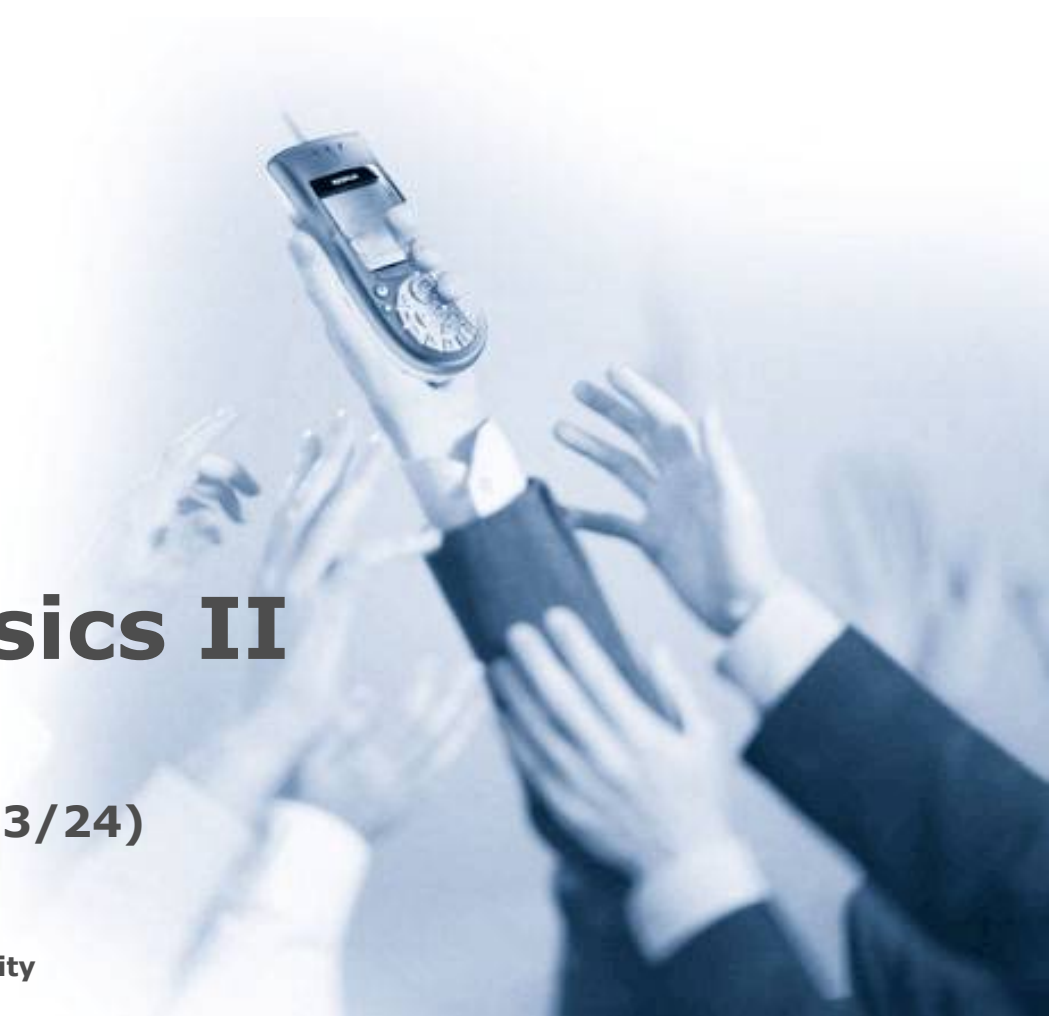*Exercise 4*

Economics Basics II

Mobile Business I (WS 20223/24)

Dr. Ahad Niknia,

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 3rd-party software cannot be easily installed and executed

- Later, more and more platforms switched to more open and interoperable operating systems (e.g. Android).

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

- Many mobile OSs allow the execution of 3rd-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)?

- 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.
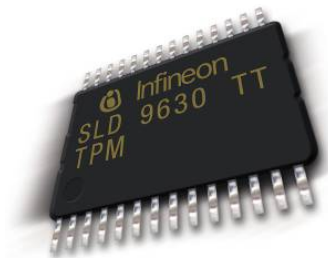
b) How mobile device misuse can be prevented?

- 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

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]

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

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?

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.

d) Name the five 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.
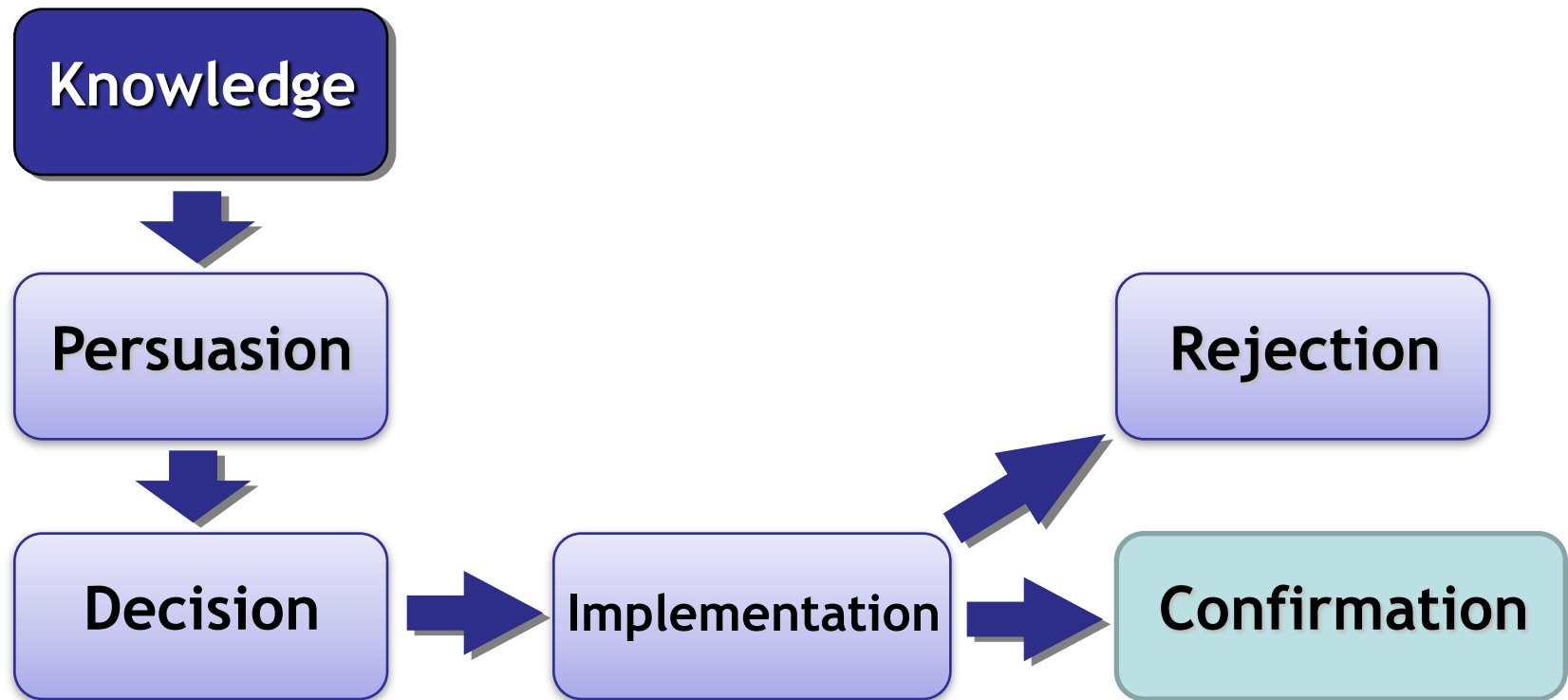
[Rogers2003]

- **_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]

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

Knowledge → **Persuasion** → **Decision** → **Implementation** → **Rejection** / **Confirmation**

[Rogers2003]

- 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

Thank you!

Contact: mob1@m-chair.de