

Exercise 4

Economics Basics II

Mobile Business I (WS 2025/26)

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- 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).

L11 – Market Overview of Mobile OSs and Security Aspects

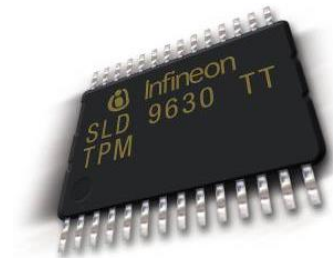
- b) What are the potential threats for users when it comes to using mobile apps?

- Many mobile OSs allow the execution of 3rd-party software:
 - 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, obtaining personal information)
 - Loss of money (e.g. malware draining bank accounts)
 - Shorter battery runtime (more processing/resource usage)

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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 can mobile device misuse be prevented?

- Most mobile devices provide device access protection via PIN, password, 2FA input.
- Many mobile users don't use this functionality appropriately (inconvenience).
- Mobile devices could provide protection mechanisms such as
 - strong user authentication,
 - strong user authorisation,
 - data access management,
 - data encryption.



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- 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?***
 - Understanding and building customer trust
 - Academic technology acceptance factors: ease of use, usefulness, network effects, service quality ..
 - 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.

- Trust:

“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.

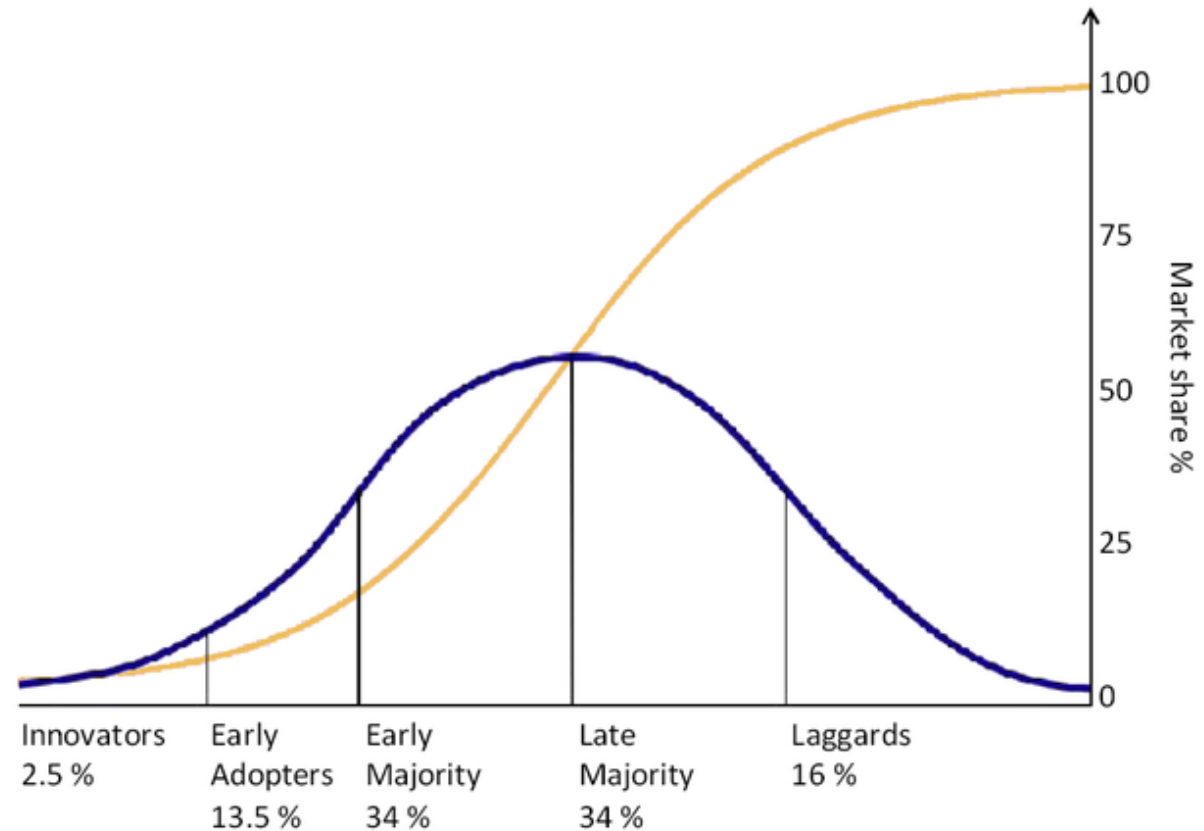
[BoonHolmes1991]

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]

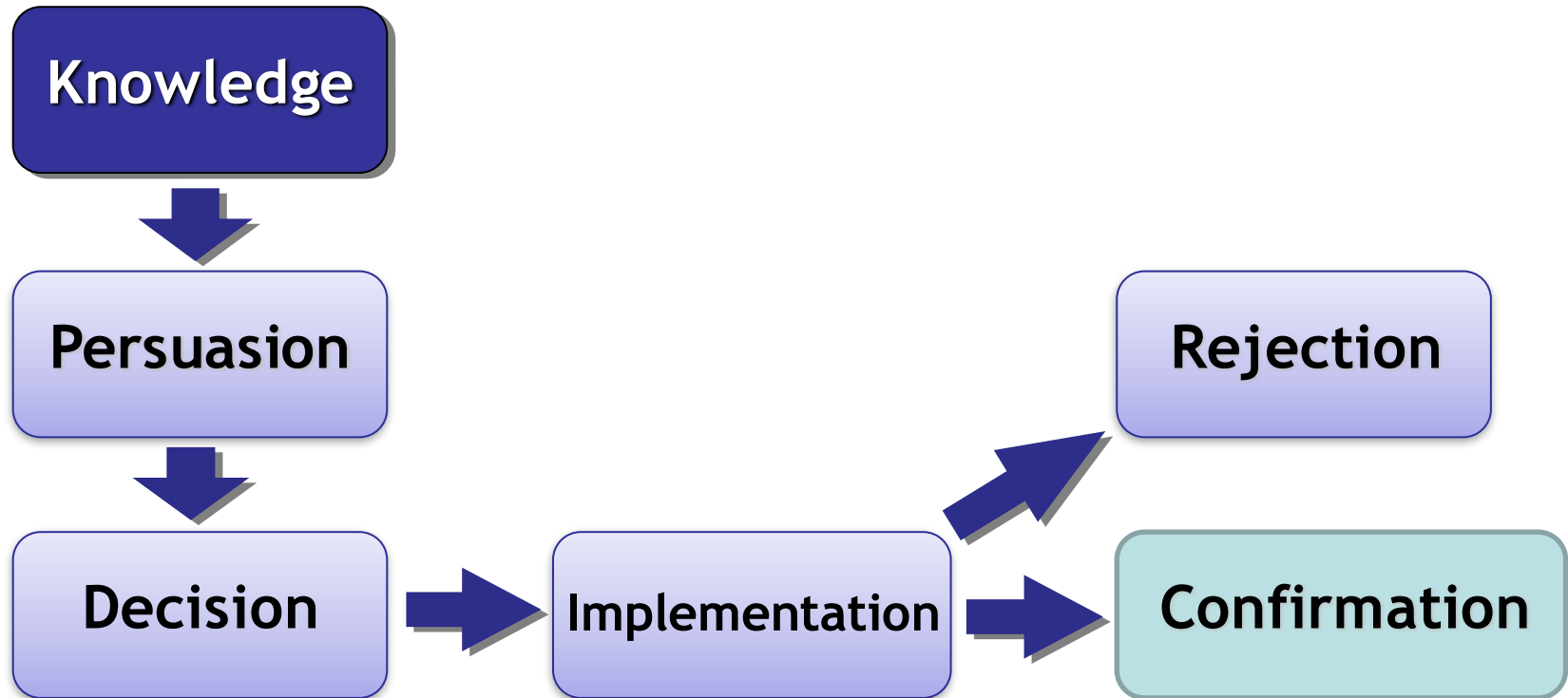
- **Early majority (34,0%):**
 - **Characteristics:** Deliberate, many informal social contacts
 - ➔ Tend to adopt the innovation just prior to time the average individual adopts it (link between early adopters and later majority).

- **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.



[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

Models

- Smith, H. J., Dinev, T., & Xu, H. (2011). Information privacy research: an interdisciplinary review. *MIS quarterly*, 989-1015.
- Venkatesh, Viswanath; Morris, Michael G.; Davis, Gordon B.; Davis, Fred D. (2003). "User Acceptance of Information Technology: Toward a Unified View". *MIS Quarterly*. **27** (3): 425-478. [doi:10.2307/30036540](https://doi.org/10.2307/30036540). [JSTOR 30036540](https://www.jstor.org/stable/30036540). [S2CID 14435677](https://www.s2cid.com/14435677).

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