

## **Mobile Business 2** **SS 2017** **Homework 3 - Solutions** **M-Payment**

Fachbereich  
Wirtschaftswissenschaften

Institut für Wirtschaftsinformatik  
 Professur für M-Business & Multilateral Security  
 www.m-chair.de

**Prof. Dr. Kai Rannenber**  
**Ahmed Seid Yesuf, M.Sc.**  
**Iulia Bastys, M.Sc.**

Telefon +49 (0)69-798 34701  
 Telefax +49 (0)69-798 35004  
 E-Mail mob2@m-chair.de

**Note:** The solutions presented below should not be taken as absolute complete answers for the exercises, instead they should be viewed as a subset of possible answers.

**Exercise 1 (M-Payment Cases):** Studentenwerk Frankfurt allows to pay with a mobile payment system called Blue Code (see <https://www.studentenwerkfrankfurt.de/en/eat-drink/general-remarks/cashless-payment/paying-with-blue-code/>).

- a) Did you use it already?
- b) If you answered yes to a), explain your experiences with the system and whether you would use it in the future and for what.
- c) If you answered no to a), explain why you did not use the system and whether you would consider using the system, why you would/wouldn't and under which circumstances.

*Solution:*

There is no unique correct answer to this exercise. The responses are purely subjective and for this reason we do not give a sample solution. However, a 'good' answer should at least mention some factors that affect the acceptance of mobile payment services, such as perceived usefulness, ease of use, credibility, or additional financial costs.

**Exercise 2 (Secure Element):** The Secure Element can be found either embedded into the mobile phone's hardware, or in a SIM/UICC card or in an mSD card. In Lecture 5, we mentioned the advantages and disadvantages of the SIM-based Secure Element.

Briefly discuss the advantages and disadvantages of embedded Secure Element and mSD-based Secure Element.

*Solution:*

	<b>Advantages</b>	<b>Disadvantages</b>
Embedded Secure Element (eSE)	+ Security higher than for the other types of SE	- Not transferable to other devices - Communication protocols between the NFC controller and the eSE are proprietary, not standardized.

mSD-based Secure Element	+ Transferable: can be inserted in any device that supports NFC and has a memory capacity + Compatible with most standards and interfaces for smartcards	- Not widespread, as the communication protocols are not standardized.
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**Exercise 3 (M-Payment Consortia):** In Lecture 6, Slide no. 15, we list several mobile payment consortia. Choose five examples from the list and explain why did they fail or why did they become and/or remain successful, depending on your choices.

*Solution:*

Consortia like Mobipay, EMPS, Ompipay, or Moxmo, which are not on the market anymore, might have failed because of the developing new technologies or because the solutions they proposed were 'ahead of their times'. The emergence of the smartphone market might have also influenced the decline in user acceptance or usage of the services provided by the above mentioned consortia.

Consortia like Obopay or M-Pesa are very popular in societies largely based on cash, in countries such as Kenya, Tanzania, or Senegal. The services provided by these consortia offer people access to formal financial systems and allow them to perform financial transactions in locations where there are no bank branches.

**Exercise 4 (M-Payment Infrastructures):** We saw in Lecture 6 that there are several types of mobile payment infrastructures, depending on the party that processes the transaction.

- In your opinion, in which infrastructure does the party, which processes the transaction, collect more data and in which infrastructure does it make more profit?
- Mention some advantages and disadvantages of each of the infrastructures.

*Solution:*

a) In general, the banks and the payment providers are the parties considered to collect more data about a user. However, in some cases, the merchants are also responsible for building exhaustive dossiers detailing the users buying behavior.

The banks and the payment providers could also be considered as the parties that make more profit, as their customer base is in general larger than that of the other parties. However, both the merchants and the payment providers (can) sell their user data to other third parties, called data aggregators, increasing this way their profits.

b)

	Advantages	Disadvantages
Network operator	+ The merchant does not learn the user identity.	- The network operator learns the user location.
Payment provider	+ Convenience and ease of payment process, from the user perspective	- The payment provider learns as much data as the bank. - High bandwidth communication
Bank-Server <i>Wallet</i>	+ Convenience and ease of payment process, from the user's perspective	- The merchant learns almost the same amount of information about the user as the bank.
Bank-Handset <i>Wallet</i>	+ Convenience and ease of payment process, from the user's perspective + Low bandwidth communication	- The merchant learns almost the same amount of information about the user as the bank.