Users Feedback on SMS-Parking Service in Oman

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Abstract
Mobile technology is exactly what the name implies - technology that is portable, which makes mobile computing possible. Mobile computing has increased quite rapidly over the past few years. The major drivers of mobile computing are large number of mobile phone users. As their number is increasing worldwide, different organizations are offering their services using the mobile devices. Oman is a developing country that strives to adapt M-services. The emerging mobile technology is impacting and becoming the main element that moves Oman forward and helps in its national development process. Internet penetration in most developing countries like Oman is still low as opposed to mobile dissemination. The number of mobile phone users increased substantially since its launch in 1996. Prepaid mobile services and SMS were introduced in 2001 and both are currently popular with subscribers. Such fine appeal influenced many government organizations to go mobile with their services. This paper reviews the current M-government initiatives in Oman and reports the initial feedback of users on the SMS-Parking Service introduced recently by a joint venture of the Muscat Municipality and the Oman Mobile Company offering mobile services to its citizens. This study shows that in spite of all these initiatives still the users are cautiously adapting to M-services as reported on the SMS-Parking Service.

Keywords: mobile computing, M-services, short message service (sms), SMS-parking service

INTRODUCTION
Mobile devices are now becoming a part of our daily and business lives. Mobile devices have changed how people interact and conduct business, driving demand for the next generation of products and services. With an estimated one trillion networked devices coming into play over the next five years, enterprises are increasingly looking to advances in wireless technology and mobile devices to grow revenues, reduce costs, maintain their competitive edge and achieve high performance AMOS (2010).

Mobile technology with the introduction of internet enabled mobile phones, Personal Digital Assistant (PDA), Wi-Fi and wireless networks have offered their users to enjoy all the benefits of telephones, information accessing, and text messaging such as SMS Turban & Volonino, (2010). At the end of 2001, approximately 14% of the world population – (850 Million people) – was mobile phone users. This growth has been spectacular especially in Europe after the telecom industry de-regulation and adoption of Global System for Mobile (GSM) communications Sadeh (2002). Now, mobile phones are no longer used only for voice communication but are a convenient way of connecting to the Internet and are used for transferring data, mailing, and doing small scale business transactions Sadeh (2002). Mobile phone penetration is well above the home PC's usage in Europe and it seems that the trend will continue Varshney and Vetter (2000). The internet access via mobiles or wireless devices in Middle East has risen from 33.5% in 2007 to 40% in 2009. Furthermore, the percentage of desktops use decreased from 63.50% to 58.93% as laptops use increased from 81.35% to 82.80% Oman Mobile (2010). Mobile or wireless devices are widely used not only by developed countries but also commonly used by many other developing nations of the world including Oman.

Everyone is amazed at the quick proliferation of mobile phones in the developing world Wayan (2010). A recent estimate indicated that over half of the Omani populations have mobile devices, while the mobile infrastructure in Oman is currently covering 95% of the country Ministry of National Economy (2007). Oman has just started to utilize mobile channels to offer M-services to its citizens and clients. Some of the examples are like; Muscat Municipality developed an SMS-Parking Services system which enables motorists to pay parking fees via SMS. Higher secondary school students can now retrieve their end of semester grades (via SMS) by messaging their student seat numbers to a phone number designated by the ministry of education. Similarly, many other organizations are offering M-services through SMS, messaging to clients to inform them about their different activities.

Although there are many other applications of Mobile Services in Oman, which are needed to be explored further and to see their influence on users. This study is an attempt in that direction and continuation of my earlier work on SMS-Parking service in Oman.
OBJECTIVES OF THE STUDY
The two major objectives of this study are as follows:
• To present an overview of what initiatives are taken on Mobile services in Oman
• Report the users’ initial feedback on the SMS-Parking Service recently introduced in Muscat, the capital of Oman.

BACKGROUND TO THE STUDY
The Sultanate of Oman is one of the Gulf Cooperation Council (GCC) country located on the south east of the Arabian Peninsula. Oman occupies an area of 309,500 square kilometers Ministry of Information Oman, (2008b). It shares borders with United Arab Emirates to the north-west, the Kingdom of Saudi Arabia to the west, the Republic of Yemen to the south and the Arabian Sea lies eastwards. Oman is divided into five regions i.e. Adh-Dakhiliyah, Adh-Dhahira, Al-Batinah, Al-Wusta and Ash-Sharqiyyah and four governorates i.e. Al Buraymi, Dhofar, Musandam and Muscat. The total adult literacy in Oman is 81% which is very high in the region and per capita income reaching to US$ 9070. Oman’s real renaissance began with the accession of His Majesty; Sultan Qaboos bin Said Al Said to the throne on 23 July 1970 Ministry of Information Oman (2008a). Oman’s government system is monarchy Ministry of Information Oman (2008a).

According to the latest estimates Ministry of National Economy Oman (2007), in 2006 Oman had a population of 2.677 million people. However, nearly 693,000 residents, (25.9 per cent of the population), were expatriates. Oman’s currency is the Rial which is about USA $2.60 per unit OMR (Omani Rial). The country’s main revenue comes from oil and natural gas. The country’s economic status was substantially enhanced by rising oil prices. According to the Ministry of National Economy Oman (2008), Oman’s 2008 GDP reached about OMR 13,737 million, compared to OMR 104 million in 1970.

M-Applications Services
Mobile applications services are offered through SMS are commonly known as Push and Pull services Adagunodo et.al. (2009). A Push SMS application is one whereby a message is sent from the application to the user and it is one way. In other words, it is the mobile application that initiates a message Naqvi, Al-Shihi (2009).

Push Services
Muscat Securities Market has developed a paid service that enables investors to receive regular updates on market and stock alerts via SMS. The service also enables users to get an SMS every 30 minutes on market movers-top winners, losers and most active companies Oman Mobile (2010). The Civil Aviation and Meteorology in cooperation with Oman Mobile has introduced a weather forecast service, for most cities and towns in Oman, which allows users to receive weather reports on their mobiles. Other public organizations have also started to send bulk messages to citizens informing them about certain activities and events. For example, the Public Authority for Social Insurance has currently begun a public campaign to publicize its services and benefits to clients. One of the methods used was to send announcements through SMS to all residents in Oman. Another example is in Oman Tender Board and Ministry of Manpower where they now send notification messages to clients about their transactions and/or other different issues such as new tenders and job vacancies etc. Oman Mobile (2010).

Pull Services
A Pull SMS application on the other hand is one whereby a user sends a request and obtains a reply from the application such as:

The Royal Oman Police (ROP) initiated a mobile service allowing drivers to inquire and receive information about their traffic offences. Motorists send a message, of their National ID card number and vehicle details to, ‘3004’ and they receive information on the number of traffic offences and the fine to be paid. The ROP plans to enable the system to notify drivers of their offences as soon as they happen, which will be useful to parents to keep an eye on their children driving activities, and business owners can monitor their company’s drivers violations on time which can help reduce the traffic offences Naqvi and Al-Shihi (2009).

The Ministry of Education now sends the final General School Certificate (GSC) results to students via SMS. Alternatively, students can inquire about their results by messaging their seat numbers to ‘92020’ and they receive their final results. In addition, the Higher Education Admission Center now informs students on their enquiry of their admission status in different institutions via SMS, allowing them to accept or reject the offer by messaging back their choices. Oman Mobile (2010). Muscat Municipality first time offered SMS-Parking Service which enables motorists to pay parking fees via SMS. This service is viewed and the users’ initial feedback is reported in this paper. This new service is offered along the Traditional Parking service.

Traditional Parking Service
The Parking in Muscat especially in Central Business District (CBD) is extremely difficult. The Muscat Municipality has designated parking areas for car parking services with sign boards’ instructions. The car parking is allowed with the payment of the parking fee only through the payment booths. The user can park the car in a designated area and look for the municipality parking payment booth. The user can pay the parking fee through coins for the time
required and get a receipt. At present the charges are 50 Baisa for half an hour parking. The user can enter the coin either through 50 Baisa coins or 25 Baisa coins for the time required and get receipts in duplicate. One part of this receipt has to be displayed behind the wind shield of the car and the second one the user can keep with him for his/her record. The parking ticket is valid for the specified date and time as mentioned on the ticket. If the user wishes to extend the period, he/she must go back to the booth and get another ticket and replace the old ticket with the new one which is inconvenient and time consuming. As the user has to look for coins and take care of the ticket and keep an eye on the expiry time as well. The penalty for nonpayment of parking ticket on the expiry of the parking time, is 100 times more than the fee for half an hour parking.

The disadvantages of Traditional Parking Service are summarized as:

**Disadvantages**
- Park the car and get the right coin/s
  - The most machines do not accept the new coins of 50 Baisa
  - Walk to the booth to pay and walk again to the booth for renewal when needed.
  - Keeping an eye on the expiry time and rush to the booth for renewal or move the car.
  - If one booth is down the user has to search for another working booth

**SMS-Parking Service**

The Muscat municipality and Oman mobile have jointly introduced this new service as described earlier for paying the parking fee. The service is simple to use, the user should have a mobile phone with either a pre paid or postpaid option and the fee will be deducted or sent through his/her monthly mobile phone bill. The user can park the car and send an SMS to "90091" with the details of the car plate number and the minutes for which the parking is needed. The users will get a confirmation message for a successful transaction. The user will then get a reminder message five minutes before the allocated time expires either to move the vehicle or renew their parking time Oman Mobile (2010). This flow of information from the user goes to the Oman mobile and passes to the Muscat Municipality data bank. The inspector receives the information on his PDAs and then uses this information while inspecting the parking sites for violations. There are three steps to use this service:

- Step 1: SMS to 90091 your car no, car code, time in minutes. e.g.: 6416 HR 60
- Step 2: A confirmation message will be received with ticket no, car no, car code, purchase date/time, expiry date/time
- Step 3: 5 minutes before time expires customer will be notified through SMS

The major features of this service are summarized as:
- Users can pay the parking fee by sending an SMS.
- It functions 24 hours a day, 7 days a week.
- Users are notified when they make an invalid request.
- It is relatively easy to use.
- It is flexible and could be used from any mobile accessible location.
- It offers a paperless, efficient, quick and convenient service to the users.
- It saves time just park the car and send an SMS.

**METHODOLOGY**

An initial survey was conducted to explore the users’ feedback on the SMS-Parking Service. The data was collected between late 2009 and early 2010 from seventy eight car parking users, of which 56% were male and 44% female. A questionnaire was developed for this study consisted of fourteen questions. These questions were designed based on three major domains related to accessing SMS-Parking Service, attitudes towards the use of the service and the users’ preferences SMS-Parking over Traditional Parking service. Responses to each question were based on a scale of 1 to 5, where 1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, 5 = Strongly Agree. The questionnaires were administered in the same way to all users. Only the questionnaires which were responded and filled up completely were taken into consideration. Simple analysis of the data was done by computing the aggregate responses on the major domains using Microsoft Excel 2007 and the results were presented through plotting a graph to highlight the responses.

**RESULTS AND DISCUSSION**

**Accessing SMS-Parking Service**

The feedback on accessing the SMS-Parking service by users indicated that at least 62% of the total 78 users responded in agreement that SMS-Parking service is accessible at any time of the day. There are significant number of users at least 28% feel that this service is not comfortably accessible from all locations at all the time as shown in Figure 1. This could be either technical or users inability to use the service.

![Figure 1. Accessing SMS-Parking Service](image-url)
Attitudes towards SMS-Parking Service
On the questions related to attitudes towards the SMS-Parking service at least 51% respondents agree that SMS-Parking is useful, friendly and easy to use as shown in Figure 2. This showed that little more than half of the respondents have positive attitudes toward the service which could be the happy users of the service as users’ attitudes demonstrate users’ intention to act and use actual system. However 56% of the users feel that it is not fast enough, which could be an inhibiting factor of its quick acceptance.

It appears that there is a need for creating greater awareness on the availability, accessing and advantages of this new service. As Muscat Municipality is the one offering this service can play a major role in this respect and may look for means to improve the service further.

SUMMARY AND CONCLUSION
Mobile technology is exactly what the name implies - technology that is portable, which makes mobile computing possible. Mobile computing has increased quite rapidly over the past few years. The major drivers of mobile computing are large number of mobile phone users. As their number is increasing worldwide, different organizations are offering their services using the mobile devices. This advancement in mobile technologies has also influenced many government organizations to go mobile with their services and the introduction of SMS-Parking Service in Oman is a good example of it.

The results showed that more than half of the users were able to access and tried this new service. However, a large number of respondents either uncertain or disagree on the accessibility of this service. It appears that these users were either not aware of its advantages or they were reluctant to use the service. Moreover, nearly half of the total number of respondents indicated positive attitudes towards it, and similar number of users indicated their preference, for using the new service over the traditional one. Based on these results, this new service cannot be called a great success. It appears that there is a need for marketing of the service, educating and creating more awareness among the users on the benefits of SMS-Parking Service. Still there is a need for further investigation with a larger sample size and a more robust analytical model to enhance and confirm the results.

REFERENCES


