

# Pricing of Mobile Messaging

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## Abstract

This paper studies the pricing of current mobile messaging applications such as SMS, MMS, email and IM. General qualities of successful pricing concepts are identified both from operator's and end user's perspective. Flat rate, usage based and block pricing concepts are discussed in detail in order to identify a possible solution for packet based communication pricing.

*Keywords: pricing, mobile, SMS, MMS, email, flat rate, usage based pricing*

## 1 Introduction

Currently mobile operators in mature markets create 5-20% of their total revenues from mobile messaging [1]. The revenues come mostly from Short Message Service (SMS) but other promising messaging solutions such as Multimedia Message Service (MMS), mobile email, Enhanced Message Service (EMS) and Mobile Instant Messaging (IM) are entering the market. Mobile operators want to increase average revenue per user (ARPU) and mobile messaging is seen as the way to drive up uptake of a wider portfolio of data services. Correct pricing of messaging services is a key success factor for adopting new services.

Mobile operators are no longer the only ones to compete for mobile messaging revenues. Also Internet Service Providers (ISPs) are taking a share of mobile messaging revenues with solutions like Blackberry from Research In Motion (RIM).

In this paper I study the current pricing concepts of person-to-person mobile messaging and qualities of a good pricing concept from both operator's and end user's perspective. This is followed by an evaluation of flat rate and usage based pricing schemes and presentation of block pricing concept. Finally the paper concludes in chapter 7 that summarizes the key features of the paper.

## 2 Current Pricing Concepts

### 2.1 Short Message Service (SMS)

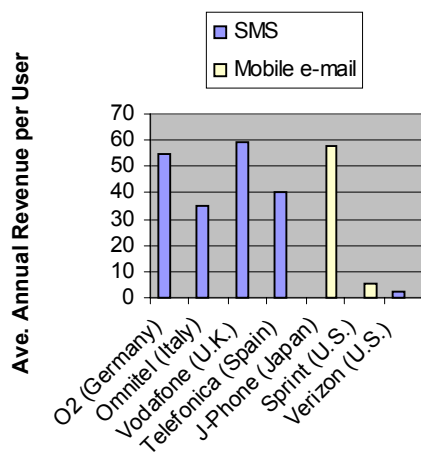
SMS messages contain a small, fixed amount of data and that has made their pricing easy. Currently SMS messages are priced in three different ways: per message, based on a monthly flat-fee or free of charge to some user predefined numbers. The last concept was recently introduced by the Finnish mobile operator Saunalahti in its new TiVKOR rate plan [2]. Per message pricing is usually tiered and sending messages to other operators' numbers is thus more expensive. The simple nature and pricing of SMS is definitely one reason to its enormous success.

### 2.2 Differences in SMS Revenues

There are considerable differences in messaging ARPUs achieved by different operators as shown below in figure 1. Vodafone in the UK generated the highest messaging ARPU worldwide in 2001 [3]. Right pricing is the key in translating high usage to revenues as the case of Philippines shows. Philippines have enjoyed a phenomenal success of SMS messaging but high usage has not compensated for the low price. SMS was

initially free in Philippines and now it may cost even less than \$0.01 per message [3]. This kind of pricing has depressed overall messaging revenues when compared to other markets. In addition, there is evidence that the Philippines prefer SMS to making voice calls and that further decreases voice usage and revenues.

Even modest SMS price increases have been greeted by civil unrest in Philippines. This shows that once customer expectations of pricing have been set, they may be difficult to change.



**Figure 1 Annual Messaging ARPUs [3]**

### 2.3 Multimedia Messaging Service (MMS)

MMS messages can vary a lot in size because they can carry different kinds of media. The message size can be from a few hundred bytes if text-only to a few hundred kilobytes in case of audio or video clip. This makes MMS pricing so challenging.

Operators have three options to price MMS messages:

- Fixed per-message price regardless of the content and size of the message
- Price based on the message size i.e. number of kilobytes required to send it
- Monthly flat fee

Most operators including e.g. Sonera have currently pilot pricing concept for their MMS services. In order to get a wide user base fast they have taken the fixed per-message price approach or its variant in which two prices are set: one for messages up to a certain size (generally 30 kilobytes), and another for bigger messages. In Europe only T-Mobile in the UK has started MMS services with monthly flat-fee but it changed its pricing policy in November 2002 to per-message pricing. In most countries MMS message prices are being set in the range of 0.55-0.65 Euro [6].

The pricing concept based on the message size is very problematic because end-users experience great difficulty in understanding the data requirement of different media.

### 2.4 Mobile Email

Mobile email is an efficient way to communicate when packet based network is used. Its pricing is based on GPRS data pricing i.e. number of kilobytes sent. Operators are experiencing problems to find the right balance between mobile e-mail and MMS pricing because mobile e-mail is a substitute to MMS to a large extent. For example, a picture message can be sent in both formats but with the current pricing schemes it is usually cheaper to send it in e-mail format.

However, there is a difference in user experience. MMS is a better solution for time critical messaging because it is delivered directly to a mobile handset whereas e-mail needs to be downloaded to the handset.

### 2.5 Example: A Picture Message in Sonera's Network: MMS vs. Email

This example illustrates the complexity of MMS pricing when mobile e-mail is an alternative messaging solution. The message size used in the comparison is the estimated average MMS message size, 30 kilobytes [4].

### **MMS in Sonera's Network**

If the message is sent as an MMS, it has a fixed per-message price, 0.59 Euro [5].

### **Email with Sonera Open Data GPRS Connection**

With Open Data connection the average price per kilobyte is 0.00596 Euro. This means that sending the 30 kilobyte message as an email costs circa 0.18 Euro, which is considerably less than the MMS price.

As can be seen, there is a huge price difference in sending the same message depending on the used application. This kind of inconsistency in pricing is expected to disappear and this would indicate that a fixed per-message price for MMS is not a long-term possibility. In addition, mobile e-mail seems to be a cost effective alternative for SMS too. However, SMS is in many cases time critical application and that will prevent mobile email from substituting SMS usage.

### **2.6 Mobile Instant Messaging (IM)**

Instant messaging has changed from fixed line communication tool to mobile with the emergence of 2.5G networks. Mobile IM is expected to be particularly successful in the North American and Western European markets. Main fixed line players like AOL, ICQ and MSN are entering to the mobile business. MIM data traffic is of light weight and is expected to be billed on per packet basis.

### **2.7 Enhanced Message Service (EMS)**

EMS is an enhancement to SMS and it adds life to SMS text messaging in the form of pictures, animations, sound and formatted text. Ringing tones and icons are based on EMS standard.

EMS messages are priced per-message and the pricing of these services is more of topic of content pricing.

### **2.8 Blackberry Messaging Solution**

Blackberry is a proprietary messaging solution from RIM (Research In Motion) that is primarily marketed for its wireless e-mail handling capability. It has been successful in the US especially in the corporate messaging market. Blackberry is a personal digital assistant that can include software for maintaining a built-in address book and personal schedule. Blackberry follows flat rate pricing scheme. For instance, a price plan for Blackberry from Earthlink costs \$39.95 per month for wireless e-mail and wireless internet access costs \$9.95 on top of the basic service plan [7].

## **3 Requirements for a Successful Pricing Concept**

The new, complex mobile messaging services such as MMS need a well thought pricing concept to become successful. There is still little experience of pricing these new services and general requirements for a successful concept are presented below.

### **3.1 End User's Perspective**

More than anything end-users require that the pricing concept is simple. The service will not be adopted if they do not understand the logic behind the pricing and if charges are not easily predicted. In addition, experiencing the feeling of a "ticking meter" should be limited and price changes should be done with low frequency [8].

SMS pricing has these qualities and its success support the validity of these requirements. In addition, problems of early WAP (Wireless Application Protocol) based services in 2G derived partly from imperfect pricing concept. It was really hard to figure out the total cost for service usage when the billing was arranged per-minute way.

I-mode deploys a mix of subscription and packet based pricing and the results have been

very good even if the transaction price cannot be exactly estimated beforehand. However, Andreas Jonason argues in his doctoral thesis that operators must avoid strict charging per Megabyte in GPRS. According to him the solution lies in finding the right balance between avoiding overuse and protecting profitability [9].

### 3.2 Operator's Perspective

For operators a pricing plan's goal is naturally to optimize revenues but there are also a few other dimensions to that. The implemented pricing plan should contribute to avoidance of traffic congestion, cause no changes to the network, increase customer satisfaction, and enable service differentiation, customization and subscriber information extraction.

## 4 Flat Rate Pricing

Flat rate pricing schemes have started to emerge to mobile world with the advent of packet based communication technologies. Broadband access pricing and mobile messaging pricing are converging but flat pricing is hardly the answer for messaging pricing dilemma.

Flat pricing is favored from two different reasons. Operators can easily implement it and some users simply like it. However, flat pricing has its problems.

### 4.1 Drawbacks

Most of all, flat rate pricing has a high social cost. It does not support optimal allocation of scarce resources but wastes them due to over-usage. Secondly, it does not treat users in a fair way. Light users subsidize heavy users when they pay equal amount for lower usage.

In competitive environment flat pricing is particularly difficult. It does not allow efficient market segmentation and results in easier price comparison that further accelerates competition on price and undermines industry profitability.

## 5 Usage Based Pricing

Usage based pricing per packet is a fair pricing concept for users and at the same time it can be the most profitable concept for operators. MMS is the first high potential service to encounter the challenge of per-packet pricing. The main problem preventing adoption of usage based pricing is unsuccessful marketing communications from operators to consumers.

Simple descriptive metrics need to be developed to support usage based pricing. The pricing needs to be communicated in less technological terms to consumers than in packets. Consumers want to understand the transaction cost before making it.

## 6 Block Pricing

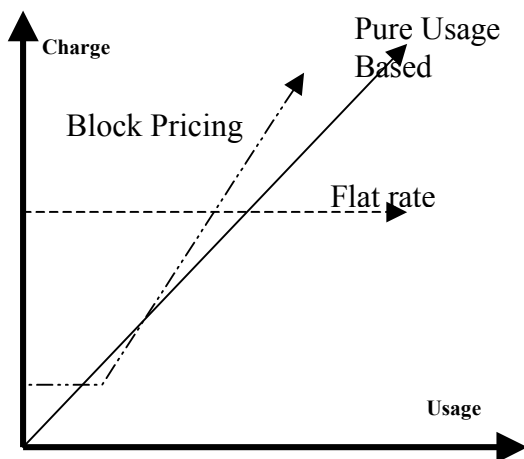
As discussed above the success of MMS is crucial for mobile operators and clear pricing schemes need urgently to be implemented. Block pricing concept has been proposed as a solution to this purpose. This concept for broadband Internet access purposes has been studied in the INDEX project of University of California, Berkeley [8].

Block pricing has been widely implemented in the US in their ordinary cellular rate plans for voice. In the case of MMS that would mean that a plan would include a certain amount of messaging traffic for a flat fee and the exceeding usage is charged per packet or per message basis. The pricing concept is illustrated in figure 2. This type of pricing combines some of the positive qualities of both flat fee and usage based pricing.

This kind of model might help consumers to understand the size of a packet and size requirements of different media when they would experience the amount of messaging traffic their flat fee portion transfers. In addition, this kind of pricing concept would possibly lower the barrier to try these services.

At the moment educating the market is the single most important task of the operators. Consumers will not start using services until they understand thoroughly their price plan. That is what they are interested, not the underlying technology.

**Figure 2 Visualization of Block Pricing**



## 7 Conclusion

Pricing of mobile messaging seems to be divided into two categories. In one category price differentiation of mature SMS services is done to improve customer retention and increase usage while the competition is pushing SMS prices down. The other category is piloting new pricing models for packet based services.

MMS service complexity sets a challenge for pricing strategies and operators are starting with per message pricing to follow SMS pricing concept. This is likely to change into another concept when users find mobile email as an alternative and more cost efficient solution. A possible pricing concept for MMS is block pricing concept because flat rate pricing might undermine the potential of MMS and charges of pure usage based pricing are too unpredictable for consumers.

Pricing concepts are evolving and field experience will lead the development and implementation of new concepts.

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