

## *Exercise 4*

# Economics Basics II

**Mobile Business I (WS 2019/20)**

**Majid Hatamian, M.Sc.**

**Chair of Mobile Business & Multilateral Security  
Goethe University Frankfurt a. M.**



- Exercise 1: L11 – Market Overview of Mobile OSs and Security Aspects
- Exercise 2: L12 – Mobile Trusted Devices
- Exercise 3: L13 – Acceptance and Success Factors in Mobile Business

- a) What are the advantages and disadvantages of mobile OSs unavailable to other device manufacturers?

- ***Advantage:*** Tend to be not as much affected by malware compared to operating systems available to many external manufacturers
- ***Disadvantage:*** Less flexible, as 3<sup>rd</sup>-party software cannot be easily installed and executed
- Later, more and more platforms switched to more open and interoperable operating systems (e.g. Android).

# ***Exercise 1***

## **L11 – Market Overview of Mobile OSs and Security Aspects**

- b) What are the potential threats for users when it comes to using mobile apps?

- Many mobile OSs allow the execution of 3<sup>rd</sup>-party softwares:
  - Malware can be executed on mobile operating systems, either intentionally or by security leaks inside the mobile operating system (exploits).
- Possible threats for the user are:
  - Device malfunction
  - Loss of data (malware erasing data)
  - Loss of money (e.g. malware sending SMS to premium services )
  - Shorter battery runtime (more processing/resource usage)

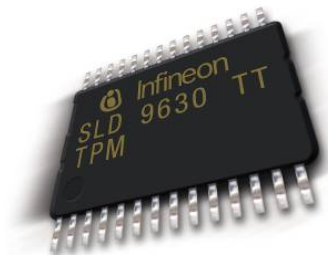
- Exercise 1: L11 – Market Overview of Mobile OSs and Security Aspects
- Exercise 2: L12 – Mobile Trusted Devices
- Exercise 3: L13 – Acceptance and Success Factors in Mobile Business

a) What is the Trusted Platform Module (TPM)?



# Trusted Platform Module (TPM)

- The TPM is a chip to make computers more secure as a part of the TCG specification.
- It is like a hard coded smartcard with the big difference that it is not bound to a concrete user, but to a system (e.g. a PC).
- ***Other usages:*** PDAs, mobile devices, and consumer electronics.
- “Passive” chip, can neither influence the booting process nor the operation directly
- Has a unique identifier and so serves for the identification of the system.



b) How mobile device misuse can be prevented?

- Most mobile devices provide device access protection via PIN or password input.
- Many mobile users don't use this functionality (inconvenience).
- Mobile device could provide protection mechanisms such as
  - strong user authentication,
  - strong user authorisation,
  - data access management,
  - data encryption.



- Exercise 1: L11 – Market Overview of Mobile OSs and Security Aspects
- Exercise 2: L12 – Mobile Trusted Devices
- Exercise 3: L13 – Acceptance and Success Factors in Mobile Business

## **L13 – Acceptance and Success Factors in Mobile Business**

---

- a) Which factors are important for acceptance and success in M-Business? Why it is important to understand these factors?

- ***Which factors are important for acceptance and success in M-Business?***

- Building customer trust
- Acceptance of technologies in a market
- Diffusion of M-Business applications and services



- ***... and why it is important to understand these factors?***

- Need for understanding the customers' choices for using/not using M-Business applications and services and
- to tailor such services to their actual needs.



[RistKoivuKest2005]  
[NohiraLeestm2001]

### **L13 – Acceptance and Success Factors in Mobile Business**

---

- b) Define the term 'trust'. Discuss the main characteristics and parties in a trust relationship.

**L13 – Acceptance and Success Factors in  
Mobile Business**

---

What is trust?

Video url: <https://www.youtube.com/watch?v=90u3b5WahEk>



- *"A state involving confident positive expectations about another's motives with respect to oneself in situations entailing risk".*
- The definition highlights three characteristics of trust:
  1. Trust relationships involves two parties: *trustor* & *trustee*.
  2. Trust involves uncertainty and risk.
  3. The trustor has faith in the trustee's honesty and believes the trustee will not betray him.

[BoonHolmes1991]

- How do you assess the trustworthiness of a product in electronic / mobile business?
- How do you assess the trustworthiness of a company?
- How do you assess the trustworthiness of a webpage you visit to buy something?

**L13 – Acceptance and Success Factors in  
Mobile Business**

---

c) Distinguish the terms 'diffusion' and 'adoption'.

- ***Diffusion*** is the process by which an innovation is ***accepted by a social system, e.g. the market.***
- The ***rate of diffusion*** is the speed of the new idea spreading from one consumer to the next.
- ***Adoption*** is similar to diffusion except that it deals with the ***psychological processes*** an individual goes through, rather than an aggregate market process.

**L13 – Acceptance and Success Factors in  
Mobile Business**

---

d) Name the five categories of adopters.

# Categories of Adopters

- Adopters can be categorised in 5 different groups:
  1. Innovators
  2. Early adopters
  3. Early majority
  4. Late majority
  5. Laggards

[Rogers2003]

## ▪ ***Innovators (2,5%):***

- ***Characteristics:*** Venturesome, educated, multiple info sources, greater propensity to take risk
- ➡ Has the ability to understand and apply complex technical knowledge and can cope with a high level of uncertainty of an innovation.
- ➡ The innovator is a catalyst who brings about the use and adoption of new ideas.

## ▪ ***Early adopters (13,5%):***

- ***Characteristics:*** Social leaders, popular, educated
- ➡ Other members of the group look to these individuals for advice and knowledge about the innovation.

[Rogers2003]

- **Early majority (34,0%):**
  - **Characteristics:** Deliberate, many informal social contacts
  - ➔ Tend to adopt the innovation just prior to time the average individual adopts it (link between early adopters and later majority).
  
- **Late majority (34,0)%:**
  - **Characteristics:** Sceptical, traditional, lower socio-economic status
  - ➔ Acceptance comes after the average person accepts
  
- **Laggards (16,0%):**
  - **Characteristics:** Neighbours and friends are main info sources, fear of debt
  - ➔ Laggards are those who are consistent or even adamant in resistance to change.

[Rogers2003]

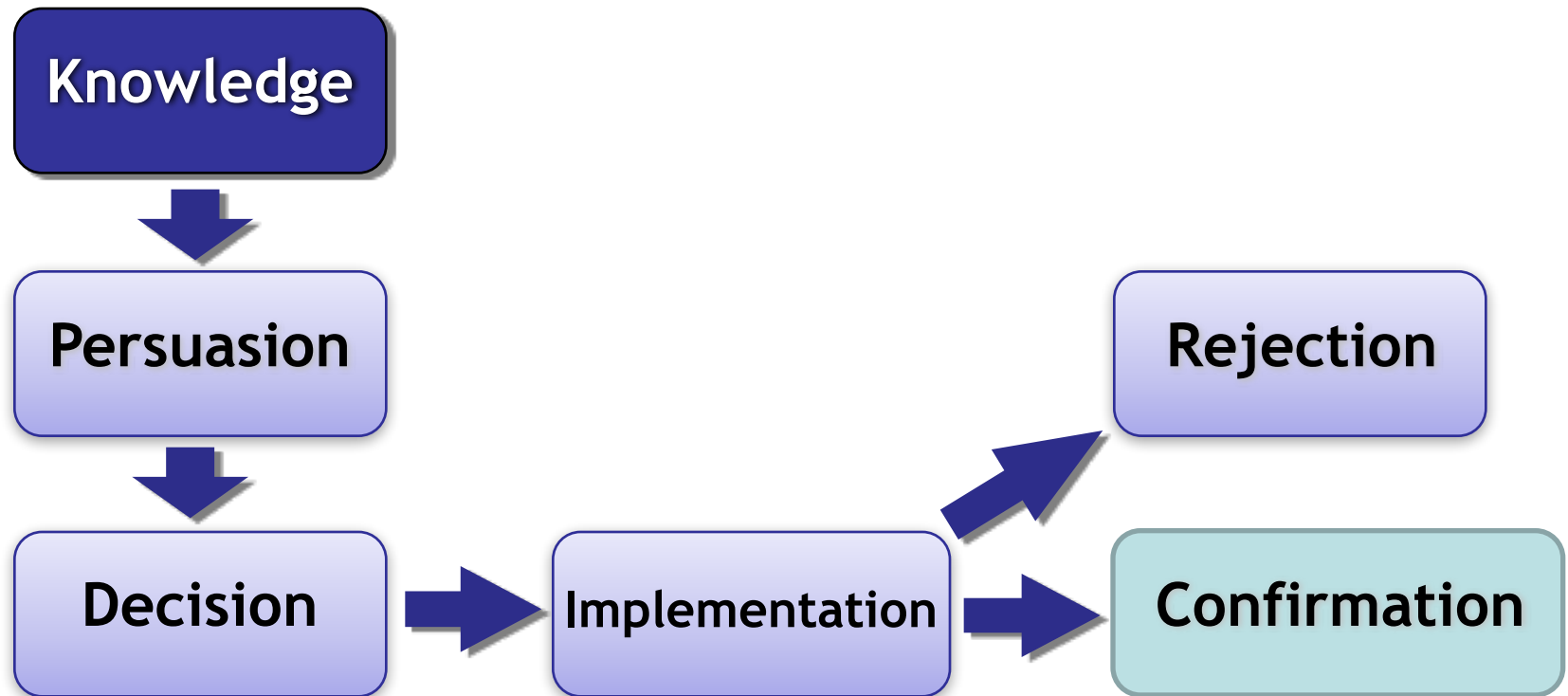


**L13 – Acceptance and Success Factors in  
Mobile Business**

---

e) Describe the five stage model for the diffusion of innovation.

# Diffusion of Innovations Stages of Adoption



[Rogers2003]

# Five Stage Model for the Diffusion of Innovation

- The adoption of an innovation includes the following stages:
  - 1. Knowledge:** Learning about the existence and function of the innovation
  - 2. Persuasion:** Becoming convinced of the value of the innovation
  - 3. Decision:** Committing to the adoption of the innovation
  - 4. Implementation:** Putting it to use
  - 5. Confirmation:** The ultimate acceptance (or rejection) of the innovation

[Rogers2003]

- This set of slides is based upon the following Economic Basics lectures:
  - **Lecture 11:** Market Overview of Mobile OSs and Security Aspects
  - **Lecture 12:** Mobile Trusted Devices
  - **Lecture 13:** Acceptance and Success Factors in Mobile Business

- Please send your questions via mail ([mob1@m-chair.de](mailto:mob1@m-chair.de)) no later than Thursday, 6<sup>th</sup> Feb 2020 at 16:00.
- The Q&A session will follow next week, Tuesday, 11<sup>th</sup> Feb 2020 at 14:00.



Thank you!

Contact: [mob1@m-chair.de](mailto:mob1@m-chair.de)