
M-COMMERCE: THE ROLE OF SMS TEXT MESSAGES

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ABSTRACT

This paper explores the marketing role of SMS text messages. While Internet based m-commerce has been disappointing, commercial applications for SMS are developing rapidly. The conceptual framework compares SMS to telemarketing and email marketing, and describes the key features of this new medium. Five distinct SMS business models are identified and discussed.

We used quantitative research among mobile users to assess attitudes to SMS marketing. Most respondents were concerned about junk messages and wanted to control incoming messages. Initial attitudes to advertising in text messages were negative, but many were prepared to accept advertising in exchange for discounts or promotional offers.

INTRODUCTION

The development of Internet based m-commerce has been disappointing: restricted sites, slow download, small screens, and the limited number of handsets, currently constrain commercial development. At the same time companies are beginning to recognize the potential of SMS (Short Message Service) text messages, as a low cost, high impact communication medium, that can be received by almost all mobile phone users. Several companies are adopting highly innovative m-commerce strategies using SMS text messaging. 15 billion SMS messages (Cyberatlas 2001a) were sent over GSM (Global System for Mobile Communications) wireless networks during December 2000. It is predicted that worldwide, within three years, there will be 100 billion SMS messages per month, this equates to three SMS messages per day, per mobile phone user. Reuters (Haywood 2000) calculates current annual growth rate at 1000%. Durlacher (Muller-Veërse 2000) estimates that around 90% of current SMS volume is person-to-person, with information services, email notification, SMS chat and distribution of ring tones accounting for the remaining 10%. This paper explores the marketing potential of business-to-consumer SMS.

CONCEPTUAL FRAMEWORK

M-Commerce

The Durlacher M-Commerce Survey, (Muller-Veërse 2000) claims that European m-commerce is two years ahead of the US, and forecasts a value of €23,600m (approx \$21bn) by the year 2003. More conservatively, for 2003, Jupiter projects that worldwide advertising, commerce and subscription revenue from mobile phones will only reach \$7.5bn, (Jupiter Media Metrix cited by Cyberatlas 2001b). Worldwide predictions for 2005 vary widely from \$64.4bn (Frost and Sullivan), to \$210.8bn (Ovum) to \$1,800bn (Gartner), (all cited in Haywood 2000). Durlacher predicts that mobile advertising will be the major m-commerce application. SMS text messaging is expected to grow rapidly and be available until 2005, when it will be replaced by instant messaging via GPRS and email.

M-Commerce has been likened to having *"your best salesman in the pocket of your best customer"*. Rask and Dholakia (2000) claim that m-commerce has two distinct advantages over e-commerce: the typical m-commerce consumer is more time than money conscious, and is accessible at any time, at any place. Barnet et. al. (2000) list three main features of m-commerce that improve personalization: mobiles are carried everywhere and are kept switched on, operators can detect a user's exact location, and operators are uniquely able to determine the identity of the user (unlike e-commerce where access may be from several PCs, and where PCs may be shared).

The ubiquity of access creates a blurring of personal and business boundaries, as Rask and Dholakia (2000, p 11) point out, *"With growth in m-commerce, it will become increasingly difficult to maintain role distinctions"*. The mobile creates the opportunity to engage users about work issues at home, or about home issues at work; users are unlikely to carry two phones or maintain separate accounts, so this will result in a blurring of roles. They distinguish three locations: home, office and elsewhere, and two roles: on and off duty, to produce six location-role combinations. Although the actual location of the user may be known, his role, i.e. whether he is on or off duty, is usually not known.

Telemarketing

Leiderman, (1990) defines telemarketing as *"any measurable activity, using the telephone to help find, get, keep and develop customers"*. Under this definition SMS messaging is technically a form of telemarketing. Telemarketing can be highly effective, as Leiderman asks *"When did you last leap out of the bath, and run downstairs to look at a television commercial?"* The advantages of telemarketing are its persuasiveness, response rate, interactivity, and measurability; major disadvantages are the high cost and non-acceptance by of some consumers, (Shapiro and Wyman 1981; Leiderman 1990; Stone 1996)

The Wyman telemarketing survey in 1980 (Stone and Wyman 1992) found that when respondents were initially asked about proactive telemarketing the initial acceptance level

was only 13%. The research found the following six attributes to be relevant (in order of importance): the caller was professional and courteous, the caller was not a computer, the company had a good reputation, the call was at a convenient time, the respondent was interested in the product and had good previous experience with the company. When told to assume that all these conditions were present, acceptance of telemarketing rose to 47%. However, even assuming these favorable circumstances, 53% still found telemarketing unacceptable. Acceptance level was significantly lower among those who had recently received many telemarketing calls, were older, more educated and had higher incomes.

This suggests the acceptability of SMS may be low, as it is computer generated and lacks a professional salesman. However, it is less intrusive and therefore probably more convenient. Acceptability of SMS is likely to depend on age, income, education and the number of messages received. Except for age, the demographics of mobile phone users tend to assuage its acceptance.

Email Marketing

There were 891 million email accounts at the end of 2000 (Messaging On Line 2000) an increase of 57% on 1999. Forrester (Niall 2000) describes email marketing as one of the most effective online marketing tools, and expects email marketing to be worth \$5bn by 2004. Email marketing response rates are estimated at between 3.5% and 15 % (Niall, 2000; Jupiter cited in Hogges 2000). Jupiter estimates that 11 billion retention-related email messages were sent in 2000, and projects 236 billion by 2005.

Wreden (1999, p3) describes email marketing as the *"Internet's killer application"*; he cites as advantages the precision with which email can be tailored, targeted and tracked. Low costs and digital processing means that companies can send out huge numbers of emails. Unlike Internet advertising, the medium is push rather than pull, the consumer does not have to instigate the interaction, and currently response rates are high. Peppers and Rodgers (2000, p 4), claim that *"clear benefits, including high response rates and low costs are rapidly turning email marketing into an invaluable tool"*. eMarketer (2000) estimates that 61% of all medium and large US companies use email marketing on a regular basis.

However, spam, or unsolicited email sent out to multiple recipients, taints the reputation of email marketing; to avoid being perceived as spam, several authors recommend companies should restrict the messages they send (Wreden 1999; Wright and Bolting 2001). Research (IMT Strategies 2001) found an escalation in un-opened emails, and increased action on the part of consumers to limit or remove most commercial online relationships.

Permission Marketing

Godin, (1999, p 43) coined the term 'permission marketing' which is based on consumers giving their consent to receive marketing information. Permission marketing *"offers the consumer an opportunity to volunteer to be marketed to"* and it is therefore *"anticipated,*

personal, and relevant". The idea of consent is not new; customer permission in direct marketing had been introduced in the context of privacy issues in direct marketing (Milne and Gordon 1993). It is particularly relevant to Internet and wireless marketing because the low marginal cost of messages creates a potential volume problem for consumers. Unsolicited messages, or spam, create problems for consumers and affect the marketer's brand. Permission marketing improves targeting, and helps consumers receive relevant promotional messages, thus improving response rates. The interactivity of the Internet facilitates communication of consumer preferences and their 'permission'.

Krishnamurthy (2001) presents a model where consumer interest in a permission-marketing program depends on five factors: message relevance; monetary benefit; personal information entry costs; message processing costs, and privacy costs. He also introduces the concept of permission intensity, which he defines as *"the degree to which a consumer empowers a marketer in the context of a communicative relationship"*. Three factors characterize high permission intensity: high information quality, high information quantity and information usage flexibility.

Permission is usually given using opt-in or opt-out boxes. Marketers can frame questions to encourage consent and discourage opt-out. A study by Cyber Dialogue found that 69% of US Internet users did not know they had consented to inclusion on email lists (Bellman, Johnson and Lohse, 2001). Research by Bellman et. al. demonstrates that 'consent' depends on the design of the question. An opt-in question, where the default is not to participate, produces half the participation of an opt-out question, where participation is the default. This raises the question of the extent to which not opting-out can be regarded as 'permission'.

A survey by IMT Strategies (1999) found that permission email has a higher response rate than non-permission email; more than half of their respondents felt positive about receiving permission email. Successful permission marketing is about building long-term relationships with customers once the initial permission is granted. The consent, trust and two-way exchange of information help to develop the relationship between the consumer and the brand.

Properly executed, permission marketing may not even be perceived as marketing by the consumer; for example, when Amazon advises that a favorite author has published a new book, this is seen as useful information, not advertising. Permission marketing is particularly relevant to text messages because the invasiveness of the message, and the characteristically social use of the medium, mean that it is likely to cause irritation unless the recipient has consented.

SMS

SMS has been described as the 'killer application' of m-commerce, (Quios/Engage 2000). SMS advertising is growing rapidly, Merrill Lynch, (cited in Andersen Consulting 2000) expects European mobile advertising to reach €1bn (\$0.9bn) by 2005. Ovum (Davison et. al. 2000) predicts that by 2005, 20% of all Internet advertising will be wireless, with

costs per thousand exposures 2 to 3 times higher than PC Internet advertising. Forrester (cited in Quios/Engage, 2000) anticipates a cost of up to \$30 CPM, 5 or more times the cost of PC Internet advertising. These prices reflect the relative effectiveness of the two media.

A number of surveys have found that mobile advertising is acceptable to consumers if it reduces cost or sponsors a service. In the Wireless Services survey although 86% of respondents considered advertising on wireless devices to be intrusive, 50% would accept advertising messages which subsidized costs, (Internet.com 2000). US research by Strategy Analytics, (Patel 2001) found that 45% of mobile subscribers would accept advertisements in return for free calls. In the Wireless Commerce Monitor (Kelsey 2000), almost 50% of wireless users would opt for an advertising-sponsored source of information such as traffic reports, news, weather and promotional messages. Not all users find mobile advertising acceptable; a Jupiter survey (Jupiter, 2001) found 36% of consumers willing to accept advertising in return for subsidized content and access, but for 46% no form of compensation would persuade them to receive mobile advertising.

Acceptance depends on the type and relevance of the message. An Australian survey (Alectus 2000) found that while 37% of male and 38% of female respondents welcomed text messages advertising employment opportunities, nearly all their respondents regarded product advertising by text message as a nuisance and an invasion of privacy.

Results of an advertising-sponsored SMS service for Euro 2000 were positive. This service sent messages to members notifying them of goals scored by their favorite teams. Quios/Engage (2000) found that 80% would use the service again. Their research found strong sponsor recall and increased use of sponsors' websites, however only 25% felt they had gained a positive impression of these sponsors. Members welcomed further real-time information services, suggesting sporting events, news, entertainment events and auctions.

Wunker and Hughes (2001, p 18) claim that wireless advertising is a "*compelling new way to advertise*". For retailers especially it has several important advantages: it is cost effective, targeting can be based on time, place and profile, advertisements can reach consumers at point of action, messages can be tailored for specific locations, it is flexible, and it is measurable. The advantages of SMS include its intrusiveness, ubiquity, low cost, computer generation, and ease of personalization. However, in content terms SMS is currently extremely limited. On most phones, messages are text-only and cannot be more than 160 characters. Recipients can usually only store a few messages, and cannot file them for reference. On the other hand, unlike most marketing communication, they cannot simply be ignored.

SMS marketing is similar to email marketing; it is low cost, computer generated, and can be personalized. Relative to email marketing the main disadvantages are its very limited text format, lack of click through to URL, higher cost, and the current limited availability of lists. Key advantages are its intrusiveness, interactivity, immediacy and targeting by location. Table 1 compares SMS to other forms of direct marketing.

Table 1: Comparison of Direct Marketing Techniques

	<i>Direct Mail</i>	<i>Telephone</i>	<i>Email</i>	<i>SMS</i>
<i>Reach</i>	All households	Most households	Internet users	Mobile users
<i>Response rate</i>	Approx 2%	10% -20%	3.5% - 15%	Not known
<i>Cost</i>	Medium \$1	High \$10	Very Low 5c	Low 10c
<i>Time to organize</i>	Slowest – materials, post	Slow- scripting & briefing	Quick	Quick
<i>List availability</i>	Very good	Good	Limited	Very limited
<i>Response time</i>	Slow	Quick	Quick	Quickest
<i>Materials</i>	Any: text, visuals, objects	Voice only	Text, visuals	Short text only
<i>Personalization</i>	Yes	One to One	Yes	Yes
<i>Consistency</i>	Consistent	Variable	Consistent	Consistent
<i>Persuasive impact</i>	Medium	High	Low	Low
<i>Interactivity</i>	No	Yes	Yes	Yes
<i>Access</i>	Home	Home	Home/work	Everywhere
<i>Intrusive</i>	Low	High	Medium	Medium- high
<i>Immediacy</i>	No	No	No	Yes
<i>Targetable by location</i>	No	No	No	Yes

Sources: Author and Stone (1990), Yeshin (1998) Roberts (2001), Niall (2000), Peppers and Rodgers (2000), Rask and Dholakia (2000).

SMS Business Models

From the consumer perspective there are at least six different types of commercial SMS: information, forwarding, entertainment, shopping, special offers and alerts. There are at least five SMS business models: subscription, transaction, promotion, customer service and cost reduction (see Table 2).

Table 2: SMS Marketing Business Models

<i>Business Model</i>	<i>Example</i>
Subscription	Email forwarding service
Transaction	Vending purchase
Promotion	Inclusion of advertising within message
Customer Service	News service from service provider
Cost Reduction	Reduction of printing and mailing costs

Subscription SMS services include email forwarding and unified messaging. Giveusthescore.com charges \$10 for an annual subscription to text football match goals and results. Potentially, other information services and alerts could also be subscription services, although many of these are currently free.

Transaction will include time-sensitive purchases such as last minute gifts of flowers and chocolates, purchase and sale of shares, and transfer of funds. SMS can also be used as a payment mechanism for vending machines. The consumer sends a message using SMS, payment is charged to a credit card on the phone bill, and a message from the operator releases the vended item or service. Haywood (2000) views comparative shopping as a potential 'killer application'. Scan.com offer a service where users send SMS messages from point of purchase in a retail store, asking for competitive quotes, this enables Scan's Internet based partners to compete with high street locations without their cost structure. Muller-Veërse (2000) predicts that gambling and auctions will be important areas of mobile transactions. An advantage of SMS for transaction is that the phone can simultaneously be used to check credit worthiness, alternatively, the transaction can be charged to the phone bill.

The role of SMS in promotion includes branding, advertising, sales promotion, and PR. Nokia used a branded game, played using the Internet and text messages, both to develop their brand and create a database. Although advertising is constrained by the text only format, this is counterbalanced by its intrusiveness. Advertising is often used to subsidize information services (e.g. onlineweather.com). The localization of SMS makes it particularly appropriate for sales promotion of retail outlets. It has been used in shopping malls (e.g. Lakeside in the UK) to advise shoppers of special offers. Consumers send a text message when they enter the mall and receive a text message listing special offers; they can then text for further details of any promotion. The immediacy of SMS makes it ideal for last minute promotion of events; Nightfly.com use it for events in bars and clubs, and report a 10% redemption rate. An interesting example of PR is the promotion of the film *Bridget Jones' Diary*; the launch was promoted by a number of SMS information services including installments of the diary, quizzes and personal advice.

The customer service role of SMS, where SMS is used to add customer value and improve service, has huge potential. The free information services provided by mobile service operators are in this category. These information services currently include news, share prices, exchange rates, weather, sports news, flight times, horoscopes, cinema times, restaurant listings, and music charts. Several banks have also developed SMS services, e.g. First Direct, which sends information and alerts to customers with weekly statements and pre-specified transactions. Potentially alerts have an important role in improving customer services by reducing waiting, and improving appointment systems. For example, garages could notify clients when their cars are ready, restaurants could advise when the table is ready, etc. Starbucks, are running a trial allowing users to pre-order their drinks. Customers text while walking to the coffee shop, so that their drinks are waiting for them when they arrive. For Starbucks the driver is the estimated 20% of customers who see a queue at the counter, and go elsewhere.

SMS based commerce can also reduce costs by eliminating administration, printing, paper and mail costs, e.g. the SMS tickets and membership cards provided by Mticket.co.uk. The SMS check-in that British Airways has introduced both improves customer service and reduces the cost of check-in staff. Similarly, the alerts sent out by First Direct increase customer service whilst simultaneously reducing the cost of handling telephone queries.

For all these business models the mobile service-provider is in a strong position. The limitations of the medium constrain communication; in order to avoid unsolicited messages and improve message relevance, users may prefer their service-provider to control the SMS marketing communications they receive.

RESEARCH AGENDA

The research covers consumer attitudes in three areas arising from the literature review:

1. Permission marketing
2. Attitudes to receiving advertising on SMS
3. Separation of work/home role

METHODOLOGY

Three face-to-face interviews were conducted with executives in the mobile phone industry to assist in the design of the questionnaire. The draft questionnaire was piloted by nine people, and amended accordingly. The final questionnaire was distributed as an email Excel attachment, which could be returned by email, fax or post. A convenience sample of mobile phone users was employed; using the 'snowball' technique, the questionnaire was emailed to 33 acquaintances who were asked to forward it. To encourage a quick response a prize draw of two £20 vouchers was offered.

Data Analysis

In the tables the '*Agree*' and '*Disagree*' columns show re-coded scores amalgamating the agree and disagree scores from the original seven-point Likert/Stapel scales. The means shown are of the original scores. Significance has been tested using the Pearson Chi-square test on the original scale data except where stated otherwise.

RESULTS

Within the two-week deadline 101 questionnaires were returned; 64% of respondents were male, 36% were female. Demographically usage of text messages was similar except that men were significantly more likely to use text messages for work (significant at 99%, $p = 0.01$). Females sent nearly 50% (13.75 vs. 9.75) more messages per week. A

comparison of the means using Independent t-test showed significance at 99% confidence level, $p = 0.005$.

Permission Marketing

There is considerable concern about the control of text messages as shown in Table 3. Most respondents wanted to control their text messages, agreed that unsolicited text messages were annoying, were concerned about junk mail and would like to find a way to block all unwanted messages. They would generally like to receive messages only after giving permission, but some (25%) would allow an Internet business (e.g. their service-provider) to monitor SMS traffic.

Table 3: Permission Marketing

<i>Question</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Mean</i>
<i>I would like to be in control of who can send me commercial text messages</i>	91%	6%	3%	1.58
<i>I am concerned that giving permission to an Internet business to send me text messages will open the gate for 'junk messages'</i>	92%	1%	7%	1.82
<i>I would like to receive text message based services only after giving specific permission to the Internet business</i>	91%	4%	5%	1.81
<i>I would like a way to block all unwanted text messages from being delivered to my phone</i>	85%	7%	8%	1.97
<i>Unsolicited text messages would annoy me</i>	83%	2%	15%	2.18
<i>It would be acceptable for an Internet business to monitor my text messages in order to provide a better service</i>	25%	5%	70%	5.32

SMS Advertising

Respondents were generally negative about advertising within text messages, as shown in Table 4. However, when advertising subsidized the message sent, or the cost of phone calls, attitudes were more polarized, with a substantial number of respondents being prepared to accept advertising on these terms. The acceptance of advertising in exchange for discount phone calls was directionally related to age, with younger respondents being more receptive to this offer, although the relationship was not significant ($p < 0.07$). Similarly, attitudes to receiving advertising from subscription services and to forwarding discount vouchers were polarized. Attitudes to discount vouchers were significantly related to age, with younger respondents being more likely to forward promotions, (significant at 99% confidence level, $p = 0.012$).

Table 4: Attitudes to SMS Advertising

<i>Question</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Mean</i>
<i>It would be acceptable to receive text messages from businesses with whom I am unfamiliar</i>	10%	5%	85%	6.00
<i>Receiving an advertising message within a text message would be acceptable</i>	10%	16%	84%	5.66
<i>I would send a text message including a 1 line advertising message providing I could send it for free</i>	37%	17%	46%	4.45
<i>I would agree to receive advertising text messages in exchange for discount phone calls</i>	44%	16%	50%	4.04
<i>It would be acceptable to receive advertising text messages from Internet services I had subscribed to</i>	49%	14%	37%	3.97
<i>I would forward a text message 'voucher' to my friends, allowing them a discount on specific goods or services</i>	58%	19%	33%	3.31

Separation of Work/Home Role

Three questions explored this subject, as shown in Table 5. A majority of respondents felt it was acceptable to receive text message services at work, but were more polarized about receipt of work messages when off duty. Attitude to blurring of roles is gender biased with 50% of females Vs 28 % of men finding it unacceptable. This relationship to gender is significant (95% confidence level; $p = 0.025$).

Table 5: Work/Home Role

<i>Question</i>	<i>Agree</i>	<i>Neutral</i>	<i>Disagree</i>	<i>Mean</i>
<i>It would be acceptable to receive a text message service (e.g. local traffic update) while at work</i>	65%	18%	17%	3.20
<i>It would be acceptable to receive work orientated messages whilst off duty</i>	52%	13%	36%	3.93
<i>I would like to keep work text messages limited to work hours, and social text messages for other times</i>	36%	26%	39%	3.93

Similarly, when asked whether they would "like to keep work text messages limited to work hours and social text messages for other times" the response was polarized. Again, there is a significant gender bias with 53% of females Vs 26% of men preferring to limit messages to the appropriate role, (95% confidence, $p = 0.024$). Restricting messages to the relevant role was also significantly related to payment of one's own phone bill; 43% of those who pay their own phone bills agreed with this restriction, compared to only 27% of those who are subsidized, (99% confidence level, $p = 0.003$). A comparison of the means (Independent t-tests) showed that this question is rated significantly differently

both by gender and by who pays the bill (99% confidence level, $p = 0.009$ for gender, $p = 0.004$ for paying bill). Apparently if work is providing the phone it gives them access to the user when off duty.

DISCUSSION OF RESULTS

Most respondents were very concerned about junk messages and wanted to retain control, giving permission before receiving messages. This concern is likely to accelerate with the growth of SMS advertising volume. Unsolicited mobile marketing is potentially far more intrusive than email. Unlike email, on most phones the sender is not shown until the message is opened, and therefore the message cannot be deleted without opening the message. Messages have to be read in order, and typically the phone can only store 10 messages. Thus junk SMS will seriously affect the recipient. In addition, the possession of the mobile phone number makes the user potentially vulnerable to far more intrusive mobile telesales calls. It is also very inconvenient to change a mobile phone number, or to have a separate 'alias' number. There is currently a proposal for an EU directive making all direct marketing emails opt-in only, (Sweney 2001). In view of consumer attitudes, it is likely that such legislation would be extended to include text messages.

While most respondents found it unacceptable to receive advertising within text messages, 37% would send 1 line of advertising attached to subsidized messages, and 44% would accept advertising in exchange for subsidized calls. These results are in line with previous research; even when subsidized about 50% of users will not accept text message advertising. Results are more positive for promotional vouchers, with only a third of respondents being unwilling to forward these. There is some evidence that receptivity to discounts and promotional offers is age related, with younger (and probably less affluent) respondents being more positive.

Although most respondents are happy to receive text services when at work, they are less sanguine about work related messages when off duty. Women were more concerned about the blurring of roles, perhaps because they separate their work/homemaking roles more than men. This suggests that companies should be careful about sending work related text messages to women who may be off duty.

Research Limitations

The research sample was small and not representative of the population as a whole. Distribution by email may have introduced further bias. As SMS marketing is so new, it is likely that many respondents had not yet experienced or thought about some of the issues, and therefore the research may have been premature.

Future Research

There is scope for further research into the acceptance of advertising in exchange for discounts and offers. Acceptance is likely to depend on age, income, the nature and

frequency of the message, and the value of offer. Future research could also explore gender-based differences in the usage of, and attitudes to, text messaging.

The area of permission marketing also needs further research. Currently 'permission' is used loosely, ranging from not opting-out to expressly requesting an alert or service. Research could relate consumer attitudes to different levels of permission intensity.

CONCLUSIONS

SMS marketing is growing rapidly with a diverse range of creative marketing applications. Like email it is a low cost interactive medium, which can be targeted, tracked, and tailored. Relative to email, key advantages are its intrusiveness, interactivity, immediacy and targeting by location.

Attitudes to SMS marketing are similar to attitudes to telemarketing, with non-acceptance from about half of consumers. However, while consumers can refuse to take a phone call, or block an unwanted email, they are currently powerless over their text messages. This creates an opportunity for modifications in mobile phone design, and for new message-control services. If these are not available, offences from some companies may create a backlash adversely affecting the industry as a whole.

Respondents are surprisingly susceptible to persuasion to accept SMS advertising in exchange for discounts or special offers. This suggests yet another new marketing area, exchange marketing, where consumers could be paid both to receive marketing communication and to divulge useful profile information.

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