

**Project P1102**

## **Mobile electronic commerce (eMporio)**



## Goals

This brochure presents the main results of the EURESCOM project P1102 "Mobile Electronic Commerce" (eMporio). The main goal of this project was to investigate the m-commerce market and service scenarios and produce business models, which will help EURESCOM shareholders to gain a lead in this field. This work is based on current and emerging technologies behind m-commerce. A set of recommendations that can help telecommunication service providers to model their own m-commerce services is given. The project has also built demonstrators and showcases, which prove the concepts introduced by the project.

## Introduction

There is no straightforward definition of m-commerce. Many people assume it is merely a transfer of e-commerce to a mobile device. But m-commerce is more. While some of the existing e-commerce services could of course be used on mobile devices, many of them are simply not suitable due to technical and physical restrictions. There are also many services for which mobility in itself does not really signify an added value. The goal of m-commerce is to create a set of services, which

users will adopt and from which extra revenue can be generated. Instead of trying to take e-commerce to a mobile device, a genuine m-commerce service has to make sensible and creative use of mobile devices. Their unique attributes, such as portability, secure interaction capability, personalisation and access to mobile accounts should be balanced against technical disadvantages such as display size and bandwidth.

### Technological trends

During the first part of the project several technologies were studied and trends analysed. The technologies studied are as follows:

- SIM Toolkit and similar technology valid for low-end terminals.
- High-end terminals that can be expected to support Java soon.
- IP-applications over Java.
- Advanced messaging formats, such as EMS and MMS, which are beginning to provide more enjoyable services for users.
- GPRS and forthcoming network services, which enable faster and more cost efficient m-commerce services.

- Localisation infrastructure, which provides a distinctive dimension to m-commerce.

Preferred technologies should have the best profit creation potential. The technology to win the race for getting most customers is not necessarily the most advanced technology, as there are other criteria that decide upon its adoption. The technology that is used by most of the users will be also attractive to be implemented by new players. Technologies evolve at a high speed and operators need to remain alert in order to follow their development.



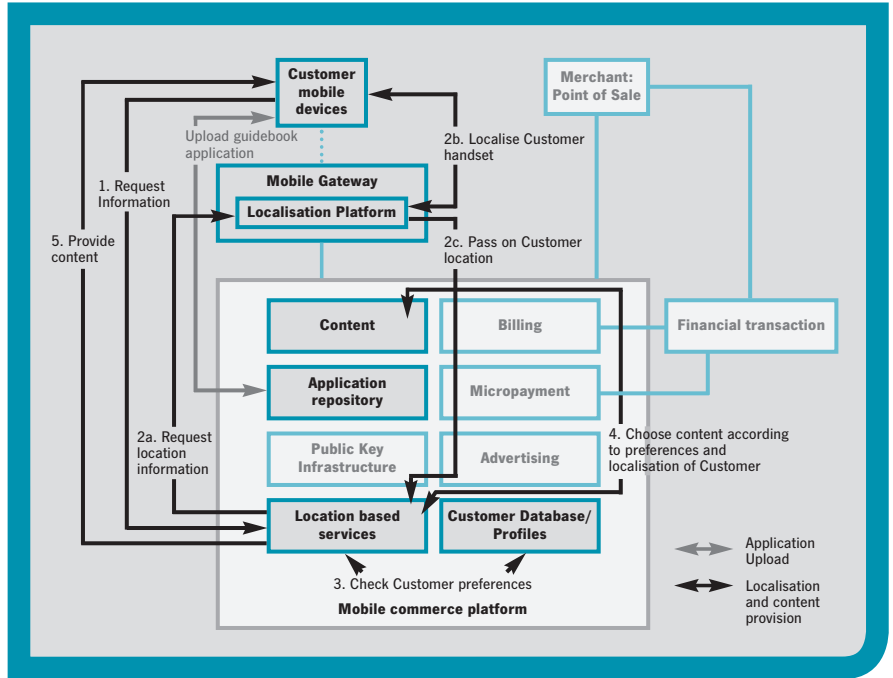
# Service scenarios

The four m-commerce services, which will be presented in the following paragraphs and pictures, have been picked from a multitude of services developed in the project. These services have also provided the basis for the development of promising business models,

because their prospects to succeed on the market and to create revenue for mobile operators were considered particularly high. They both meet the user's expectations and also give the operator the opportunity to take a leading role in the service.

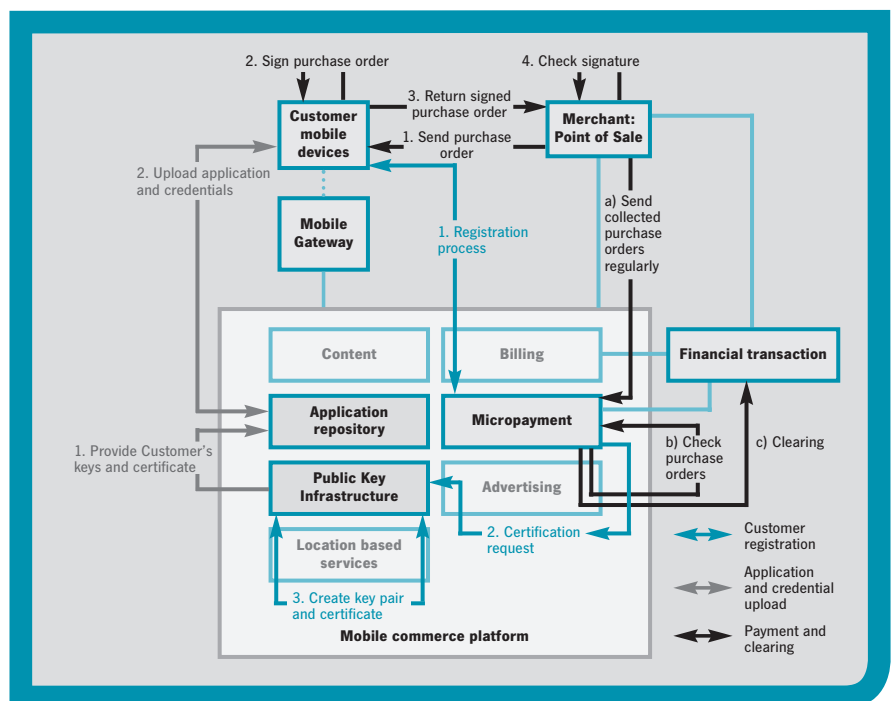
## Location Based Services

Location Based Services are an excellent example of how service providers can make use of the inherent properties of mobile devices. The user is always carrying his mobile device with him that can be localised by the mobile operator. The user does not even have to know where he is, but will get information about his environment by connecting to his service provider. The provider localises the user with the help of the mobile operator and sends him information that is not only based on the user's location, but also on his personal preferences. The following figure gives an example of how a Location Based Service could work.



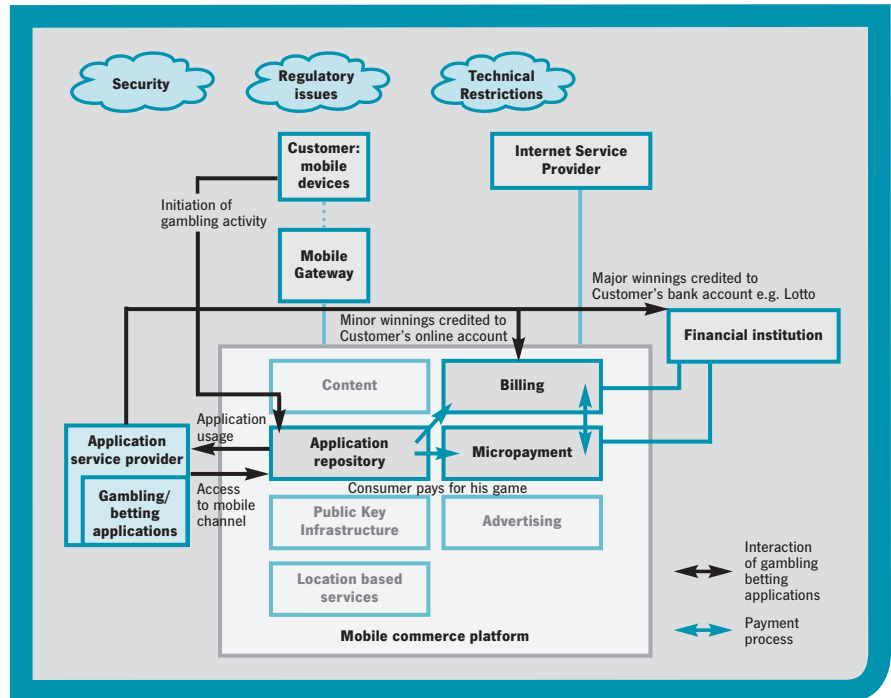
## Micropayment

Payment is an important issue when it comes to adoption and acceptance of services by the customers. With the Micropayment Service depicted below, the customer can turn his mobile phone into a payment device and use it to pay anonymously for goods and services, both at a real and a virtual point of sale. For payment of a chosen item he gets a purchase order from the merchant, signs it with his private key and sends it back. The payment is safe, easy and quick. As the payment is offline and the service provider is only involved in the clearing process, the transaction costs can be kept low. Thus Micropayment is the perfect enabling service for many other m-commerce services that involve the transfer of small amounts of money. The following figure shows how a Mobile Payment Service could be implemented.



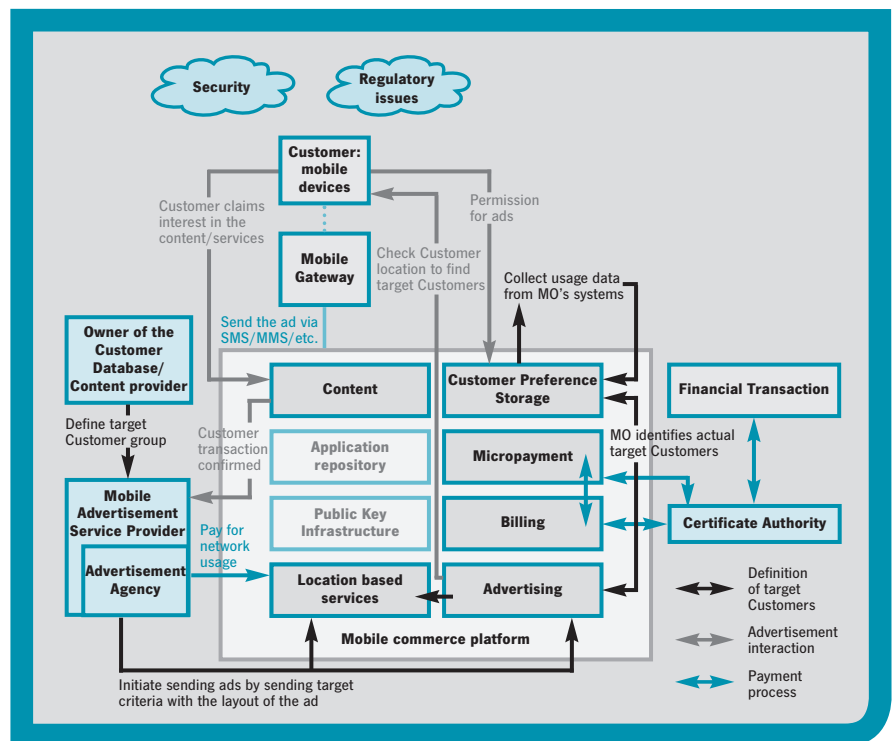
## Gambling

Gambling and betting services, such as lotto, instant games and sports betting, are very popular. Offering corresponding services in a mobile environment has a potential to become a fast and convenient way for a mobile operator to get revenue out of the Business to Consumer (B2C) market. Mobile Gambling appeals to people's natural desire to win, and offers them a pleasant activity they can access anytime and anywhere. The operator should seize the chance to develop those promising services into business models. An example of how he could do this will be given in the section "Business ideas for Mobile Gambling".



## Intelligent Advertising

The basic idea of an Intelligent Advertising Service is that customers, who have given their permission in advance, receive advertisements, e.g. via SMS or MMS, from merchants on their mobile devices according to their personal preferences and location. The Mobile Advertisement Service provider prepares the ad, while the owner of the customer database defines the target group it will be sent to. The mobile operator's task is to select those of their customers that fit the target group, which is defined by preferences and location. If the customer is interested in an offer, he purchases the product or service directly by connecting to the Mobile Advertisement Service Provider. The main advantage of the service is that merchants have a better chance to reach the right person by knowing the user profile. Of course, users will only accept this service, if spamming is avoided.



# A framework for mobile payment schemes

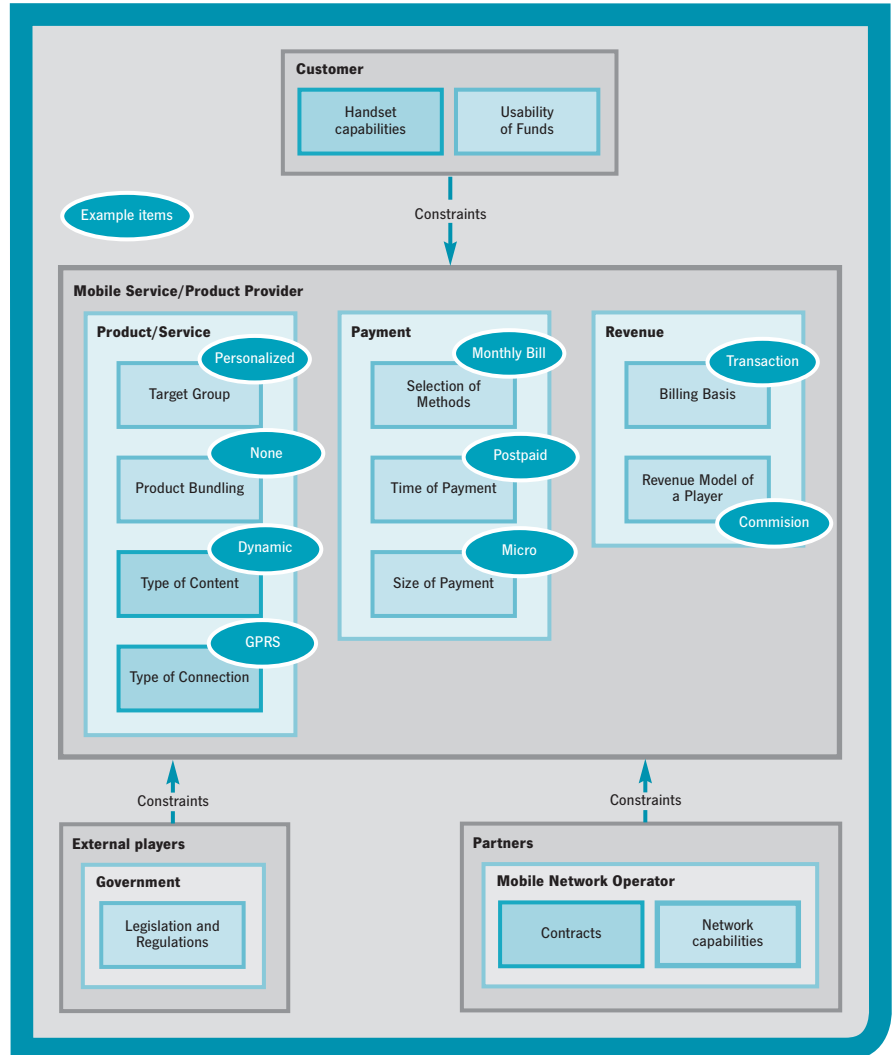
Mobile payment services are playing a central role in mobile commerce as a whole, both as a standalone service and as an enabling service for other m-commerce services. Thus, mobile payment could improve user acceptance by making services more secure and user-friendly.

Starting with the payment scenarios developed in the project, further research was done in the mobile payment area. The aim was to provide a roundup of m-commerce payment possibilities. The resulting document points out the following aspects of mobile payment services:

- The main trends and drivers affecting their development,
- a collection of existing implementations with explanations of the basic schemes, and the information flow of the main types of mobile payments, as well as
- a summary of today's solutions that enables the reader estimate the future evolution in this area.

Finally, a model for classifying payments was developed, as shown below.

This model can be used to identify a set of suitable payment methods for any given situation and m-commerce service. This framework aims at explaining the underlying complexity and interdependencies of decisions for m-payment solutions.

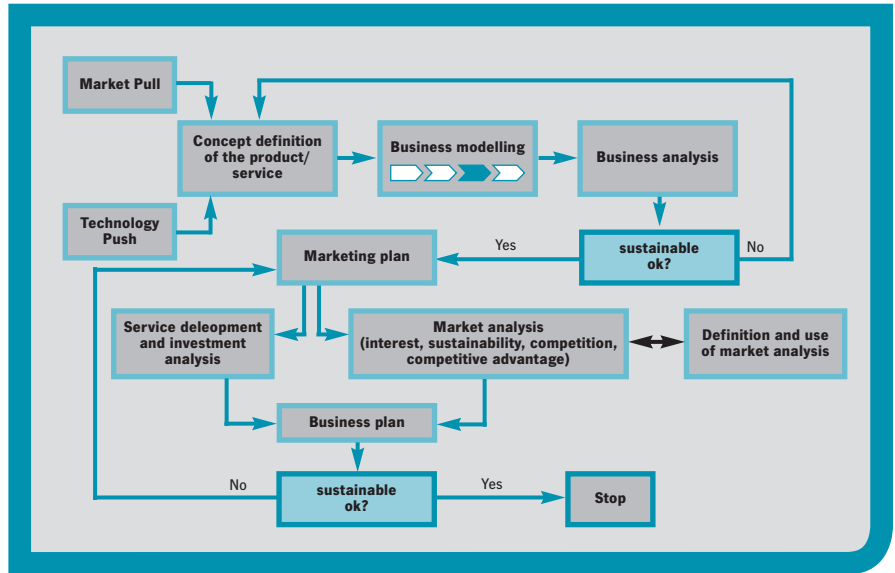


# Pre-business models

While most projects initiated by EURESCOM have focussed on technology, eMporio concentrated on business issues. The reason for this is the fact that in the future it will become more and more important for mobile operators to keep an eye on economic factors such as target customers and competition analysis, if they want their services to succeed on the market.

## Generic framework for business models

The phase of business modelling corresponds to a particular stage inside a more general development process for new products and services. The figure provides an overview of all phases of a development process, from the concept definition to the business plan.



The business modelling is based on four aspects: The service concept, the strategic positioning of the company, a rough definition of the business associated with the service, and last but not least the value of the corresponding market.

The approach followed in the project consisted of considering a business model in terms of actors, roles and business relations such as information, product, service and revenue flows. The core issues identified and defined for each business model are:

- The concept for a new mobile commerce service,
- the positioning of the mobile operator taking into account its strategic advantages,
- the target market, in terms of market segment and corresponding potential,
- the relationship with other strategic business partners.

For selected services described before, the P1102 project developed business models that can be found in more detail in the project deliverables. An outline of the business model for Mobile Gambling, illustrating the issues mentioned above, is presented in the following section.

## Business ideas for Mobile Gambling

The online gambling and betting industry offers attractive prospects for new profitable mobile services and applications. Over the last few years the revenues from the internet gambling area have increased at rapid speed. Analysts propose that their popularity will keep rising steadily. Games like lotto, horse betting, football betting, black jack and other casino games are suitable for such businesses, which represent an impulse purchase area with huge potential. Offering them on mobile devices gives the user the chance to access them anywhere and on each occasion when they have leisure time to kill.

### Usage scenario

Betting is always time sensitive; people always want to bet just before the match or race begins.

Users can send their bets using text-based technologies, like SMS or WAP, and check the status of their bet with their mobile devices. Players can also interact using applications that simulate casino games using 2.5G or 3G terminals. The application can be downloaded to the user's mobile, or run from where it is hosted.

### Payment method

The timing of payment is important, because for a bet to be valid the player should make a legally binding commitment to pay, maybe by mobile micropayment. Players could also subscribe and open a gambler's account that could be loaded with money when desired.

## Players and alliances

The most feasible scenario relies on appropriate partnerships and business alliances, which are based on revenue sharing with a key role for the operator. The main players that could participate in the gambling value chain are the user, an application service provider providing the offers, a payment service provider, an Internet service provider and the mobile operator that provides the network as well as the portal.

## Mobile operator and value chain

The operator should position himself in a key role in the value chain by providing the portal and thus get a share of the revenues accrued by gambling services over its network. Those revenues will be significantly higher than the sheer increase in airtime charges.

In order to achieve this, a mobile operator should exploit its strengths, like brand name, customer base, infrastructure and price control effectively.



# Outlook

In later stages of eMporio a set of showcases and demonstrators were developed to show that the concepts introduced in earlier work are truly viable and feasible. These showcases and demonstrators provide samples of typical requirements and components in a platform architecture.

# Conclusions

The main findings and recommendations for mobile operators who are planning to offer m-commerce services are:

- It is necessary to understand the difference between m-commerce and e-commerce.
- For the formation of long-term m-commerce strategies it is important to know what the state-of-the-art solutions and emerging enabling technologies are.
- For the technologies the operators wish to promote, they should evaluate and do trials in key fields such as service enabling and payment technologies, as well as help seeding the market and popularise the services.
- Operators need to have a good knowledge of regulatory, technological, security or market-related issues.
- Operators have to know their own competence and choose the roles in the business model that suit them best.
- Operators have to examine the market for potential competition and partners.

There is no such thing as a 'killer application'. Successful m-commerce initiatives will be part of an overall range of service offerings by mobile operators, which concentrate on giving consumers the services they find most useful.



The goal was to look at what is needed in a platform for advanced m-commerce services, to verify the theoretical work done earlier, and, in addition, to improve the visibility of the project's results.

## Publications

- T11: Mobile payment methods for M-Commerce, December 2001 – EURESCOM Confidential
- D1: Service Scenarios for m-commerce, January 2002 - EURESCOM Confidential
- D2: Business Models for m-commerce, April 2002 – EURESCOM Confidential
- D3: Platform concept for flexible m-commerce services, July 2002 – EURESCOM Confidential
- Conference paper to IST Mobile Summit 2002 "Service Scenarios and Business Models for Mobile Commerce", Greece, June 2002
- Project Web site including demonstrators and showcases:  
<http://www.eurescom.de/public/projects/P1100-series/p1102>

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## Unknown factors

- Which approach will succeed: A Web based or an application based one (Java)?
- Which enabling technologies will succeed?
- What will the transition cost of the new technologies be, i.e. the cost of introducing new functionalities to the customers?
- Which specific services will users accept?
- There are currently many potential payment methods. The future has to show, which method will emerge as the consensus choice for users.
- What are the legal implications if the operator claims his network is secure?

## eMporio statements

- M-commerce is more than e-commerce on the mobile. Only those services that really exploit the advantages of mobile devices will succeed.
- Operators have a unique opportunity to utilise their relationship with the customer.
- M-commerce services should be part of a larger portfolio of integrated services offered by the operator.
- For the m-commerce services to succeed they have to meet specific user requirements, and the technology is only to enable them.



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