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Investigating Customers' Perceptions Towards Text Messaging Services as a CRM Medium

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1. Introduction

Growing interest among consumers towards text messaging creates significant opportunities for brands to connect with customer on a personal level. A recent HipCricket Mobile Marketing Survey (Tsirulnik, 2009), for example, discovered that 73 percent of people use their mobile phone for text messaging their friends more often than for making calls. In the same survey, 34 percent received a marketing offer on their phone as a text message and 37 percent of consumers would participate in a mobile customer loyalty program from a brand they trust (Tsirulnik, 2009). The use of text messaging is increasingly recognized as a valuable CRM medium to improve customer acquisition, customer retention, customer loyalty, and customer profitability (Khurana & Chaudhary, 2010).

The use of text messaging as a CRM medium not only creates opportunities, but also poses some challenges to companies. Companies need the right information to identify the right messages to be delivered to the right customers at the right time (Shankar et al., 2010). To get the right information, companies need to collect relevant consumer data, such as mobile phone numbers, names and addresses, and preferences as well as permission to deliver messages to them. However, mobile permission is a problem, due to continuing changes in consumer preferences and needs. Even though permission is granted by the customers, the validity of the permission depends on the service provided (Sinisalo et al., 2005), and, hence, permission needs to be updated constantly (Sinisalo et al., 2007).

Previous empirical research in mobile marketing and CRM suggested different values associated with text messaging, yet failed to analyze underlying issues and challenges. This study aims to close this gap by investigating consumers' attitudes on how companies should embrace text messaging services to target consumers and win their trust and loyalty. The results will uncover useful information on whether marketing via mobile devices can be worthwhile for companies. The specific objectives of this research are follows:

- a. Investigate consumers' level of interest in various forms of text messaging.
- b. Determine what product and service categories are best promoted and received by consumers through various forms of text messaging.
- c. Evaluate privacy issues relevant to text messaging as a mCRM medium.
- d. Analyze the success of using text messaging as a mCRM medium.

2. Literature review

2.1 Customer relationship management (CRM) and mobile customer relationship management (mCRM)

Customer Relationship Management (CRM) is a business approach that incorporates people, process, and technology to create a meaningful dialogue with individual customers (Boulding et al., 2005) to retain customer retention and loyalty (Sinisalo et al., 2007; Khurana & Chaudhary, 2010; Gebert et al., 2003). It is based on the concept of Relationship Marketing (RM) (Berry, 1983; Bebert et al., 2003; Zablah et al., 2004, as cited in Sinisalo et al. 2007). The advent of novel technology and available data has brought CRM to another level. The Internet has become a popular channel for firms to communicate and manage relationships with their customers (eCRM). eCRM allows customers to access company services from different locations.

Recently, mobile messaging technology has emerged as a relatively new tool for companies to create more unique and personalized one-on-one communication with individual customers (mCRM) (Schultz & Bailey, 2000). While eCRM has been the subject of extensive investigation by scholars, adequate empirical studies are lacking concerning the emerging phenomenon of mCRM, as a subset of eCRM (Sinisalo et al., 2007; Khurana & Chaudhary, 2010). Extant research from the customer's perspective includes the effects of mCRM on loyalty (Chan & Lam, 2004; Liljander et al., 2007, as cited in Sinisalo et al. 2007) and customer satisfaction (Hsu & Lin 2008). Research also examined the benefits of mCRM and structures required for setting up mCRM from firms' viewpoints (Schierholz et al., 2007; Duran, 2010).

2.2 Unique characteristic of mCRM

Mobile Customer Relationship Management (mCRM) was originally defined as "services that aim at nurturing customer relationships, acquiring or maintaining customers, support marketing, sales or services processes, and use wireless networks as the medium of delivery to the customers" (Camponovo et al., as cited in Sinisalo et al., 2007, p 773). Others have argued the importance of communication and redefined mRCM as "...communication, either one-way or interactive, which is related to sales, marketing, and customer service activities conducted through the mobile medium for the purpose of building and maintaining customer relationships between a company and its customer(s)" (Sinisalo et al., 2007, p. 774).

The concept of mCRM is possible due to the growing use of cellular phone and smart phones, such as Blackberry's, iPhones, and PDAs, that are capable of being used as a cellular device. Companies have used a variety of mobile messaging (such as Instant Messaging (IM), Multimedia Messaging Service (MMS), Short Messaging Services (SMS), Unified Messaging (UM), Messaging Service (EMS), and E-mail) to promote one-to-one communication with their customer. Among different types of mobile messages, the use of SMS (or text messaging) is growing at astounding rates since almost every mobile phone, whether smart or basic, can accept and send text messages. As of December 2010, an estimated 96 percent of Americans were wireless subscribers and an estimated 187.7 billion text messages were sent each month in the US (Martin, 2010). Because of its significance, this paper will focus on text messaging.

2.3 Using text messaging as a mCRMmedium

Companies have used text messaging to deliver mCRM activities, such as coupons, alerts, reminders, contests, or product information, to those who have joined a customer program. The use of text messaging as a mCRM medium is of interest to business because of its unique benefits. First, text messaging services allow personalized communication, given that each mobile device is likely owned by an individual rather than a family (Sinisalo et al. 2007; Schultz & Bailey, 2000). In addition, text messaging services permit customers to access the firm's services from a mobile phone or PDA with internet access anywhere, anytime, resulting in high flexibility (Balasubramanian et al., 2002). Also, communication via mobile medium could be interactive and immediate when companies are able to establish a direct dialogue with their customers, and at the same time, customers are able to take action quickly using such information (Barnes & Scornavacca, 2004). Further, the increase in security of wireless network allows customer data be sent over the network with more confidence (Ranjan & Bhatnagar, 2009).

2.4 Underlying issues pertaining to using text messaging as a mCRM medium

The unique characteristics of text messaging services also come with some challenges. First, the use of text messaging service requires customers to opt in for the mCRM program so that marketers could initiate communication with them. Thus, it is a challenging task for marketers to entice consumers to enter into the dialogue over the mobile medium.

Second, while personalized, relevant, timely, and secured communication could result in positive emotional relationship between the companies and their customers (Nysveen et al., 2005), any one irritating or unwanted message could damage this relationship given the intimate nature of mobile devices (Jelassi & Enders, 2006). Hence, customers' preferences, interests, and needs have to be identified and understood by the company before successful communication can be initiated.

A third challenge involves the price of messages and communications charged by operators, which may pose a barrier to mCRM because customers may not be willing to pay to receive such messages. This study, therefore, offers different avenues for marketers to understand consumers so that appropriate marketing campaigns can be designed to attract and retain them.

3. Theoretical background

There is no exact conceptual framework of mCRM available, since using text messaging to deliver mCRM is a fairly new phenomenon. Previous literature on CRM, eCRM, and mobile advertising streams provide some theoretical background for this study.

3.1 Consumer's attitudes toward different text messaging services

Existing literature on mobile advertising focused on the effects of attitudes toward mobile marketing on purchasing behavior (e.g., Ma et al., 2009). More recent literature examined the role of online advertising formats on consumers' attitudes toward advertisements and found that the format plays a significant role and affects the response. This study aims to examine consumer's attitudes toward different formats of text messaging services.

3.1.1 Mobile couponing

A Mobile Coupon is a form of text messaging service that can be sent to consumers via mobile devices that can be exchanged for a financial discount or rebate during a purchase. Different types of coupons include "Buy-one-get-one-free," "free," and "cents-off" or "dollars-off" (Mobile Marketing Association, 2007). The main advantages of using mobile couponing include personalized messages, time immediacy, and convenience (Raslomp, 2001). For example, coupons can be sent to existing consumers via a cell phone while consumers are in a retail shop and its bar-code scanned at the check-out cashier once consumers are ready to pay. However, lack of customer experiences with this service and limited distribution of a universal coupon reader system at the checkpoint could be some barriers for mobile couponing adoption.

3.1.2 Alerts

Text messaging can be used to deliver alerts to consumers no matter where they are. Different alerts that consumers may consent to include text messaging services in banking, such as overdraft notifications, bill payment reminders, daily balance notifications, transaction status updates etc. Airlines use text messaging services to inform users of their flight status, including flight arrival, cancellation, and delay. Retail stores send alerts to notify their customers of special sales or events.

3.1.3 Contests

Contests are commonly used by marketers to engage consumers with their brands. Major advantages of text messaging contests, compared to other types of contests, include 'immediacy,' 'ease of implementation,' and, particularly, 'fun.' Entertainment services can increase customer loyalty (Dickinger & Haghirian, 2004); therefore, contests may be a good vehicle for firms to engage their existing customers with their brands.

3.1.4 Product/service information

Text messaging can be used to provide related product or service information such as newsletters. This form of text messaging needs to be implemented with caution. Information needs to be relevant to consumers' interest so that it does not irritate them. Since the understanding of consumers' attitudes toward different forms of text messaging is still limited, it is interesting to discover what forms of text messaging are acceptable to consumers?

Q1: What forms of text messaging are acceptable to consumers?

3.2 Consumers' attitudes toward different text messaging services by industries

Existing literature identifies a growing list of product and service categories that utilize text messaging services to engage customers. Among them, restaurants (Guo et al., 2007; Terry, 2009), entertainment (Rau et al., 2006; Bruno, 2005), retail stores (Shankar et al., 2010; Dickinger & Kleijnen 2008), banking (Peevers et al., 2011; Amin & Ramayah, 2010; Rumpa, 2005; Riivari, 2005), groceries (Kowatsch & Maass, 2010), and auto sectors (Chattopadhyay et al., 2010) have been widely cited as industries using text messaging services as part of

their marketing campaign. However, research suggests that not all the product/services categories have the same success rate. Therefore, this study aims to disclose which product/service categories are best promoted with text messaging.

Q2: Which product and service categories will best be promoted to and received by consumers through text messaging?

3.3 Privacy issue pertaining to text messaging as mCRM medium

3.3.1 Consent

Literature in permission marketing suggested that consumers are likely to refuse to accept messages when consent is not given (Golem, 2002; Tizende et al., 2002), because text messages are considered content that require payment from customers receiving the message. In addition, changing cell phone numbers is not as convenient as changing an email address, so unwanted messages or spam could dramatically irritate consumers when irrelevant messages are sent (Sinisalo et al., 2007; Islam et al., 2011; Sultan, 2005). Therefore, it is proposed that:

H1: Consumers consider text messaging without their consent unacceptable.

3.3.2 Push vs. pull strategies

Today, marketers use push and pull strategies when delivering text messaging to their clients (Scharl et al., 2005). While push strategy campaign, a predominant method, involves delivering unsolicited messages, pull strategies involve delivering messages based on customers' requests (e.g., based on information they found via mobile applications or on banner ads). A study by Dickinger & Haghirian (2004) found that 50percent of text messages were in a push mode, 45percent in pull and 5percent in both. Even though push strategies are more economical to companies than that of pull strategies, customers may view the unsolicited contents as intrusive and unwelcome (Yunos et al., 2003). Therefore, to build and maintain relationship with customers, it is proposed that:

H2: Consumers prefer pull strategies over push strategies.

3.4 Success measures of using text messaging services as mCRM medium

The ultimate outcome of mCRM is to deliver optimal experiences to consumers so that they remain loyal and continue supporting businesses (Khurana & Chaudhary, 2010). Using text messaging services as a mCRM medium can help companies promote relationships with customers through communications and interactions. This could result in an exchange of goods, services, or information. Therefore, this paper investigates the likelihood of consumers to redeem coupons and the appropriate numbers of text messages that consumers are willing to accept.

Q4: What is the likelihood of consumers to redeem coupons?

Q3: What is the number of text messages consumers prefer to receive per month?

4. Methodology

4.1 Focus group interview

The main objective of the focus group interview was to get better understanding of consumers' perceptions towards text messaging services. A group of 12 people who were more than 18 years old and had experience with mobile marketing were recruited to participate in the study. The focus group members were asked for their perception, attitudes, and intentions of using mobile marketing.

4.2 Questionnaire survey

The questionnaire consists of 30 questions to assess four main constructs: mobile device usage, attitudes toward different mCRM strategies in different industries, privacy concerns, and intention. The survey was designed to take about five to ten minutes to complete. *Mobile device usage* was measured using a constant sum scale (Reibstein, 1978), asking respondents to allocate a total of 100 points among different usages of mobile devices (i.e., calling, text messaging, accessing the internet, email, and others). Constant sum scales are appropriate for this study. According to Griffin and Hauser's study (1993), there was no significant difference between direct rating, constant-sum scale, and anchored scale in terms of measures of importance. Constant sum scales, however, provide fine discrimination among stimulus objects. *Attitudes* toward four text messaging strategies as mCRM (i.e., SMS coupons, SMS alerts, SMS contests, and SMS product information) were measured by four-point interest scales ranging from "not interested" to "very interested". Lastly, *privacy* was measured using a five-point Likert scale (ranging from "strongly disagree" to "strongly agree"). *Intention* was measured by asking respondents how many text messages per month are acceptable and how likely they are to redeem a coupon sent via text messaging.

Online consumers who owned mobile devices were targeted for this study. A total of 926 usable responses were returned. The wave analysis method (Armstrong & Overton, 1977) was used to assess nonresponse bias by comparing early respondents with those of the late respondents. The results showed that there were no differences in the distributions between the early respondents and the late respondents. The characteristics of the respondents to this survey were comparable to recent 2010 text messaging user profiles (Nielsen, 2011).

5. Data analysis and results

5.1 Demographic profile of respondents

Table 1 shows respondent's demographic profile of this study. The 926 respondents were split between female (62.2percent) and male (37.8percent). Most respondents were fairly young, between the ages of 18 to 24 (64.9percent); were single (73.2percent); had an income between \$5000 and \$9,999 (30.1percent); had some college degree (57percent); actively participated in text messaging on their mobile devices (91.1percent); and did not have a data plan that included capabilities for accessing the internet on their mobile devices (57.9percent).

Variables	Values	Frequency	Percent	Cumulative Percent
Gender	Female	576	62.2	62.2
	Male	350	37.8	100.0
Age	18-24	601	64.9	64.9
	25-34	200	21.6	86.5
	35-44	80	8.6	95.1
	45-54	38	4.1	99.2
	>55	7	0.8	100.0
Marital status	Single	678	73.2	73.2
	Married	204	22.0	95.2
	Others	44	4.8	100.0
Income	<\$5,000	185	20.0	20.0
	\$5,000 to \$9,999	279	30.1	50.1
	\$10,000 to \$19,999	170	18.4	68.5
	\$20,000 to \$29,999	96	10.4	78.8
	\$30,000 to 39,999	76	8.2	87.0
	> \$40,000	120	13	100.0
Education Level	Less than high school	5	0.5	0.5
	Some high school	54	5.8	6.4
	High school graduate	60	6.5	12.9
	Some college	528	57.0	69.9
	Associates degree	105	11.3	81.2
	Bachelors degree	141	15.2	96.4
	Masters degree	33	3.6	100.0
Text messaging on mobile device	Yes	844	91.1	91.1
	No	82	8.9	100.0
Data plan	Yes	390	42.1	42.1
	No	536	57.9	100.0

Table 1. Respondent's demographic profile

5.2 Mobile device usage

A constant-sum scale (Reibstein, 1978) was used as a measure of importance weights for different usages of mobile devices. As seen in Table 2, text messaging was the most popular usage of mobile device (mean=47.32 with standard deviation of .911), followed by calling (mean=42.73 with standard deviation of 42.73 percent).

Rank	Mobile Usage Importance (constant-sum scale) Usages	Importance Weight (percentage of points assigned)	Std. Error
1	Text Messaging	47.32	.911
2	Calling	42.73	.942
3	Accessing the internet	6.24	.372
4	Email	3.55	.267
5	Others	0.17	.045

Table 2. Mobile device usage

5.3 Results

5.3.1 What forms of text messaging services are acceptable to consumers? (Q1)

As shown in Table 3, 28.2 percent of the respondents indicated that they would like to receive coupons on their mobile devices via SMS messaging, but 71.8 percent said they would not. 22.8 percent of the respondents indicated that they would like to receive alerts on their mobile devices, while 77.2 percent would not. 8.1 percent of the respondents indicated that they would like to receive contests on their mobile devices via SMS messaging; 91.9 percent said they would not.

Variables	Values	Frequency	Percent	Cumulative Percent
Interest in receiving coupons	Yes	261	28.2	28.2
	No	665	71.8	100.0
Interest in receiving alerts	Yes	211	22.8	22.8
	No	715	77.2	100.0
Interest in receiving contests	Yes	75	8.1	8.1
	No	851	91.9	100.0
Interest in receiving product information	Yes	75	8.1	8.1
	No	851	91.9	100.0

Table 3. Consumers' attitudes toward text messaging strategies as mCRM

5.3.2 Which product and service categories will best be promoted to and received by consumers through text messaging? (Q2)

As shown in Table 4, using a 4-point interest scale (1=Not Interested, 2=Somewhat Interest, 3=Interested, 4=Very Interested), the results showed that respondents were interested in receiving coupons (mean ≥ 2) and that their interest were in coupons for restaurants (mean=3.15), entertainment (mean=3.11), and retail stores (mean=2.98), respectively. Respondents were somewhat interested in receiving coupons in grocery (mean=2.57) and automotive (mean=2.02) industries, while they had little interest in receiving coupons in banking industry (mean=1.62). In addition, respondents were somewhat interested in receiving alerts in most industries: entertainment (mean=2.43), retail stores (mean=2.25), banking (mean=2.24), restaurants (mean =2.17), and grocery (mean=2.07), respectively. Respondents were not much interested in receiving alerts in automotive industry (mean=1.83). Results further showed that consumers were somewhat interested in receiving

contest information in all industries: entertainment (mean=3.37), retail stores (mean=3.01), restaurants (mean=2.92), grocery (mean=2.43), automotive (mean=2.31), banking (mean=2.00) industries. Finally, results revealed that consumers were somewhat interested in obtaining product information from firms in all industries: entertainment (mean=2.97), restaurants (mean=2.61), retail stores (mean=2.58), automotive (mean=2.20), grocery (mean=2.18) and banking (mean=2.05).

Sectors	Mean Scores (Standard Deviations & Ranked)			
	Interest in receiving coupons (n=261)	Interest in receiving alerts (n=211)	Interest in receiving contests (n=75)	Interest in receiving product information (n=75)
Restaurants	3.15 (.835,1)	2.17(1.06,4)	2.92(.846,3)	2.61(1.00,2)
Entertainment	3.11(.847,2)	2.43(1.04,1)	3.37(.697,1)	2.97(.844,1)
Retail Stores	2.98(.903,3)	2.25(1.05,2)	3.01(.874,2)	2.58(1.04,3)
Banks	1.62(.905,6)	2.24(1.10,3)	2.00(1.03,6)	2.05(1.17,6)
Grocery	2.57(1.06,4)	2.07(1.07,5)	2.43(1.09,4)	2.18(1.10,5)
Automotive	2.02(1.03,5)	1.83(0.99,6)	2.31(1.07,5)	2.20(1.07,4)

Table 4. Level of consumers' interests in receiving different types of mCRM strategies by industries

5.3.3 Consumers are likely to consider text messages sent from firms without their consent unacceptable (H1)

A majority of all respondents (61percent) strongly agreed that text messages without consent are unacceptable, as shown in Table 5. Further exploration using across-tabulation

Age		It is unacceptable for companies to text me without my consents					Total
		Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	
18-24	Count	22	28	54	170	327	601
	% within Age	4%	5%	9%	28%	54%	100%
25-34	Count	8	4	12	38	138	200
	% within Age	4%	2%	6%	19%	69%	100%
35-44	Count	4	0	1	12	63	80
	% within Age	5%	0%	1%	15%	79%	100%
45-54	Count	3	0	0	7	28	38
	% within Age	8%	0%	0%	18%	74%	100%
≥55	Count	0	0	0	0	7	7
	% within Age	0%	0%	0%	0%	100%	100%
Total	Count	37	32	67	227	563	926
	% within Age	4%	3%	7%	25%	61%	100%

Table 5. Consumers' perceptions of text messaging without consents by age

analysis revealed an association between age and consumers' perception of text messages without their consent being unacceptable (chi-square = 44.852, d.f. = 16, sig=0.000). The results showed that the older respondents were likely to consider text messages without consent to be unacceptable (e.g., 54 percent of respondents aged 18-24 versus 100 percent of respondents aged over 55).

5.3.4 It is likely that consumers prefer pull strategies over push strategies (H2)

Using a 5-point Likert scale (1=strongly disagree, 2=disagree, 3=neither disagree nor agree, 4=agree, 5=strongly agree), the results shows that respondents preferred to use mobile applications to seek out offers (mean = 3.53) rather than having a company contact them through text messaging (mean = 2.69). The mean differences (0.84) were statistically significant (sig=.000). See Table 6.

	Mean Scores	Standard Deviation	Mean Differences
It is acceptable for company I shop with to text me offers. (push strategy)	2.69	1.253	0.84
I prefer to use mobile applications to seek out offers rather than a company contacting me through text messaging. (pull strategy)	3.53	1.224	

Table 6. Consumers' perceptions toward push strategy versus pull strategy

5.3.5 What is the number of text messages consumers prefer to receive per month? (Q4)

As shown in Table 7, a majority of respondents (43.6percent) did not want to receive text messages from companies (mean=1.12 text messages per month, standard deviation = 1.196).

# of Texts	Frequency	Percent	Cumulative Percent
0	404	43.6	43.6
1	184	19.9	63.5
2	202	21.8	85.3
3	99	10.7	96.0
4	37	4	100.0

Table 7. Consumers' perceptions of the appropriate number of texts to be received per month

5.3.6 What is the likelihood of consumers to redeem coupons? (Q3)

A majority of respondents (58.7percent) indicated that they were not likely to redeem the coupons that they received via text messaging, as shown in Table 8. Nevertheless, a good proportion indicated that they were somewhat likely to redeem the coupon (mean= 1.48, standard deviation =.627).

Likelihood to redeem coupon	Frequency	Percent	Cumulative Percent
Not likely	544	58.7	58.7
Somewhat Likely	316	34.1	92.9
Very Likely	66	7.1	100.0

Table 8. Likelihood of coupon redemption

6. Conclusion

6.1 Discussion and recommendation

There is an exponential growth in using text messaging, or SMS, as a mCRM tool to create a meaningful dialogue with individual customers (Boulding et al., 2005) to build and maintain relationship between firms and their customers (Sinisalo et al., 2007). Evidence shows that there is an enormous failure rate from CRM projects (Saarikoski, 2006). This phenomenon has led to an observation that, while technologies play a significant enabling role for mCRM, they are only one part of the equation (Sinisalo et al., 2007; Crosby & Johnson, 2001). The key to success is to understand what customers really want over time and to incorporate human processes into the use of the technology. There has been limited empirical research into understanding consumers' attitudes toward using text messaging as a tool for mCRM. This paper fills the research gap in the literature by examining consumer's perceptions toward different forms of text messaging services in different industries and identifying different privacy concerns as well as delineating success measures of text messaging services.

Respondents in this survey indicated that the text messaging abilities of their mobile device were the most popular feature. This finding indicates that delivering mCRM campaigns via text messaging could be a viable avenue for companies to build a dialogue with their target market, given consumers' familiarity with the use of text messaging.

However, using text messaging as mCRM requires extensive planning. The findings revealed that majority of consumers were still reluctant to receive text messages, from even familiar companies. Further investigation found that consumers were particular about receiving certain forms of message. Although young consumers were relatively more optimistic than older consumers (Mort, 2005), a majority of consumers of all ages viewed unsolicited text messaging without their consent as being unacceptable. Therefore, companies should understand that, while consumers may enjoy text messaging for personal reasons, the majority may still be uncomfortable or simply uninterested in receiving coupons on their mobile devices. Marketers are recommended to launch an awareness campaign about the text messaging campaign and to get customers to opt-in or consent prior to sending messages to them.

In addition, the findings revealed that consumers preferred to initiate the request for text messaging services (pull strategy) than receiving text messaging services from companies without requesting them (push strategy). The findings confirmed that consumers' privacy concerns were the key entry barriers for mCRM text messaging. Marketers must take this concern seriously and thoroughly investigate consumers' wants and needs continuously so

messages are relevant. In addition, marketers can initiate marketing campaigns on other mobile applications with the link for consumers to request text information (coupons, alerts, contests, product information etc.).

If companies are to send text messaging via a push strategy, the findings showed that the appropriate number of text messages is 1.12 text messages per month. Therefore, it is suggested that companies limit their text messages to current consumers to no more than one per month to maintain a healthy relationship with customers.

Among different forms of mCRM text messaging, coupons received most interests from consumers and a good proportion of consumers indicated that they were likely to redeem the coupons. A study by Jupiter Research estimated that, by the end of 2011, more than \$87 billion in revenues will be generated by 3 billion mobile coupons.

Consumers indicated interest in receiving coupons from the restaurant, entertainment, and retail industries. Customers were interested in receiving contests information, alerts, and product information from the entertainment industry. Interest was indicated in alerts but only modest interest in product information from the restaurant, retail, banking, and grocery. The automotive industry was somewhat unique, with customers somewhat interested in product information but not in alerts or contests.

6.2 Managerial implications

The findings of this study provide insights for firms interested in using text messaging as a mCRM medium. For example, marketers have to be aware that text messaging from companies is still not well received by consumers due to privacy concerns. Marketers must respect these concerns and develop policies and systems to address privacy issues. Companies must not send text messages to consumers before consent is granted. Companies should clearly communicate their opt-in and opt-out policy terms and conditions as well as their guidelines on privacy and customer information sharing. In addition, companies should convince their consumers that the interaction is worthwhile (Lin & Wang 2006) by launching a marketing campaign to educate customers about their firm's text messaging benefits. To entice consumers to participate in the mCRM text messaging programs, companies could include incentives for the customers to give their personal information, such as a chance to win some prizes in a lottery or discounts on goods and services.

Since permission is not permanent and the validity of consumers' permission relies on the relevancy of services provided, permission to send text messages must be renewed on a regular basis when push (un-requested) messages are used. An analysis of text messaging requests from customers through pull strategies could be analyzed. Then, companies could generate similar structured contents (un-requested content) through push strategies and bundling with other mobile applications to increase acceptance and minimize frustration. For examples, travel providers could deliver alerts about flight status to their customers as a bundle with mobile check-in.

After choosing the content of the messages, marketers should decide what forms of text messaging should be delivered. Consumers indicated interest in receiving coupons from the restaurant, entertainment, and retail industries. Customers were interested in receiving

contests information, alerts, and product information from the entertainment industry. Interest was indicated in alerts but only modest interest in product information from the restaurant, retail, banking, and grocery. The automotive industry was somewhat unique, with customers somewhat interested in product information but not in alerts or contests.

6.3 Theoretical implications and future research

Text messaging as a mCRM medium is new, and this paper represents one of few attempts to empirically investigate an area deficient in empirical research. It offers a conceptualization of mCRM and analyzes consumers' perceptions toward text messaging in maintaining a meaningful dialogue with companies. Different issues such as privacy concerns, age, and types of industries are suggested as potential moderating factors in the success of mCRM.

Our results have some limitations, being exploratory in nature and addressing only four forms of mCRM text messaging in six industries, namely, the restaurant, entertainment, banking, retail, grocery, and automotive industries. The use of an online survey may result in sample bias, since people with certain characteristics may be more likely to respond to online surveys. Nevertheless, the demographic profiles of the respondents to this survey were comparable to mobile user profiles at the time of data collection, and the wave analysis (Armstrong & Overton, 1977) did not detect response bias in the collected data of this study.

Future studies can extend this research by replicating this study in other countries and on a larger scale. Future research can also investigate the role of various forms of text messaging services on different measures of mCRM. Other moderating variables could be further examined, such as consumers' shopping orientation (e.g., recreational, experiential, convenience or economic orientation), mCRM text messaging experiences, and types of industry.

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