needs and interests (Xu, 2007). Informativeness can be defined as the ability of advertising to inform consumers of product alternatives so that purchases yielding the greatest possible satisfaction can be made.

A key role of advertising is to generate awareness of products and to make consumer aware of how competing products are different. One of the advertising goals is to inform audience about new products or new features of existing products, also make audience aware of changes in products' price (Kotler & Keller, 2006). A study by Siau (2003) revealed that the quality of information placed on a company's web site shows a direct influence on the customers' perceptions of the company and the company's products. In addition, the study also reported that information delivered to customers via mobile device also needs to show qualitative features like accuracy, timeliness, and usefulness for the consumer.

Credibility: Credibility of advertising can also affect consumers' attitudes towards mobile advertising. It is defined by Lutz (1989) as how consumers perceive the brand is truthful and believable, which mentioned in the advertising. Credibility of the advertisement should be considered as an important variable when determining the attitude toward advertisement; in addition to that attitude towards advertisement and mood should be ignored when considering the impact of them on attitude toward advertisement.

The perceived credibility of the message content is related to trust toward the mobile marketer or toward the promoted brand. It is especially important in determining users' behavioral intention to click the wireless banner ads. (Varnalı, et. al., 2012)

Corporate credibility is defined as the extent to which consumers believe that a firm can design and deliver products and services that satisfy customer needs and wants and has been found to have direct positive effects on attitude toward the ad, the brand, and purchase intent (Choi & Rifon, 2002). According to Goldsmith, Lafferty and Newell (2000), credibility of an advertisement is influenced by different factors, especially by the company's credibility.

Irritation: There is a negative relation between attitude toward mobile advertising and irritation. Hence marketers should avoid irritattive marketing campaigns.

According to Haghirian (2005) confusion among consumers may cause negative reaction toward mobile advertising. Complex mobile advertising message can cause irritation among consumers, and this disturbance decrease the value of the advertising for consumers. Frequency of messages is also very important issue for customer. Companies may prefer that the number of messages should be high enough to remind customers about campaigns. But it is total opposite from customer point of view. A very high number of messages would have a negative impact on perceived mobile advertising value, which ultimately causes negative perceptions about the brand and frustration with the mobile operator.

SMS advertising can provide an array of information that confuses and distracts the recipient as well as overwhelms the consumer with information (Pietz and Storbacka, 2007; Stewart, 2002). This reckons that irritation caused by an incomprehensive or unwanted mobile advertising message, reflects negatively on the perceived advertising value of mobile marketing. Consumers may feel annoyed about irritating message and react negatively. Another point of possible annoyance is unwanted messages, commonly known as spam.

On the other hand mobile advertising has a very important function named as "opt-in" which provides end-users full control over the messages they receive, in that end-users demand for highly personalized service need to be reconcile with desire for privacy. Corporate policies need to take into account legalities such as electronic contract, electronic signature and condition for sending SMS messages. In Turkey Government has published a law regarding E-Trade on November 5, 2014 in the Official Gazette, so as to enter into force on May 1, 2015. According to the Law mainly covered to subjects: e-trade and commercial communications; commercial communications are

prohibited without prior consent of the recipient as a rule. Law brings exception to telecom operators' own goods and services by allowing "opt out" method. This means mobile operators are subject to receive confirmation for "opt-in" in order to send mobile advertising messages beyond their own products/services. And such "opt-in" subscriber permission should not be transfer to third parties without full permission from subscribers.

Concordantly, several different ways are available in order to decrease the annoyance of mobile advertising. One way can be permission-based advertising. It is stated that consumers are needy of some control in order to accept advertising into their mobiles. This refers simply to people control over when, where, what and how much advertising to receive into the mobile (Carroll, Barnes, Scornavacca & Fletcher, 2007). The difference between permission based advertising and traditional irritation advertising is that messages about specific products, services, or content are sent only to individuals who have explicitly indicated their willingness to receive the message. As indicated by Scharl, Dicinger & Murphy (2005), a simple registration ensures sending relevant messages to an interested audience.

3.2 Perceived Usefulness and Ease of Use

Several different researchers found that there is a powerful relation with user behavior and perceived usefulness and perceived ease-of-use (Davis, 1989). Perceived ease-of-use and perceived usefulness are important variables when considering consumer adoption process of technologies (Soroa-Koury, 2010). Theoretical model of Soroa-Koury (2010) shown in Figure 3.1 below.
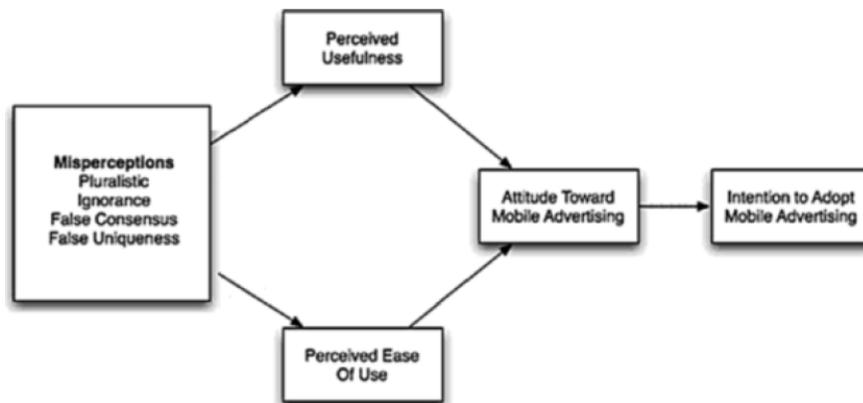
Figure 3.1: Theoretical model.

Individuals' acceptance is explained by Davis, 1989 with Technology acceptance model, and main drivers of this model are perceived usefulness and perceived ease-of-use. Perceived usefulness and perceived ease of use can be defined as predictors of attitude towards mobile advertising.

3.2.1 Perceived usefulness

Perceived usefulness is defined by Davis (1989) as "The degree to which a person believes that using a particular system would enhance his or her job performance". There is a positive correlation between perceived usefulness of mobile commerce and consumer satisfaction in mobile commerce environment (Lee, 2007). The study conducted by Soura-Koury (2010) also found that perceived usefulness is one of the key variable for prediction consumer attitude toward mobile advertising.

3.2.2 Perceived ease of use

Perceived ease-of-use Is the evaluation of the user of how easy for him or her to interact with technology or particular information system (Zhiping, 2009). Perceived ease of use, in contrast, refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989).

3.3 Consumer Attention

Drawing consumers' attention is largely dependent on the content and context of the message. Consumer has received many advertising messages. In the case sending simple and common advertising messages, consumers would not wonder, even they would not read the message and delete it. Therefore, effective personalization and remarkable content are the key factors to increase attention, which in turn positions the offering into customers' cognitive set of available alternatives to try.

Attention is an important premise of consumer behavior, which sometimes may lead to impulsive trial of the offering. Although they are both components of the consumer's black box, consumer attitude toward a marketing offering is another strong determination of attention, because, individuals with a persistent interest in a product class are more likely to pay attention and to expend cognitive effort in processing the message of relevant advertisements (Varnalı et al., 2012)

3.4 Consumer Response

User acceptance is considered to be a critical success factor of mobile advertising. Rettie's (2005) empirical research concerning response rates and branding effects utilized 26 mobile advertising campaigns in the UK. Interviews and survey research indicated that overall 44 per cent of the respondents considered mobile advertising to be acceptable where as only 21 per cent found it fairly or very unacceptable. Acceptance was significantly correlated with campaign interest, campaign relevance and monetary incentives. In addition, it was found that age was inversely related to acceptability. In other words the younger the respondents were the more accepting they were toward mobile advertising.

According to Heinonen and Strandvik (2007), three groups of responsiveness were found; those that are not responsive, those that are neutral and those that are responsive and are therefore willing to receive mobile advertising. Consumers between the ages 21 and 30 were found to be most responsive and consumers above the age 31 were the least responsive. Heinonen and Strandvik (2007) conclude that their empirical research confirmed that the mobile is considered more personal than traditional media and for this reason marketers should focus especially on the relevance of their messages on the mobile medium.

Leppäniemi (2008) studied how responsiveness to mobile marketing is related to demographic variables such as gender, age and income. The results of a survey study in Finland demonstrate that men and women differ in respect to responses to mobile marketing. Moreover, in general women tend to more actively participate in SMS competitions. Leppäniemi also found that age has a significant impact on responsiveness. According to the results, consumers in the age group of 36-45 years were the most responsive. However, income seemed to have no effect. The results of studies concerning responsiveness to mobile marketing seem to provide significantly contradicting results. Rettie's research in Britain suggested that younger consumers responded more positively toward mobile advertising where as in Finland the situation is the opposite. However, the differences between these results may in large part be due to cultural differences. The contradicting results in Finland indicate that more research is needed to fully understand differences in responsiveness between Finnish consumers.

In mobile marketing campaign, the need to establish ways to identify consumers and their interaction is paramount. The personal nature of mobile handheld devices and the technological infrastructure that mobile marketing works on enable micromeasurement of advertising effectiveness. According to Varnalı et al, 2012, there are two kinds of metrics; exposure rate and interactivity data. Exposure rate reveals the reach of the advertisement and is usually measured by the number of times a visitor is exposed to the wireless ad. Although exposure measures are important in terms of measuring visibility of the ad and its reach, they do not measure effectiveness of the ad in terms of generating consumer response. Click-through rate is the most straightforward and accountable advertisement return rate measurement method that counts the number of visitors that actually click on a particular banner advertisement, or respond via SMS or IVR. SMS exposure is quite difficult to measure, because marketers can only statistically infer that a receiver actually read the SMS message instead of directly deleting it. Exposure and click-through measures are related to consumer awareness and attention, but they do not say much about consumers' like or dislike of the marketing communication or attitude change toward the marketed brad or service.

Both exposure and interactivity metrics are important in assessing the effectiveness of the marketing campaign in terms of linking the advertisement with consumer outcomes. Exposure data measure consumers' awareness/attention, and interactivity data measure consumers' comprehension and like or dislike of the target ad. Mobile marketing campaigns are unique in terms of their ability to measure the real-time consumer response to a marketing stimulus due to the "always on" and "always with the user" characteristics of mobile devices. (Varnalı et al., 2012)

4. MARKET SEGMENTATION THEORY

4.1 Market Heterogeneity and Need for Segmenting

Market segmentation is the most important decision that companies face in the global marketplace. The identification of market segments (i.e. country groups and within-country segments) and physical product configurations both assist in the determination of global marketing strategy and a global marketing strategy needs to be integrated in the overall global strategy of a company. This process occurs in a competitive context with other brands under the same product category or in cases of competing categories that seek to satisfy buyer desires (Kotler and Armstrong, 2012).

For centuries, psychologists have attempted to fit human beings into tight little compartments in order to explain their behavior. Faced with a bewildering array of variables (demographic characteristics, geography, millions of branded products, and a growing number of advertising media) marketers rush to embrace systems that will allow them to predict consumer behavior reliably. Bickert (1998) mentions that aside from the desire to simplify an unmanageable number of elements or variables, today"s consumer marketers consider market segmentation systems in order to:

- Identify their key consumer segments,

- Recognize the varying importance of those segments to their business,

- Understand individual consumers by identifying the group,

- Use that newly-gained understanding to predict how consumers will react to new products, alter brand loyalties, respond to diverse media, etc.,

- Target new prospects more effectively, and communicate with both customers and prospects in order to establish and enhance relationships.

The purpose of market segmentation is to identify the consumption patterns by dividing a market into several homogeneous sub-markets. Marketers can formulate product strategy and positioning depending on those sub-market demands.

Homogenous sub-markets can be defined only with segmentation variables. Traditional demographic variables (gender, age, income, education) can classify and explain the main characteristics of the sub-markets. However, to identify the complete view of the characteristics psychographic segmentation variables are also needed (Kotler and Armstrong, 2012). Differentiation of consumer's brand preference should be also covered with consumer values and lifestyles in addition with demographic variables.

4.2 Dimension of Market Segmentation

According to Kotler (2012), there are four major segmentation dimensions commonly used. They are geographic, demographic, psychographic and behavioral segmentation. The example of variables on each type of dimensions of segmentation can be seen in Table 4.1 retrieved from Segmentation Study Guide website, on 10.04.2015.

Table 4.1: Dimension of segmentation.

Segmentation Dimentions	Examples
Geographic Segmentation	
Country/continent	England, UK, Europe
Region/area of the country	North India, West India, South India
City	İstanbul, New York, Los Angeles, Chicago
Urban/rural	Measured by the area's population density
Climate	Tropical, arid, alpine
Coastal/inland	Measured by distance to the coast
Demographic Segmentation	
Age group	Pre-teens, teens, young adults, older adults
Generation	Baby boomers, Gen X, Gen Y
Gender	Male, female
Marital status	Married, single
Family life cycle	Young married no kids, married young kids
Family size	Couple only, small family, large family
Occupation	Professional, trade, unskilled
Education	High school, university, vocational
Ethnic background	Turkish, African-American, Asian
Religion	Muslim, Christian, Jewish, Hindu

Table 4.1 (continued): Dimension of segmentation.

Psychographic Segmentation	
Lifestyle	Family, social, sporty, travel, education
Values (VALS)	VALS = values and lifestyles
Social class	Upper class, middle class, lower class
Personality/self-concept	Ongoing, creative, innovator, serious
Activities, interests, opinions (AIO)	Various hobbies, sports, interests
Behavioral Segmentation	
Occasion	Birthday, anniversary, Valentine's Day
Buying stage	Ready to buy, gathering information only
User status	Regular, occasional, never
Usage rate	Heavy, light
Loyalty status	Loyal, occasional switcher, regular switcher
Brand knowledge	Strong, some, none
Shopping style	Enjoys shopping, functional, avoids
Involvement level	High, medium, low

4.2.1 Geographic segmentation

The geographic segmentation divides customers into segments based on geographical areas such as nations, states, regions, counties, cities or neighbourhoods. Companies can target one or more areas and must be aware of the fact that data according to geographic segmentation may vary due to population shift (Pickton and Broderick, 2005).

Segmentation according to geographic is important, due to the fact that the purchasing behaviour of the customers are influenced on where they live, work, take a vacation or spend time. Therefore, many companies customize their products, advertising, promotion and sales efforts to fit the needs of the geographical variables. To give an example mobile operators prepare their some of tariffs specific to the region of their customers such as (Izmir tariff, Güzel Şehrim Karma etc.)

The geographic segmentation is furthermore useful when there are differences in a location where a product is marketed. The differences can be caused by cultural factors, traditions, politics etc. and furthermore the differences can be significant in

one segment, whereas in other segments the differences can be minor and less significant.

Additionally, because of an increase in the globalisation today the geographic segmentation has been linked to other differences in socio-economic and demographic characteristics. The result of this type of segmentation is referred to as geodemographics (Gunter and Furnham, 1992).

4.2.2 Demographic segmentation

In demographic segmentation, market is divided into small segments based on demographic variables such as age, family size, family life cycle, gender, income, occupation, education, religion, race, generation, nationality, and social class (Armstrong and Kotler, 2012).

Demographic variables are the most popular dimensions for distinguishing customer groups. Because, consumer wants, preferences, and usage rates are often associated with demographic variables. Additionally, they are easily measured and often vary closely with consumer needs and usage rates (Ferrell and Hartline, 2008).

The complexity and costs of the scheme also stay relatively low. Although the target market is distinguish using non-demographic terms, the link back to demographic characteristics is required in order to be able to profile the market segment by measuring the size of the market and selecting the media that should be reach the segment efficiently.

4.2.3 Age and life-cycle segmentation

The consumer's needs and wants change with age. Therefore, some companies use age and life-cycle segmentation, where age and the life-cycle determine the marketing approach. Using telephones (fixed and mobile) as an example the marketers should take into consideration that although some 70-years-old use a fixed telephone, e.g. due to the lack of technological knowledge, others may only use a mobile phone. Thus, marketers using the age and life-cycle segmentation must be careful to guard against stereotypes. (Armstrong and Kotler, 2012)

Additionally, the age and life-cycle segmentation are associated with behavioural characteristics and buying patterns. An example of this is teenagers who do not earn money, have tendency to buy cheaper mobile tariffs. This is opposed to professionals worked as white-collar and got high levels montly income thereby they prioritize their economy different and more probably prefer premium tariffs.

4.2.4 Gender segmentation

Gender differences also mostly used by marketers as woman and man tend to have different attitudinal and behavioral orientations. The gender segmentation has long been applied in connection with clothing, hairstyling, cosmetics and magazines. Furthermore, it must be taken into consideration that metro sexuality has become a common gender-factor and thus the marketers must not only define a product as being masculine or feminine (Armstrong and Kotler, 2012).

Mobile operators can be differentiate their products and services between man and woman customers. For example, genarally men are more interested in sport activities and more likely to buy services related with sport such as weekly football news packages. Similarly women have strong tendency for fashion and more likely to buy any product related with fashion.

4.2.5 Income segmentation

Income or socioeconomic status is another important demographic variable because it determines whether a consumer will be able to afford a product. Income or socio-economic characteristic comprises information about consumer personal income, household income, employment status, disposable income, and asset net worth.

Persons in the same part of the life cycle may differ in their life stage. Life stage defines a person's major concern, such as going through a divorce, going into second marriage and many more (Armstrong and Kotler, 2012). It is used in automobiles, clothing, cosmetics, financial services and travel. Many companies within the mentioned categories seek to target the high-income customers. Others seek to target the customers with a lower income in order to gain consumer loyalty and lessen the competitive pressures. However, companies must consider the fact that the income

does not always predict the most suitable customers for a given product due to the fact that some customers may have other preferences and prioritize their money different.

4.2.6 Generation segmentation

Each generation is influenced by the times in which they grow up i.e. the music, the movies, politics and other significant events characteristic of that period. Marketers therefore market to a generation by using icons and images that is relatable according to the generation (Kotler and Keller, 2009).

4.2.7 Social class segmentation

Social class segmentation divides the customers according to their preferences in cars, clothing, home furnishings, leisure activities, reading habits and retailers. However, although the tastes of social classes changes, many companies design products for specific social classes (Kotler and Keller, 2009).

4.2.8 Psychographic segmentation

The psychological variables derive from two principal types of customer; personality profiles and lifestyle profiles (psychographics). The main purpose of psychographics is to obtain a better understanding of the consumers as a person by measuring him/her on multiple psychological dimensions as well as on the way s/he lives, things in which s/he is interested, and his/her opinion on a diverse range of products and services. While the traditional geographical and demographical bases (sex, age, income etc.) provide the marketer with accessibility to customer segments, the psychological variables provide additional information about these and enhance the understanding of the behaviour of present and potential target markets. (Kotler and Armstrong, 2012)

Psychographic segmentation divides people according to their attitudes, values, lifestyles, interests and opinions (Pickton and Broderick, 2005). Marketers have understood that to attract or motivate a particular group of consumers, it is necessary to know how they think and what their values and attitudes are, as well as who they are in terms of the traditional demographic variables. Because the changes in person, family and occupation throughout life affect buying behavior, psychographic and demographic segmentation bases are often used in combination to better identify

28

market segments. Behavioral variables, e.g. usage rates, can also be used to complement a psychographic segmentation scheme. (Kotler and Armstrong, 2012)

People differ in attitudes, interests, and activities and these affect the products and services they use. The most widely used approach to measure lifestyle is by using activities, interests, and opinions (AlO) rating statements (Plummer, 1974). According to Plummer (1974), the lifestyle construct is operationalizes through a large amount of Likert-type statements covering following AIO categories:

- Activities: Reported behavior related to club membership, community entertainment, hobbies, shopping, social events, sports, vacation and work.

- Interests: Degree of excitement about and attention to achievement, community, family, fashion, food, home, job, media and recreation.

- Opinions: Beliefs about business, culture, economy, education, future, politics, products, self and social issues.

Some researchers also argue that constructs such as activities and attitudes are immediately affected by the environment and therefore, neither stable nor generalizable. A concept of values which then hierarchically ordered with AIO variables and product attributes is considered to be most closely related to actual behavior.

A value is considered as the innermost-driver of a person behavior. A value is a single central belief that transcends any particular object. Some marketers segment by core values, which is the belief system that underlies customer attitudes and behaviors. Core values also can go deeper on people desire and choice in long term. A widely-used tool for lifestyle segmentation is the proprietary VALS scheme that blends research of values, hierarchy of needs and sociology in its operation. VALS classifies all U.S. adults into eight primary groups based on psychological attribute and key demographics.

According to Kotler et al., (2009) Segmentations of VALS are as below and in Figure 4.1:

1. Innovators: Innovators are successful, sophisticated, take-charge people with high self-esteem.

2. Thinkers: Thinkers are mature, satisfied, comfortable, and reflective people who value order, knowledge, and responsibility.

3. Achievers: Achievers are motivated by the desire for achievement. Achievers have goal-oriented lifestyles and a deep commitment to career and family.

4. Experiencers: Experiencers are motivated by self-expression. As young, enthusiastic, and impulsive consumers, Experiencers quickly become enthusiastic about new possibilities but are equally quick to cool.

5. Believers: Like Thinkers, Believers are motivated by ideals. They are conservative, conventional people with concrete beliefs based on traditional, established codes: family, religion, community, and the nation.

6. Strivers: Strivers are trendy and fun loving. Because they are motivated by achievement, Strivers are concerned about the opinions and approval of others.

7. Makers: Makers are practical, down-to-earth, self-sufficient people who like to work with their hands. They search products for practical or functional purpose.

8. Survivors: Survivors live narrowly focused lives. With few resources with which to cope, they often believe that the world is changing too quickly.
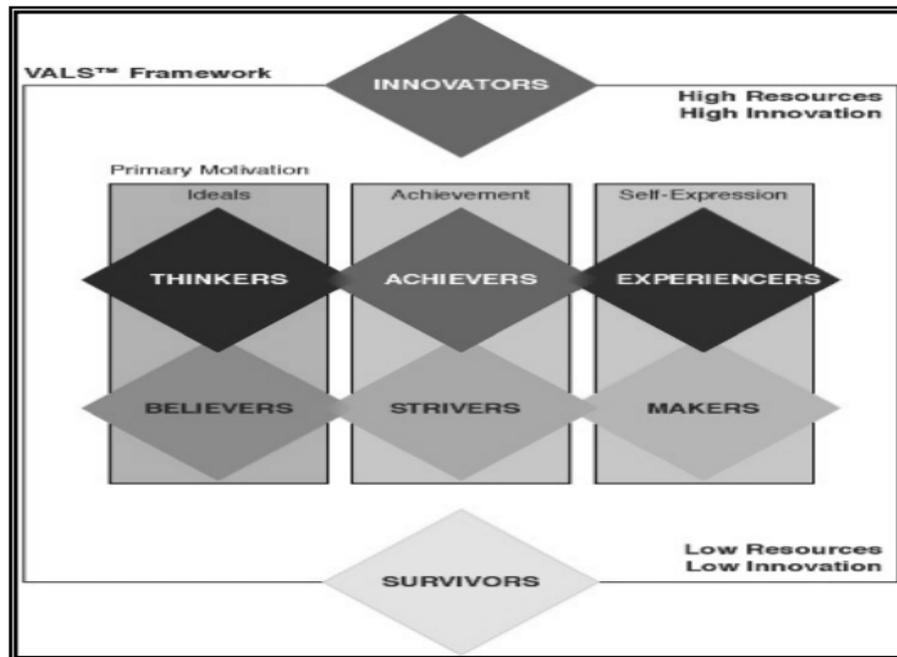
Figure 4.1: VALS scheme.

Psychographics is one technique among many, and with a qualitative motivation research approach, it can provide information about customers unavailable with quantitative methods. Psychographic segmentation techniques should therefore be used to enrich the understanding of target markets and augment the total package of market segmentation tools. (Hamka, 2012)

4.2.9 Behavioural segmentation

Behavioral segmentation focuses on the behaviors that consumer's exhibit in marketplace. Behavioralsegmentation divides buyers into segments based on their knowledge, attitudes, and responses to a service or product.

Behavioral variables represent an excellent segmentation tool, for as data are collected concerning the manner in which consumers actually behave in the marketplace, the information will allow marketers to gain a better understanding of consumer behavior (Reid and Bojanic 2009). Behavioral segmentation relies on historical data to predict what the customer will possibly do in the future. For example taking into account all of the other products a customer has bought from the retailer and determining how closely those purchases correlate -individually and in aggregate- with the specific product/ brand is a behavioral segmentation approach. Essentially, it means that if customers have bought products A, B, and C, they are also likely to buy product D. (Kotler and Armstrong, 2012)

4.2.9.1 Occasions

Marketers can define different customer groups according to occasions when customers have the idea to buy or use the purchased item. In specific time of year marketing strategies of a product can be differ from each other. To give an example, by the idea that the couples get marriet most probably in summers mobile operators can set nuptial tariffs or bundle VAS services related with the marriage to existing mobile packages. Another example is that the companies may choose one kind of marketing strategy around Christmas and another at Valentine's Day in February and thus being able to target as many desired target customers as possible. (Kotler and Armstrong, 2012)

4.2.9.2 Benefits

Benefit segmentation divides the customers according to the different benefits they may seek from a product. Benefit segmentation seeks to find the benefits people look for in a certain product, the kinds of people who look for each benefit and the brands that deliver each benefit.

4.2.9.3 User status

By segmenting according to nonusers, ex-users, potential users, first-time users and regular users of a product a company can customize its marketing for each group (Armstrong and Kotler, 2012). Where regular users of a certain product request one kind of marketing approach, potential users may request another kind of marketing approach, and thus it is necessary to divide the customers into different segments and target them in different ways.

4.2.9.4 Usage rate

The usage rate segmentation divides the customers according to how much they use a product. They are divided into groups of non-users, light, medium and heavy product users and companies often seek to target one heavy user rather than several light users (Armstrong and Kotler, 2012). This is due to the fact that the heavy users constitute a small percentage of the market but account for a high percentage of the total buying (Gunter and Furnham, 1992). Thus, a company should seek to adapt their marketing strategy according to these customers.

4.2.9.5 Buyer-readiness stage

Buyer-readiness stage refers to people's awareness and interest of the product. Some people are unaware of the product, some are aware, some are informed, some are interested, some desire the product and some intend to buy (Kotler and Keller, 2009). The purpose is to lead the customer along so he or she will purchase the product in the end.

4.2.9.6 Loyalty status

A market can also be segmented according to the loyalty of the customers. It is assumed that customers are always loyal by buying the same product. These customers are referred to as hard-core loyals. Other people that are loyal toward two or three brands and buy these on a random basis are referred to as being split loyals. A third group of people are those who shift from one brand to another and staying with that brand for a period until they shift to another brand. These customers are referred to as shifting loyals. The fourth and final group of loyals are those who do not show loyalty or preference towards one particular brand, but rather buy a product or 3 brand that is on sale or available at the time of the occasion. These customers are referred to as switchers (Kotler and Keller, 2009).

4.2.9.7 Attitude

An attitude can be defined as a learned predisposition to respond in a consistently favourable or unfavourable manner with respect to a given product. People can be divided into segments based on whether they have an enthusiastic, positive, indifferent, negative or hostile attitude toward a product. Changing attitudes is generally very difficult, particularly when consumers suspect that the marketer has a self-serving agenda in bringing about this change. By considering the customers' attitudes toward a brand or product, the company will get a wide-ranging view of the market and its segments. (Kotler and Armstrong, 2012)

4.3 Segmentation Process

Segmentation has developed from the key premise that markets are heterogeneous (Hirschman, 1980). Business markets appear to fulfill this criterion for two reasons. First, the diverse number of end-uses for a product means that customers can belong to an equally diverse number of industries. Second, within an industry, the application of the product can vary considerably, meaning that customers could seek different product benefits (Powers, 1991).

Market segmentation is the marketing process of identifying and breaking up the total market into groups of potential customers with similar motivations, needs or

characteristics, who are likely to exhibit homogeneous purchase behavior. Undertaking this process allows marketing efforts to be targeted at select groups.

An effective segmentation process involves three distinct steps: marketing analysis to gain knowledge or current marketing intelligence; strategy development to formalize ideas; and, marketing programs to action the determined revised segmentation strategy (Atak, 2009).

As Figure 4.2 shows, segmentation process starts with analysis in which the bases are selected. Then, segmentability and target market selection stage comes which performs the evaluation of segmentation. After the appropriate selection of segments, implementation of segmentation starts with resource allocation that is followed by control of segmentation. When the process is over, outcome of the segmentation is expected as competitive advantage. Factors contributing to attitude and intention toward mobile advertising can be seen in figure 4.2.
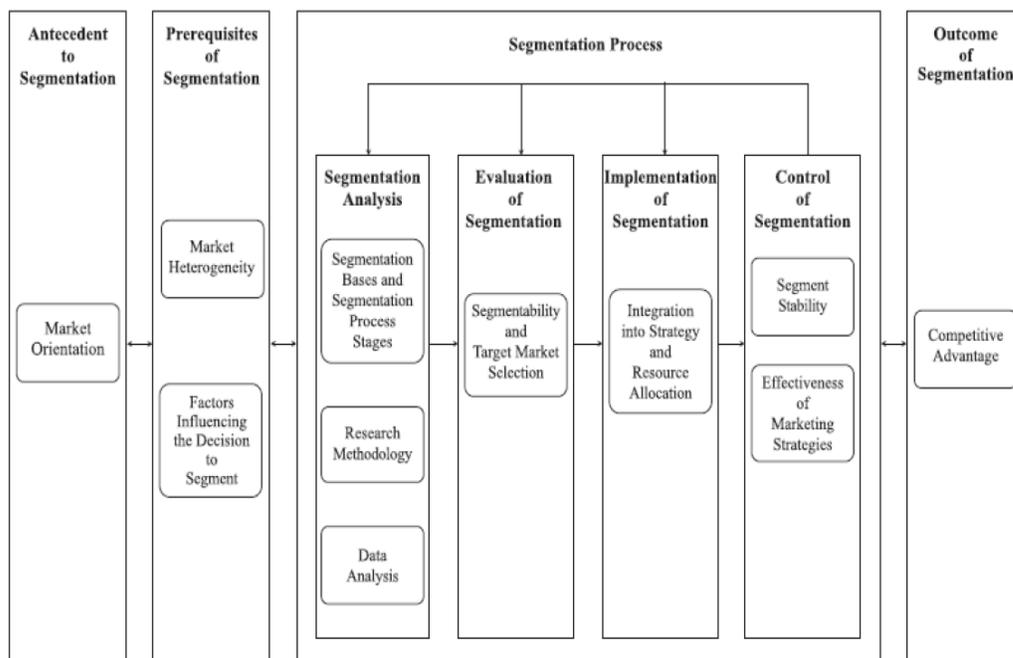
Figure 4.2: Factors contributing to attitude and intention toward mobile advertising.

Although there is no guarantee, which market segmentation process that is the most successful in term of market share and revenue; one should meet basic requirements that are needed to be effective in marketing arena. Kotler (2003) for example, define 5 criterias that should be met by market segment which are:

- Measurable: The size, purchasing power, and characteristics of segments can be measured

- Substantial: The segments are large and profitable enough to serve

- Accessible: The segments can be effectively reached and served

- Differentiable: The segments are conceptually distinguishable and respond differently to different marketing-mix elements and programs

- Actionable: Effective programs can be formulated for attracting and serving the segments

Wedel and Kamakura (2003) alternatively has provided six criteria that have been frequently used to determine the effectiveness and profitability of marketing strategies. They are identifiability, substantiality, accessibility, stability, responsiveness and actionability. Identifiability is the extent to which managers can recognize distinct groups of customers in the marketplace by using specific segmentation bases. The substantiality criterion is satisfied if the targeted segments represent a large enough portion of the market to ensure the profitability of targeted marketing programs. Accessibility is the degree to which managers are able to reach the targeted segments through promotional or distributional efforts. If segments respond uniquely to marketing efforts targeted at them, they satisfy the responsiveness criterion. Only segments that are stable in time can provide the underlying dimensions for the development of a successful marketing strategy. Therefore, stability is necessary, at least for a period long enough for identification of the segments, implementation of the segmented marketing strategy, and the strategy to produce results. Segments are actionable if their identification provides guidance for decisions on the effective specification of marketing instruments. (Kotler and Armstrong, 2012)

4.4 Segmentation In Mobile Marketing

Businesses from all industry sectors use market segmentation in their marketing and strategic planning. Customer needs are becoming increasingly diverse. These needs can no longer be satisfied by a mass marketing approach.

This issue "Segmentation" has been of capital importance for mobile operators as they market their products/services and also use commercial communications. Mobile

marketers can better target key groups of mobile users by segmenting them according to specific qualities, goals, and behaviors that motivate and define different user groups (Atak, 2009).

Mobile is a completely personal device and media experience. Mobile users all behave in different ways and have different interests that may affect or cause that behavior. For a mobile operator with millions of subscribers, it becomes important to understand how each subset of his consumers behaves so he can take action to serve them relevant and targeted content while also boosting engagement. (Kotler and Armstrong, 2012)

Current mobile phone development has changed the marketers in dealing with customers. As the mobile phone users are more integrated to their phone and they possess different value, needs and characteristic in adopting, using or purchasing the mobile services, new type of market segmentation is needed. Walsh, White and Cox (2010) argue that mobile phone involvement represents a person's cognitive (such as the extent to which a person thinks about their mobile phone when not using it) and behavioral (such as constantly checking the mobile phone for missed messages or calls) association with their mobile phone. Thus, mobile phone involvement is a broader construct than frequency of use due to its encapsulation of both the cognitive and behavioral aspects of mobile user.

Mobile phone technology and functionality has changed and evolved which also influence the consumption behavior of mobile user. A marketer should not rely on the same marketing segmentation strategy as the market demands and needs also changed in matter of time. For mobile user, usage of mobile service is becoming more integrated with their social life, behavior and personality. Therefore, a marketer is required to have better technique in understand their customer needs and characteristic. By understanding their consumer needs and characteristic, a marketer can develop and introduce their product and service that meet the consumer requirement, hence helping marketer to be more effective in term of marketing effort in the mobile market place (Atak, 2009).

5. LOCATION BASED SERVICES (LBS)

5.1 Introduction to Location Based Services

Location Based Services are services, which are enhanced with and depend on information about a mobile station's position. This kind of information has no meaning if it is presented as is. It has to be correlated with some types of services. Location Based Services take up the role to supply the user of these services with customized information according to his/her position. (Ververidis - Polyzos, 2005)

According to Gravitate, Inc. (cited in Koeppel, 2001) there are different kinds of location base service. The first generation of services relies on the user to provide the location information manually, for example as a street address or postal code. The next generation of services has some built-in positioning ability that is sufficient to provide routing or proximity information, for example to find nearest restaurant or petrol station. The third generations of location based services have greater position awareness and thus can also deliver services in the push service category, such as notification aware application based on infrastructures, technologies and techniques that enable context information to be seamlessly offered to the end-customer.

Location-based services (LBS) use real-time geo-data from a mobile device to provide information, entertainment or security. Some services allow consumers to "check in" at restaurants, coffee shops, stores, concerts, and other places or events. Often, businesses offer a reward — prizes, coupons or discounts — to people who check in. Google Maps, Foursquare, GetGlue, Yelp and Facebook Places are among the more popular services.

Location-based mobile services can be classified in a number of ways; pull and push services. Services in the pull category enable users to pull information wherever and whenever required, whereas services in the push category utilize the position of mobile device to determine whether the user meets the criteria of a potential customer or service recipients. (Schiller and Voisard, 2004)

A major distinction of services is whether they are person-oriented or device-oriented. Person-oriented LBS comprises all of those applications where a service is user-based. Thus, the focus of application use is to position a person or use the position of a person to enhance a service. Usually, the person located can control the service (e.g. friend finder application).

Device-oriented LBS applications are external to user. Thus, they may also focus on the position of a person, but they do not need to. Instead of only a person, an object (e.g. a car) or a group of people (e.g. a fleet) could also be located. Categories and examples of LBS applications can be seen in Table 5.1 retrieved from Schiller and Voisard, 2004.

Table 5.1 : Categories and examples of LBS applications.

Person Oriented	Push Services	Pull Services
Comminication	Ex1: You get an alert from a friend zone application that a friend has just entered your area Ex 2: A message pushed to you asking whether you allow a friend to locate you	Ex 1: You request from a friend finder who is near you.
Information	Ex 3: You get an alert that a terror alarm has been issued by the city you are in	Ex 2: You look for nearest cinema in your area and navigation instruction to get there
Entertainment	Ex 4: You have opted to participate in a location based "shoot'em up" game are being attacked	Ex 3: You play an location based game and look for anathor opt in your area to attack
M-commerce and Advertising	Ex 5: A discount voucher is being sent to you from a restaurant in the area you are in	Ex 4: You request information on where your truck fleet currently is located in te country
Device-oriented		
Tracking	Ex 6: An alert is sent to you from an asset tracking application that one of your shipments has just deviated from its foreseen route Ex 7: You get an alert that your child has left the platground	Ex 5: You request information on where your truct fleet currently is located in the country

5.2 Why's of Location-based Services

5.2.1 Market condition

Recent market researches (Airflash, 2011) showed that consumers in Europe are ready and willing to pay for Location Based Services. Some indicative findings say that mobile subscribers would consider even changing mobile phone operator in order to gain access to location based services and pay up to 16 Euros as a monthly fee for these services. In the U.S mobile subscribes would pay as much as 50 Dollars to have GPS or other location technology built into a mobile phone, according to similar market research (Driscoll-Wolfe, 2012). Some critical success factors for the adoption of LBS, as identified by these researches, seem to be the following:

- Protection of mobile user privacy
- Easiness of usage
- Non-intrusive way of LBS operation

5.2.2 Competitors

Having established large customer bases, mobile operators will seek new ways to ensure customer loyalty by offering new types of services. Location Based Services are the most promising type of these services, also called value added services. Some of the advantages for mobile operators who offers Location Based Services are:

- Innovative service provision attracts new customers and enhances existing customer's loyalty to the provider.
- Revenue increase due to traffic generated by the use of such services.
- Capability to introduce new revenue streams through deals with third party companies (which specialise in LBS implementation and/or provision), in order to sell to these companies user location information. (Ververidis - Polyzos, 2005)

5.2.3 Technological developments

The first location based services are already offered to mobile phone users via WAP or SMS. Every mobile phone supports the SMS, WAP feature and there are many that

also support i-mode technology. This means that many customers can instantly make use of the location services provided. In addition the evolution from traditional GSM services to next generation access, which means a significant increase in the available bandwidth for data communication over mobile phones (from 8 mbps to 150mbps) will also assist the provision of location based services that in many cases can be bandwidth demanding. Finally new type of devices such as smart phones, tablets are entered the market giving greater capabilities for displaying information. (Ververidis - Polyzos, 2005)

5.2.4 Usage areas of location based services

Location Based Services are mainly used in three areas: military and government industries, emergency services, and commercial sector. First location system in use was satellite base GPS, which allows for precise localization of people and objects up to 3 meters or more accuracy. GPS is funded and controlled by the U.S. Department of Defense and built primarily to serve military purposes. In the 1980s, however, the U.S. government decided to make the system freely available worldwide in order to spark innovation around satellite technology. This means that any other governmental, emergency, or commercial service has the possibility to integrate GPS into equipment and services (Schiller and Voisard, 2004)

Mobile operators has always look around for new areas for future growth. Location based services can be classified in these new major area. The GSM Alliance Services Working Group has defined the following types of Location Based Services:

- Emergency Services

- Emergency Alert Services

- Home-Zone Billing

- Fleet Management

- Asset Management

- Person Tracking

- Pet Tracking

- Traffic Congestion Reporting

- Routing to Nearest Commercial Enterprise

- Roadside Assistance

- Navigation

- City Sightseeing

- Localised Advertising

- Mobile Yellow Pages

- Network Planning

- Dynamic Network Control

5.3 The LBS Value Chain and LBS Business Models for Mobile

Mobile operators will be challenged to ensure themselves a place in this new service sphere, but being the providers of location-enabled mobile phones, they have the greatest opportunity to do so. At the same time, third-party application developers help enable traditional industries to enhance the value proposition of their products by profiting from the availability of satellite and mobile positioning data (Schiller and Voisard, 2004).

Location based marketing gives businesses the capability to use mobile location data and insights into customer behavior to cater a specific, timely ad to a target audience member. The breakthrough here is that marketers have been given the opportunity to use customer history in order to catch their attention in real-time, and while in close proximity to a specific retail outlet. There are many different ways companies are using location-based marketing to connect with customers. A great example in the United Kingdom, the restaurant chain Subway launched a location based marketing campaign called "you are here". The campaign used LBS and MMS to targeted users who were within close proximity of a Subway restaurant. This is a terrific way to provide customer loyalty (Schiller and Voisard, 2004).

By tracking mobile devices technical address, it is possible to detect local position of the user in the environment of mobile commerce (Lee, 2007). One real-world example very similar to "you are here" is program which was introduced an example Avea, one of the mobile operators in Turkey, applied a real-time SMS game "Elmas Avı" by

using mobile devices position to allow users to interact with each other and gain mobile promotions while playing. When they check-in the first time in such location, they get 6 diamonds, 3 diamonds next check-in. When one customer collects 30 diamonds or more, s/he gain promotion as voice/SMS/data. The main idea is to encourage brand loyalty, (Atak, 2009).

Contextual marketing is also possible with location-based marketing. Example for contextual marketing, information or coupon about a specific product can be sent to consumer via mobile device while consumer is in the department store to buy specific product (Lee, 2007).

Location based marketing is positioned to have a huge impact on how marketers reach out to consumers, thanks to its capability to customize marketing messages based on a prospect's location and preferences (Hopkins et al., 2012).

SMS is the most used as location-based service. Outdoor clothing and gear supplier REI used ShopAlerts to engage consumers with time and location targeted messages. When consumers who had previously opted in to receive messages were near an REI location, they received SMS messages with special discounts at the store. ShopAlerts would increase their likelihood to visit a store. (Schiller and Voisard, 2004)

5.4 Femtocell: as a Locator

Femtocells provide coverage very small area up to 10 meters such as home, office or stores. In addition to this, they have a great capability to get location information of consumers in femtozone. This capability ensures a terrific advantage to mobile operators in their mobile marketing campaigns. Mobile operators can communicate with their subscribers using femtocell base station to connect the network while they are close proximity in a specific area (Smallcell Forum, 2012).

Femtocells are small, user-installed, cellular mobile phone base stations with very low power, typically designed for use in residential or small business environments. Femtocells connect to the mobile operator's network via standard DSL or Cable service. Femtocell technology purposes to provide high performance data communications and 3G+ voice coverage at home or small business environment. Femtocells have the potential to make indoor coverage for mobile communications widespread while giving additional benefits to both the mobile operator and end-user.

The subscribers get better 3G voice service and higher data speeds. The operator can be able to off-load traffic from the macro cellular network on these femtocell base station, with this method they can also be able to reduce infrastructure cost and provide extra capacity in their network (Bayt Technology, n.d.)

According to Marketwatch, the global femtocell device market was valued at $314.38 million in 2013 and is expected to grow at CAGR of 42.9% during 2013-2020. Increase in applications of Smartphone for availing value added services has fueled the growth of femtocell market. Reductions in cost of electronic equipments such as mobile phones, laptops and other internet devices have increased the demand for femtocell.

5.4.1 Femtocell applications

Femtocell as a Game-Changing device in the connected digital world. In the following, there are some of the basic femtozone service examples, to give an idea of the type of services enabled by the femtocell.

- Family Alert Service: When a family member arrives home or leaves, the femtocell automatically sends an SMS message. For example, a parent at work can be notified that their child has arrived home from school.
- Virtual Home Number: A "home" phone number that rings on all the handsets at home when a call comes in to that number.
- Media Synchronization: Ability to synchronize music tracks and video clips automatically between a mobile handset and a home PC.
- Photo Upload: Ability to upload photos automatically from the handset to a home PC when handset arrives home and display the photos to a digital picture frame.
- Contact/Calendar Synchronization: Ability to synchronize handset calendar/contacts with home personal and family calendars/contacts every time the handset arrives home.
- Remote Control: Ability of the mobile phone to function as a remote control for home devices (DVR, DVD, TV) when it is in the home.
- Mobile Video: Ability to stream videos from DVR/DVD player directly to your mobile phone.

- Family Tablet: Ability to enable a group of family communication features on an in-home display to show the geographic locations of household members, display household calendar and reminder messages, access voicemail and text messages, and store and display pictures from the mobile phone.

- Virtual PBX: In an office setting, the femtocell combined with IP-PBX software on the corporate network can make mobile phones into virtual extensions on the office phone system.

- Point-of-Sale promotion: Femtocells in retail spaces allow merchants to detect customers' presence and provide welcome messages, coupons, and store directory service.

In this study, "Point-of-sale promotion" function will be deeply analyzed to implement mobile marketing campaign.

6. RESEARCH DESIGN

6.1 Aim and Scope of the Researh

This research provided a unique opportunity to look at the impact of content factors on consumer attitudes and the effect of segmentation and using location data for targeted customers on the success of mobile marketing campaigns.

According the results found in the research done by Tsang et al. (2009), entertainment, credibility, irritation and informativeness are significant factors affecting respondents' attitudes toward mobile advertising. In this research, among these four factors informativeness is primarily analysed in the sample survey as named study1. Therefore, the model established by Xu (2007) is analysed to show that it is valid in Turkish consumers' context too.

In study 2, the levels of informativeness have been tested as to see whether giving more detailed information attracts more favourable response from consumers. Moreover, since sending the most appropriate and appealing content to mobile customers is important as to ensure improved positive attitude toward the marketer and higher purchase intention, two campaign SMSs designed with less informative and more informative contents have been delivered to both mass and segmented customer groups. The observed responses have been measured. Thanks to this study, effects of segmentation over customer buying behavior could be analyzed.

Additionally in study 3, location data of the customer considered to be determinant for the purchasing behaviour. In this scope specific two campaign SMSs designed with less informative and more informative contents have been delivered to both segmented customers and segmented customers while they are in close proximity to the purcahasing activity (dealer; as the marketed product is mobile phone). Femtocells have unique "IDs" just like regular cell phone base stations. Even they are more capable to find micro location of the customer. In this study, customers' locations could be found with femtocell base station installed in specific dealer of the mobile

operator, as femtocells have the ability to find exact location of customers of mobile operator. Study 3 has been implemented in order to understand whether there is a positive effect created by location based marketing. Results of the analysis have shown that marketing of the product or service to the mobile customers while in close proximity to a specific purchasing area of the product has an enhancing effect on customers' buying behavior.

Main hypotheses of the research are whether the motivation of purchasing can be created considering the content of the SMSs and with segmentation of customer. Further the impact of receiving SMS campaign when client pass through a certain point of purchase is measured in this study. Hypothesizes are shaped around responses of customers toward SMSs with different relevant contents. The main hypotheses tested in detail in further parts of the research are;

H_a: The perceived informativeness of mobile SMS has an impact on the attitude toward mobile marketing campaigns.

H_b: The perceived segmentation of mobile SMS has an impact on the attitude toward mobile marketing campaigns.

H_c: Receiving of the mobile SMS in a specific purchasing area of the product has an enhancing effect on segmented customers' buying behavior.

6.2 Methods Used

In study 1, a survey has been conducted in order to get responses from customers regarding their general attitudes toward mobile marketing campaigns and attitudes toward two specific SMSs designed with less and more informative contents.

In study 2 and 3, in order to be able to measure the real responses toward SMS campaigns, specific SMSs have been sent to related group of customers and the returns have been analysed.

Study 2 contains comparing the responses collected from mass and segmented customer groups who received specific two SMSs.

Moreover, in study 3 we tried to analyse the impact of using location data of the segmented customers and compared the responses of segmented group and segmented group while in close proximity to the marketed product (mobile phone for this

46

research). As mentioned in previous parts, locations are detertimed as mobile operator's dealer where femtocells installed. Customers in related segments have received the specific SMSs (with more and less informative content) while they are in retail dealer.

6.2.1 Study 1: Survey design and respondent selection

In this part as named study 1, two specific text messages (SMS1 and SMS2, see Table 6.1) have been created and a questionnaire (see APP A) has been designed for both of them. One of the messages has been created as less informative including only the product name and the limited guidance to get information and the second one has been shaped as more informative including product name, vendor and seller information, exact information about the cash price of the product and terms for bundling with existing tariffs. By changins the infromativeness level of SMSs, impact of the informativeness on customer attitude has been tried to measure. These two SMSs can be observed in Table 6.1. Questionnaire has been also designed to measure the impact of other factors on customer attitudes through asking general questions, such as; entertainment, credibility, irritation and personalisation.

Table 6.1: SMS messages.

	Content of the SMS	Message Text
SMS 1	Less Informative	Wellcome to [operator name]! inTouch 3 is now with [operator name]! For the best tariff for you contact us!
SMS 2	More Informative	With [operator name] and Samsung cooperation, New Galaxy Grand 2 LTE can be had for whether an initial payment of TR 819 or mountly additional payments over your tariff starting from TR 5!

For each two SMSs, online surveys have been made between the dates 06.04.2015 – 12.04.2015 in Turkey to test the hypotesis. The survey utilized a Turkish questionnaire designed to collect data regarding factors would affect consumer attitude and intention and purchasing buyer beyavior toward mobile marketing SMSs. Research targets are people in Turkey, had experience in using mobile devices. Survey prepared by an

online program named "Googledocs" and shared in social media (facebook, linkedin, twitter) in order to access the respondents. In this analysis convenience sample method.

The questionnaire contains the following four parts. The first part of the queationnaire ask whether the respondents had experience using mobile device and communicating through SMSs. The second part asks about respondents' attitude and intention toward specific two SMSs designed as less informative (SMS-1) and more informative (SMS-2) content. The third part measures respondents' general attitudes and intentions toward mobile marketing. The constructs were adapted from Xu (2007) as entertainment, credibility, informativeness, irritation and personalization. The final part collects the demographic data. (See APP A).

Apart from demographic data and user experience, all other measures were assessed via Likert type scale ranging from "strongly agree" to "strongly disagree".

6.2.2 Study 2 and 3: Delivering real SMSs

Study 2 and 3 have been implemented in order to measure the real responses toward marketing SMSs. Specific SMSs (see Table 6.1) have been sent to the related customer groups of a mobile network operator of Turkey. Offering services to 98% of Turkey's population through its next generation network, the company is growing fast both in the corporate and individual services and constantly investing in technology and infrastructure as well as in its management and around 3000 employees. In addition, the company can be described as the mobile sector's most dynamic and the alternative operator.

Study 2 contains delivering each two SMSs with less and more informativeness content, to mass sample and to segmented customer group defined according to the mobile phone and analyzing the results of these two delivering group. Here for both customer groups (segmented and mass groups), a buying ratio has been calculated by looking whether the customer bought the product or not. Mobile operators have capability to see data that shows whether specific customer has activated related mobile phone. Hence after delivering specific two SMSs, related customer groups' activation transactions have been monitored for a period of time (30 days).

Study 3 includes delivering SMSs to the segmented group and to the customers of segmented group while in close proximity to the related product (using location data)

in order to understand whether there is an enhancement effect on the success of mobile marketing with segmented customer group. Customers' location data were collected via femtocells installed in 10 different dealers -selected randomly- of mobile operator. In this scope by using the micro location finding ability of femtocell, customer -in the segmented group- passing close to the dealer of the operator (where a femtocell base station has deployed) have been targeted to deliver two specific SMSs. Like study 2, here a buying ratio calculated for two groups of customer, and the results have been compared.

7. ANALYSIS AND RESULTS

Most of the data analysis in this research was done by using SPSS program. It allows one to both specify the relationships among the conceptual factors of interest and the measures underlying each construct, resulting in a simultaneous analysis of how well the measures relate to each construct and whether the hypothesized relationships at the theoretical level are empirically true.

7.1 Analysing Survey Results: Study 1

Survey data analysis has been made with SPSS program.

7.1.1 Respondents characteristics

In order to understand customer attitudes and intention toward mobile marketing SMSs, only mobile phone users have been included in the survey and those do not experience to use mobile phone removed the survey at the beginning.

A total of 223 samples have been collected for two text message (SMS with more and less informative content) among which are 223 usable responses.

The respondents included 46% of males and 54% of females. Females were more willingless to participate the questionnaire.

38% of them are aged from 16 to 25, 53% of them are aged from 26 to 45, 8% of them are aged of 46 and older, and 74% of them had minimum graduate degree, which indicates that the respondents were primarily young and well educated.

37% of them have income of TL 1001-3000, and 44% of them have income of TL 3001-6000, and 13% of them have income of 6001 and more.

52% of them generally use SMS while communicate by writing. And these groups also use alternatives message services like whatsapp, viber, messenger and etc. And 94% of them are using smartphone.

These frequencies are shown in Table 7.1.

Table 7.1 : Frequencies of the respondents based on age, gender, education and income level, and mobile phone types.

Item	Values	Frequency	Percent
Age	15 and below	2	0,90
	16 - 25	85	38,10
	26 - 45	118	52,90
	46 and older	18	8,10
Gender	Female	121	54,30
	Male	102	45,70
Education level	None	7	3,10
	Secondary Education	34	15,20
	High School	17	7,60
	Graduate Degree	128	57,40
	Bachelor's degree	35	15,70
	Master's degree and above	2	0,80
Income level	1000 TL and less	13	5,80
	TL 1001 - TL 3000	82	36,80
	TL 3001 - TL 6000	98	43,90
	TL 6001 and more	30	13,50
Mobile phone type	Smartphone	210	94,20
	Basic feature phone	13	5,80

7.1.2 Factor Solutions and Reliability Levels

In order to ensure the reliability of the constructs and to demonstrate whether they were one-dimensional and/or multi-dimensional an exploratory factor analysis has been carried out via SPSS. Consistent with the statements of Nunnally towards this direction (1978), the validity of empirical measures has been checked. As mentioned in the 6.3, second part of questionnaire includes questions regarding respondents' attitude and intention toward specific two SMSs designed as less informative (SMS-1) and more informative (SMS-2) content. First factor analysis has been made for questions designed for message associations and questions –stated in in the second part of questionnaire- regarding informativeness level of SMSs. The sample was adequate for the factor analysis in which the Kaiser-Meyer-Olkin measure was 92% at the 0.01 level, as Fornell and Lacker (1981) recommended 70%. Cumulative rotation sums of squared loading is 78%. In addition, all questions have significant path loadings at the 0.01 level, and the loadings are relevant for the reflective questions. As shown in Table

7.3 it can be noticed that all questions of this part were higher than 0.50, as recommended by Fornell and Lacker (1981).

Table 7.2 : Kaiser-Meyer-Olkin and Bartlett's Test regarding message associations and informativeness level questions.

	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.923
Sig.	0.000
Rotation Sums of Squared Loadings	77.98%

Rotated component matrix regarding message associations and informativeness level questions, can be seen in table 7.3.

Table 7.3 : Rotated component matrix regarding message associations and informativeness level questions.

Related Questions	Message assoc.	Informativeness level
To me receiving this SMS is (Boring – Attrac.)	0.833	
To me receiving this SMS is (Ugly - Pretty)	0.903	
To me receiving this SMS is (Antipathetic – Sympat.)	0.904	
To me receiving this SMS is (Bad - Good)	0.910	
To me receiving this SMS is (Irritating - Not Irritating)	0.903	
To me receiving this SMS is (Unconvincing – Persu.)	0.765	
This SMS induced me to explore mobile phone		0.635
This SMS taught me something new about m. phone		0.620
This SMS got me to find out about mobile phone		0.618

After analyzing second part's questions with factor analysis tool, third part's questions regarding general attitudes and intention has been included in the factor analysis. Kaiser-Meyer-Olkin and Bartlett's Test results have shown that adequency level is 85% at the 0.01 level, as Fornell and Lacker (1981) recommended 70%. Cumulative rotation sums of squared loading is 77.1%.

In addition, all questions have significant path loadings at the 0.01 level, and the loadings are relevant for the reflective questions.

As shown in Table 7.5 it can be noticed that all questions of this part were higher than 0.50, as recommended by Fornell and Lacker (1981).

Table 7.4 : Kaiser-Meyer-Olkin and Bartlett's Test regarding general attitudes and intention questions.

	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.83
Sig.	0.000
Rotation Sums of Squared Loadings	77.01%

Table 7.5 : Rotated component matrix regarding general attitudes and intention questions.

Related Questions	Intention	Attitude
I use marketing SMSs whenever I have chance	0.767	
I intend to use marketing SMSs for shopping after receiving	0.755	
I like the idea of using mobile marketing SMS		0.800
Using mobile marketing SMS is a good idea		0.881
Using mobile marketing SMS is a wise idea		0.818

Questions –stated in the third part of the questionnaire- designed for factors (entertainment, informativeness, irritation and personalization) affecting general attitudes toward mobile marketing have been also measured with factor analysis. Kaiser-Meyer-Olkin and Bartlett's Test results have shown that adequency level is 85% at the 0.01 level. Cumulative rotation sums of squared loading is 88%. In addition, all questions have significant path loadings at the 0.01 level, and the loadings are relevant for the reflective questions. As shown in Table 7.7 it can be noticed that all questions of this part were higher than 0.50, as recommended by Fornell and Lacker (1981).

Table 7.6 : Kaiser-Meyer-Olkin and Bartlett's Test regarding factors affecting general attitudes.

	Value
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	0.846
Sig.	0.000
Rotation Sums of Squared Loadings	88.21%

Table 7.7 : Rotated component matrix regarding factors affecting general attitudes and intention.

Related Questions	Personalisation	Entertainment	Irritation	Informative
I feel that marketing SMS displays personalized message to me	0.91			
Contents in mobile marketing SMSs are personalized	0.89			
I feel that mobile marketing SMS is personalized for my usage	0.87			
I feel that receiving marketing SMSs is enjoyable and entertaining		0.88		
I feel that receiving mobile marketing SMS is pleasan		0.86		
To me, it is amusing to receive mobile marketing SMS		0.81		
I feel that mobile marketing SMSs are irritating			0.95	
Contents in marketing SMSs are often annoying			0.95	
I feel that marketing SMS is a good source for timely information				0.81
Marketing SMSs are useful				0.70

After the factor analysis, all data were tested for data reliability using Cronbach's alpha for the questions regarding general attitude and intention toward mobile marketing (see APP A, part 3), informativeness level of specific SMSs (see APP A, part 2) and SMSs associations (see APP A, part 2), are shown in Table 7.8. As most research method guides treat a value higher than 0.7, (Nunnally, 1978), the values in Table 7.8, indicate that the data collected from the survey are reliable and suitable for further analyses.

Table 7.8 : Reliability analysis.

Constructs	Items	Cronbach's alpha
Attitude	3	0.764
Intention	2	0.746
Entertainment	3	0.754
Informativeness	2	0.753
Irritation	2	0.886
Credibility	1	0.759
Personalization	3	0.764
Informativeness level of SMS1&2	3	0.771
SMS associations	6	0.773

7.1.2.1 Manipulation Check: Informativeness Level

This part of the questionnaire has been designed in order to verify that the two specific SMSs (SMS1 and SMS2) are perceived less and more informative by respondent as they designed. This part of the questionnaire contains the questions regarding respondents' attitude and intention toward each of the SMSs designed with less and more informative content. Each of the two questionnaire has been made by different people in order not to be affected by the SMSs. By the analyzing responses of part two's specific question in both questionnaire (see APP A, part 2), it can be shown that the SMS designed as more informative was perceived more informative in fact. In this context, first means of the responses to the questions asked to measure the perceptions toward informativeness level of the SMSs, have been compared to realize whether a there is a difference between them. These specific questions are shown in Table 7.9.

Table 7.9 : Questions regarding informativeness level of SMS.

Questions	Strongly Disagree				Strongly Agree
This SMS induced me to explore mobile phone	1	2	3	4	5
This SMS taught me something new about mobile phone	1	2	3	4	5
This SMS got me to find out about mobile phone	1	2	3	4	5
How do you generally evaluate this SMS regarding its formativeness level	1	2	…	9	10

For each respondent the answers of these three questions (5 point scale) has been averaged and weighted with question regarding general informativeness level (10 point scale) and compared for each of two questionnaire conducted for each SMSs. And as shown in Table 7.10 SMS designed as more informative was perceived more informative, and SMS designed as less informative was perceived less informative by respondent in fact.

Table 7.10 : Perceived informativeness of two SMSs (t-test for equality of means).

SMS type	Mean	N	Std. Deviation	Std. Error Mean	Sig. (2-tailed)
Responses to more informative SMS	1.63	79	1.24	0.1	
					0.000
Responses to less informative SMS	0.69	144	0.65	0.05	

7.1.2.2 Analysis on General Attitudes Toward Mobile Marketing

Third part of the questionarie contains customer general attitudes toward mobile marketing SMS. Here responses to these questionshave been deeply analysed.

Table 7.11 lists the measures used in this part regarding respondents' general attitudes and intentions toward mobile marketing SMS.

We used items that had been validated by prior research, but modified the wording of the questionnaire in order to fit this particular context of mobile SMSs. The scales of all constructs were adapted from Xu (2007).

Table 7.11 : List of measures.

List of Measures	
Constructs	**Measures**
Intention (INT)	
INT1	I will use marketing SMSs to consume whenever I have chance
INT2	I intend to use marketing SMSs for shopping after receiving
INT3	I expect to use marketing SMS to purchase after receiving
Attitude (ATT)	
ATT1	I like the idea of using mobile marketing SMS
ATT2	Using mobile marketing SMS is a good idea

Table 7.11 (continued) : List of measures.

ATT3	Using mobile marketing SMS is a wise idea
Entertainment (ENT)	
ENT1	I feel that receiving marketing SMSs is enjoyable and entertaining
ENT2	To me, it is amusing to receive mobile marketing SMS
ENT3	I feel that receiving mobile marketing SMS is pleasant
Informativeness (INF)	
INF1	I feel that marketing SMS is a good source for timely information
INF2	Marketing SMS provides the information I need
Irritation (IRR)	
IRR1	I feel that mobile marketing SMSs are irritating
IRR2	Contents in marketing SMSs are often annoying
Credibility (CRE)	
CRE1	I use personalized marketing SMS as a reference for purchasing
CRE2	I trust mobile marketing SMSs
CRE3	The content provided by mobile marketing SMS is credible
Personalisation (PER)	
PER1	I feel that marketing SMS displays personalized message
PER2	I feel that mobile marketing SMS is personalized
PER3	Contents in mobile marketing SMSs are personalized

As different customer segments have their own characteristics, the study finds that there are some significant variations in the perceptions toward mobile marketing between respondents in different gender levels. From Table 7.12 we can observe that the mean scores of the measured constructs are different among men and women. Compared with women, men consider mobile marketing SMSs more informative and credible, and have more favourable attitudes.

Table 7.12 : Perceptions toward mobile marketing with different gender.

Constructs items	Mean/Gender		Sig.
	Male	**Female**	**T-test**
Attitude	1.98	1.65	0.012

Table 7.12 (continued) : Perceptions toward mobile marketing with different gender.

Intention	1.52	1.46	0.571
Entertainment	1.68	1.50	0.137
Informativeness	2.06	1.67	0.002
Irritation	2.41	2.19	0.221
Credibility	2.02	1.75	0.453
Persanalization	1.64	1.55	0.043

Furthermore, the respondents were divided into two groups based on their perceived personalization of mobile marketing. Responses who indicated "1-2.5" on the personalization construct were classified as less personalized and respondent's perceptions with "2.51-5" were classified as more personalized perceptions. For those who hold more personalized perceptions, hold more favourable attitude and higher intentions to shop after receiving marketing SMSs, believe mobile marketing is more personalized, entertaining and credible and less irritating. Perceptions toward mobile marketing with personalization level can be seen in table 7.13.

Table 7.13 : Perceptions toward mobile marketing with personalization level.

Constructs items	Mean/Perceptions on the personalization		Sig.
	Less Personalized	**More Personalized**	**T-test**
Attitude	1.67	3.19	**0.000**
Intention	1.37	2.52	**0.000**
Entertainment	0.82	1.00	**0.000**
Informativeness	0.86	0.81	**0.000**
Irritation	1.34	1.23	**0.000**
Credibility	0.83	1.11	**0.000**
Persanalization	0.41	0.51	**0.000**

7.1.2.3 Regression Analysis

In addition to all these examinations, a correlation analysis has been carried out, and results indicated that credibility, personalization, informativeness and entertainment are positively, whereas irritation is negatively correlated to the overall attitude. Since the attributes themselves are significantly correlated, a stepwise regression analysis is used to differentiate their individual contributions. Data were tested based on regression analysis run on SPSS and multiple affects of constructs have been analyzed by selection and elimination of multiple variables via stepwise selection method. The results in Table 7.14 indicate that informativeness, entertainment and credibility are the top 3 predictors of attitude and explain 76% of customers' attitude toward mobile marketing SMSs.

Table 7.14 : Model summary (attitude and influencer factors)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.848	0.719	0.718	0.53169	
2	0.869	0.755	0.753	0.49753	
3	0.872	0.760	0.757	0.49390	1.893

In fisrt line, informativeness, in second line predictors: (Constant), informativeness, entertainment are main predictors.

In third line, informativeness, entertainment, credibility and forth line dependent variable is attitude is main predictors.

As shown in the Table 7.15, informativeness is the major predictor that has the highest shared contribution with 28.9%, following by entertainment with 12.1% and credibility with 1.9%. Others are removed from model automatically. And removed factors are not included in table 7.15.

Table 7.15 : Major predictors of customer attitudes toward mobile marketing.

SMS content	Shared contribution	Unique contribution
Informativeness	28.9%	9.7%
Entertainment	12.1%	3.3%
Credibility	1.9%	0.5%

Apart from regression analysis of attitude and influencer factors (entertainment, irritation, personalization, informativeness and credibility), a regression analysis has been done in order to find the relationship between attitude to SMSs and intention. The results in Table 7.16 indicate that attitude is a strong predictor of intention and explain 45% of customers' intention toward mobile marketing SMSs.

Table 7.16 : Model summary (attitude and intention)

Model R	R SquareSquare	Adjusted	RStd. Error of the Estimate	Durbin-Watson
1	0.675[a] 0.455	0.453	0.59501	2.115

7.2 Analysing The Real SMSs Responses: Study 2 and 3

Study 2 and 3 have been implemented in order to measure the real responses toward marketing SMSs. Specific SMSs (see SMS1 and SMS2 in Table 6.1) have been delivered to the related customer groups of a mobile network operator of Turkey. SMSs responses have been considered whether the customer buys the mobile phone marketed with the SMS or not. Response rate of the specific groups have been compared.

Study 2 includes delivering each two SMSs with less and more informativeness content to mass sample and to segmented customer group defined according to the related product (mobile phone for this study) and analyzing the results of these two delivering group.

Customer groups' segmentation dimentions are listed in Table 7.17. Ready to buy means a period (X months) that customers had not change their mobile phone. Regular user status means that customers use more than half of theirs tariff's benefits. Heavy usage rate means that customers have average revenue higher than X TL per month. Because of the confidentiality policy of company "X" values can not explain in this research.

Table 7.17 : Segmentation variables.

Segmentation Dimentions	Acceptence
Geographic Segmentation	
Country	Turkey
City	Istanbul
Behavioral Segmentation	
Buying stage	Ready to buy
User status	Regular
Tariff type	Post paid
Usage rate	Heavy (Prime user)
Loyalty status	Loyal (Subscriber age older than 6 months)

As shown in Table 7.18, SMS with more informative content has higher return ratio in comparison with SMS with less informative content. The results of the first stage has indicated that segmented customers have much more tendency to purchase than mass customers. Thus, it can be said that SMSs sent to segmented costumer group much more effective than mass customer group.

Table 7.18 : Comparison of responses (Mass versus Segmented group).

Message content	Comparison of responses (Mass versus Segmented group)	
	Mass	Segmented
Less Informative (SMS1)	1.52%	2.09%
More Informative (SMS2)	1.59%	2.41%

Study 3 includes delivering SMSs to the segmented group and to the customers of segmented group while in close proximity to the related product (using location data) in order to understand whether there is an enhancement effect on the success of mobile marketing with segmented customer group. In this scope by using the micro location

finding ability of femtocell, customer -in the segmented group- passing close to the dealer of the operator (where a femtocell base station has deployed) have been targeted to deliver two specific SMSs. In order to deliver SMSs to customers who is passing near mobile operator's dealer, femtocell base stations installed in some of the dealer of the mobile operator. Customers in the segmented group and passing near or got into the dealer with femtocell base station, have been delivered the SMSs and the responses have been compared. Responses of this study are shown in Table 7.19.

Table 7.19 : Comparison of responses (Segmented versus segmented and location based group).

Message content	Comparison of responses (Segmented versus segmented+location based group)	
	Segmented	Segmented+location based
Less Informative (SMS1)	2.41%	5.76%
More Informative (SMS2)	3.53%	7.96%

The results of this study has shown that using location data of the targeted customer has an enhancement effect over the success of marketing campaigns. Delivering SMSs to the targeted customer close the dealer (segmentation+location based) has more responsive behavior than customers considered only with segmentation. In addition, SMS with more informative content has positive impact on the success of mobile marketing as having higher response rate.

8. FINDINGS, CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCHS

Mobile marketing has been developing as an important channel for marketers based on the astonishing growth of SMS and mobile phone users. How to design effective mobile marketing campaings and connect with the customers are key factors that affect the success of marketing activities.

Theories from literature have mostly focused only one or two factors that effects the success of mobile marketing. Some of them include only content effect, while there are some researchs that analyses the importance of segmentation in mobile marketing activities and others deal with only location based marketing. In this research, we try to suggest an innovative mobile marketing effect model in a smart environment by suggesting a theoretically combined model that has not been dealt with in the existing studies.

This research casts light on the relationship of content of the SMSs, segmentation and using the location information of the customers to suggest that the proposed model is suitable for maximizing the marketing effect. In other words, our research is aiming to understand the effect of different variables on attitude toward mobile marketing, segmentation and using location data on the success of mobile SMS marketing. As a result, this research anticipates a new paradigm in mobile marketing during the advent of the new smart environment.

8.1 Findings

This part will present conclusions for each hypothesis and implications separately based on findings during the analysis of collected data. Considering the results of the analyses, it can be briefly stated that all of the hypotheses proposed in the research design have been supported.

8.1.1 Content management

First hypothesis (Ha) of this research is "The perceived informativeness of mobile SMS has an impact on the attitude toward mobile marketing campaigns." This hypothesis was aiming to investigate relation between content and customer attitude toward mobile marketing. With holding a survey and delivering real SMSs this research find out importrance of each variable of content and relation between these variables with attitude. Some of the variables carry more importance than other variables and some of them have negative effect on attitude. For instance, informativeness of mobile marketing perceived by both of the cases as most important factor in content of mobile marketing, whereas entertainment and credibility found to be less important than informativeness. Irritation of the content is negatively correlated to overall attitude toward mobile marketing. Outcome of informativeness, entertainment and credibility factors generates positive responds among respondents.

8.1.2 Segmentation effect

Second hypothesis (Hb) of this research is "The perceived segmentation of mobile SMS has an impact on the attitude toward mobile marketing campaigns." This hypothesis was created in order to understand whether delivering campaign SMSs to the tailored customers increases the success of the marketing. The results of the study 2 of the research have demonstrated that segmentation has positive effect over success of mobile marketing campaigns. With delivering specific two SMSs to mass and segmented group, reponses could be compared and the results have showed that segmented customer group responded more than mass customer group. Within this scope, it can be said that segmentation in mobile marketing has effect customer possitively toward buying process.

8.1.3 Location-based marketing

The third and the last hypothesis (Hc) of this research is "Receiving of the mobile SMS in a specific purchasing area of the product has an enhancing effect on segmented customers' buying behavior." Results of study 3 have indicated that delivering SMS campaigns to the customers while in close proximity to a specific retail outlet

(location-based marketing) has an enhancement effect on mobile marketing with segmented customer group. Segmented customer grouped who received the SMSs near related retail outlet centers respond to the SMS more positive than sole segmented groups.

8.2 Conclusions

Based on analysis and findings, variables of content have different effect on costomer attitude. Some of the variables carry more importance than others and some of them have negative effect over customer attitude. In the basis of content variables, informativeness is the most important factor in mobile marketing. Perceived irritation is negatively correlated to overall attitude toward mobile marketing.

Delivering mobile campaign SMSs to related customer groups improve the success of mobile marketing. In addition, using location data of the targeted customers has an enhancement effect on mobile marketing.

8.3 Limitations and Future Research

During our research, we found several limitations that can be improved. We also discovered some room for future researches.

Firstly, we consider that the size of sample data is relatively small. Only 143 for the first questionanaire (including SMS with less informative content) and 79 for the second questionanaire (including SMS with more informative content) A total of 223 respondents that agreed to participate on the survey program. Furthermore, the generalizability of the data will be questioned as the number sample used is very small compare the whole population of mobile users in Turkey especially. For further research, it is better to have high number of sample that can really represent the actual population of mobile user in Turkey.

Secondly, the restrictions of the research can be stated as, the utilization of convenience sampling method. Because the surveys were conducted via web-based surveys, a trade-off between broader accessibility to target sample and low control over respondents emerged.

Thirly, beacuse of the confidentiality policy of mobile operator most of the data provided by mobile operator could not be used and incluede in this reaserch. And also some required data could not be ensured by mobile operator to us. For further research, response time can be analysed.

Fourthly, because of some constranits occured during the research, two SMSs created with less and more informative content had to include different mobile phones. In order to get precise results, SMSs with less and more informative content can be designed with the same product (mobile phone for this research) for further researchs.

Because of time constraint, a small number of variables have been included in this research, but for further researchs, different variables can be added to research to enlarge understanding of factors that affecting customer attitude toward mobile marketing.

REFERENCES

Altuna, O.K., Konuk, F.A., (2009). Understanding consumer attitudes toward mobile advertising and its impact on consumers' behavioral intentions: A cross-market comparison of United States and Turkish consumers", International Journal of Mobile Marketing, Vol. 4 No.2, pp 43-51.

AirFlash, (2001). Top Line Trends In Consumers' Attitudes Towards Location-Based Services In Great Britain, France and Germany.

Antonides, G. and Fred van Raaijd, (1998). Consumer behavior: A European Perspective, John Willey & Sons Ltd., pg. 197, 555

Atak, S. (2009). Global Market Segmentation For A New Product Category Based On Consumer Values And Adoption**.**

Bauer Hans H., Stuart J. Barnes, Tina Reichardt, Marcus M. Neumann, (2005) driving consumer acceptance of mobile marketing: a theoretical framework and empirical study, Journal of Electronic Commerce Research, VOL. 6, NO.3.

Bickert, J. (1998). "Building relationships through "one-to-few" marketing", *Direct Marketing Professors Institute*, San Francisco, CA, 10 August.

Davis, F. D., Perceived Usefulness, Perceived Ease Of Use, And User Acceptance Of Information Techlonogy, MIS quarterly 13(3), pg 319-339, (1989)

Dckinger, A., **Haghirian, P.** (2004). An Investigation and Conceptual Model of SMS Marketing.

Dickinger, A., Arno, S., Jamie M., Diffusion and success factors of mobile marketing.

Femtocell definitions.

Url: <*http://www.bayttekno.com/technology.html*>**,** date   retrieved 13.04.2015

Ferrell, O.C., and Michael D. Hartline (2008). Marketing Strategy. 4th. Cengage Learning.

Guide, N., (2005). The mobile phone is open business

Gunter, Barrie and Adrian Furnham (1992). Consumer profiles: An introduction to psychographics.

Hamka, F. (2012). Smartphone's Customer Segmentation and Targeting: Defining market segment for different type of mobile service providers.

Hirschman, E.C. (1980). "Innovativeness, novelty seeking, and consumer creativity", *Journal of Consumer Research*, Vol. 7, pp. 283-95.

Hopkins, J., Turner, J. (2012). Go Mobile Location-Based Marketing, Apps, Mobile Optimized Ad Campaigns, 2D Codes, and Other Mobile Strategies to Grow Your Business

Kotler, P. and Armstrong, G. (2012). Principles of Marketing.

Kotler, P. (2003). Marketing Management. New Jersey: Pearson Education.

Kotler, P. and Keller, K.L. (2009). Marketing Management Pearson Education International.

Lee, T., JongKun, J., (2007). Contextual perceived value? Investigating the role of contextual marketing for customer relationship management in a mobile commerce context, Business Process Management Journal Vol. 13 No. 6.

Matti, L., (2004). The Success Factors of Mobile Advertising Value Chain

Mobile Marketing Association,. MMA Mobile Marketing Guide: Recognizing leadership and innovation. Mobile Marketing Association, (2008)

Okazaki, (2005). Mobile advertising adoption by multinationals: senior executives' initial responses. Internet Research: Volume:15 Issue:2 2005 Reeach paper

Pickton, David & Broderick, Amanda, (2005). Integrated marketing communications, 2.edition, pp.371- 398.

Plavini, P., Durgesh, P. (2011). Attitude towards Mobile Advertising: A Study of Indian Consumers. International Conference on Management, Economics and Social Sciences., Dec., 2011.

Powers, T.L., (1991), Modern Business Marketing: A Strategic Planning Approach to Business and Industrial Markets, West Publishing, St Paul, MN.

Rebello T. M., W. J. Brown, (2009). Attitudes of young consumers towards SMS advertising, African Journal of Business Management Vol.3 (9), pp. 444-452.

Reid, R., and Bojanic, D. (2009). Hospitality Marketing Management. 5th. John and Willey and Sons.

Schiller, J., Voisard, A., (2004). Location Based Services, Elseiver Inc.

Sharon, S., Lowrey, P., Haefner, J., (1998). Public Attitudes Toward Advertising: *More Favorable Than You Might Think, journal of advertising research.*

Soroa-Koury, S., & Yang, K. C. C. (2010). Factors Affecting Consumers' Responses to Mobile Advertising from a Social Norm Theoretical Perspective. Telematics & Informatics.

Spagnolli, A., Gamberini, L. (2007). Consumer Attitude Toward Mobile Marketing.

Sundaray, K. S., (2014). "Interacting via SMS: practices of social closeness and reciprocation." British Journal of Social Psychology 2, 343

Tsang, M.M., Shu-Chun. H., Ting-Peng L., (2004). Consumer Attitudes Toward Mobile Advertising: An Empirical Study, International Journal of Electronic Commerce / Spring 2004, Vol. 8, No. 3, pp. 65– 78.,

Ververidis, C., Polyzos, G.C., (2005). Mobile Marketing Using A Location Based Service.

Xu D.J., (2007). The influence of personalization in affecting consumer attitudes toward mobile advertising in china, the journal of computer information systems.

Walsh, S.P., White, K., Cox, S., and McD. R., (2011). Young. "Keeping in constant touch: The predictors of young Australians' mobile." Computers in Human Behavior 27, 333-342.

Wolchik, S. A., West, S. G., Sandler, I. N., Tein, J., Coatsworth, D., Lengua, L., et al., (2000). An experimental evaluation of theory-based mother and mother-child programs for children of divorce. *Journal of Consulting and Clinical Psychology, 68*, 843-856.

Varnalı, K., Toker, A., Yılmaz, C., 2012. Mobile Marketing Fundamentals and Strategy, Mc Graw Hill.

APPENDICES

APPENDIX A : Questionnaire including SMSs with less and more informative content

APPENDIX A

The same two questionnaires including different two SMSs (SMS1 and SMS2) were have been conducted to different respondents groups.

Part 1

What is your 'go to brand' when you are buying mobile phone?

Please indicate only ONE brand _____

Do you currently have or before had a smart phone?

Yes _____   No_____ (terminate the questionnaire)

How long have you been using a smart phone?

_____ Less than a year

_____ 1-3 years

_____ 4-6 years

_____ More than 7 years

What is the approximate price of your phone?

Less than TR 500_____   TR 500 – 1000_____   TR 1001- 2000_____

What is your subscription type? (prepaid or postpaid)

Postpaid_____   Prepaid_____

Do you use a smart phone?

Yes_____   No_____

How did you buy your phone?

Contract payment with my tariff_____

By cash_____

Other(please indicate) _____

How long have you been using the same phone?

Less than 6 months_____

6 – 12 months_____

More than 12 months_____

How much does your monthly mobile using?

Less than TR 20_____

TR 20 – 50 _____

51-100_____

More than TR 100_____

Do you generally use SMS while communicate by writing or prefer other applications such as whatsapp, viber, Facebook etc? Please indicate only one of following.

I continue to use only SMS_____

I prefer other applications_____

I use both of them (SMS and other applications)_____

	Strongly Disagree				**Strongly Agree**
I contented with my mobile phone	1	2	3	4	5
I would change my phone if I offered a cheaper mobile phone	1	2	3	4	5
I would change my phone if I offered a full-featured phone	1	2	3	4	5

Part 2

Please answer the following questions by reading the text message below.

Please assume that you received a mobile promotion message like this, evaluate this situation on the basis of the following attributes.

SMS1: Wellcome to [operator name]_! inTouch 3 is now with_ [operator name]_! For the best tariff for you contact us!_

SMS2: With [operator name] *and Samsung cooperation, New Galaxy Grand 2 LTE can be had for whether an initial payment of TR 819 or mountly additional payments over your tariff starting from TR 5!*

To me receiving this SMS is;

Boring   1_____2_____3_____4_____5_____6_____7 Attractive

Ugly   1_____2_____3_____4_____5_____6_____7 Pretty

Antipathetic   1_____2_____3_____4_____5_____6_____7 Sympathetic

Bad   1_____2_____3_____4_____5_____6_____7 Good

Irritating   1_____2_____3_____4_____5_____6_____7 Not irritating

Unconvincing 1_____2_____3_____4_____5_____6_____7 Persuasive

Do you prefer to receive a SMS like this?

Don't like the SMS at all   Like the SMS very much

1_____2_____3_____4_____5_____6_____7

Evaluate the text on the basis of following statements.

	Strongly Disagree				**Strongly Agree**
This SMS induced me to explore mobile phone	1	2	3	4	5
This SMS taught me something new about mobile phone	1	2	3	4	5
This SMS got me to find out about mobile phone	1	2	3	4	5

How do you generally evaluate this SMS regarding its formativeness level?

Not Informative at all (1)		**Totally informative (10)**
	1 2 3 4 5 6 7 8 9 10	

How would you react to this SMS if you are already unhappy with your product?

	Strongly Disagree				Strongly Agree
I would want to get information from nearest dealer	1	2	3	4	5
I would call customer services to get information	1	2	3	4	5
I would want to research the product from other sources	1	2	3	4	5
I would go and buy the product	1	2	3	4	5
I would do nothing	1	2	3	4	5

Evaluate following statements on the basis of [operator name]**?**

	Strongly Disagree				Strongly Agree
I advice [operator name] to others	1	2	3	4	5
I trust [operator name]	1	2	3	4	5
I prefer [operator name]than other operators	1	2	3	4	5
I would go and buy the product	1	2	3	4	5
I would do nothing	1	2	3	4	5

What is the main purpose of this SMS?

a) To give information about inTouch 3

b) To attract the customers to inTouch 3

c) Other (Specify)_____

d) Don't know

Part 3

Please evaluate the following statements assuming mobile marketing messages (SMS, MMS, app notifications) received on your phone.

SMS1: Wellcome to [operator name]*! inTouch 3 is now with* [operator name]*! For the best tariff for you contact us!*

SMS2: With [operator name] *and Samsung cooperation, New Galaxy Grand 2 LTE can be had for whether an initial payment of TR 819 or mounfly additional payments over your tariff starting from TR 5!*

	Strongly Disagree				**Strongly Agree**
I will use marketing SMSs to consume whenever I have chance	1	2	3	4	5
I intend to use marketing SMSs for shopping after receiving it	1	2	3	4	5
I expect to use marketing SMS to purchase after receiving it	1	2	3	4	5
I like the idea of using mobile marketing SMS	1	2	3	4	5
Using mobile marketing SMS is a good idea	1	2	3	4	5
Using mobile marketing SMS is a wise idea	1	2	3	4	5
I feel that receiving marketing SMSs is enjoyable and entertaining	1	2	3	4	5
To me, it is amusing to receive mobile marketing SMS	1	2	3	4	5
I feel that receiving mobile marketing SMS is pleasant	1	2	3	4	5
I feel that marketing SMS is a good source for timely information	1	2	3	4	5
Marketing SMS provides the information I need	1	2	3	4	5
I feel that mobile marketing SMSs are irritating	1	2	3	4	5
Contents in marketing SMSs are often annoying	1	2	3	4	5
I use personalized marketing SMS as a reference for purchasing	1	2	3	4	5
I trust mobile marketing SMSs	1	2	3	4	5
The content provided by mobile marketing SMS is credible	1	2	3	4	5
I feel that marketing SMS displays personalized message to me	1	2	3	4	5
I feel that mobile marketing SMS is personalized for my usage	1	2	3	4	5
Contents in mobile marketing SMSs are personalized	1	2	3	4	5

Part 4

How old are you?

Younger than 16____

16-25____

26-45____

46 and older____

Are you   Female_____?   Male_____?

Your marital status Married_____?   Single_____?

What is the highest degree you have earned?

None_____

Secondary Education_____

High School _____

Graduate Degree_____

Bachelor's_____

Master's _____

In which sector do you work?

Doctor_____

Engineer_____

Lawyer_____

Pharmacist_____

Military_____

Architecture_____

Medical personnel (except doctor)_____

Teacher-public employee_____

Police_____

Worker_____

Student_____

Housewife_____

Other(Please indicate)_____

CURRICULUM VITAE

Name Surname:	**Gülşah Çınar**
Place and Date of Birth:	**Izmir 02/02/1990**
E-Mail:	**gulsah.cnr@gmail.com**

EDUCATION:

B.Sc.:	**Industrial Engineering**
M.Sc.:	**Management Engineering**

PROFESSIONAL EXPERIENCE AND REWARDS:

05/2013 –	**Avea Iletişim Hizmetleri A.Ş.**
	Regulatory Analysis Specialist
11/2012 – 05/2013	**Bosch Termoteknik Isıtma ve Klima Sistemleri**
	Part Time Marketing Engineer (4 Days/week)