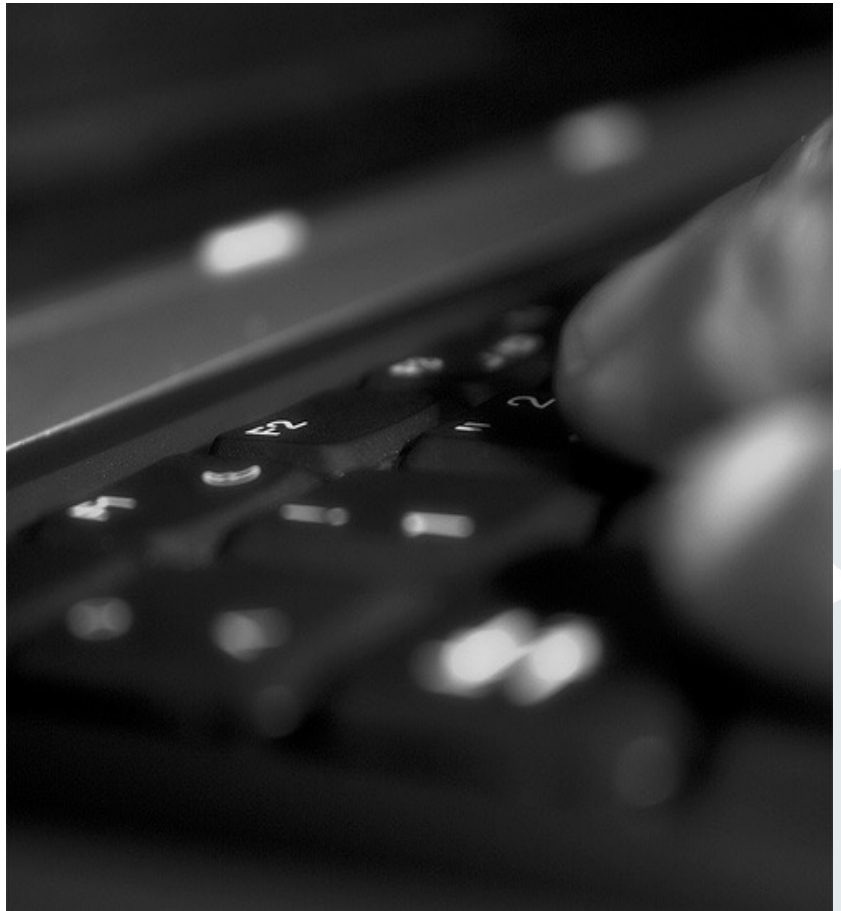


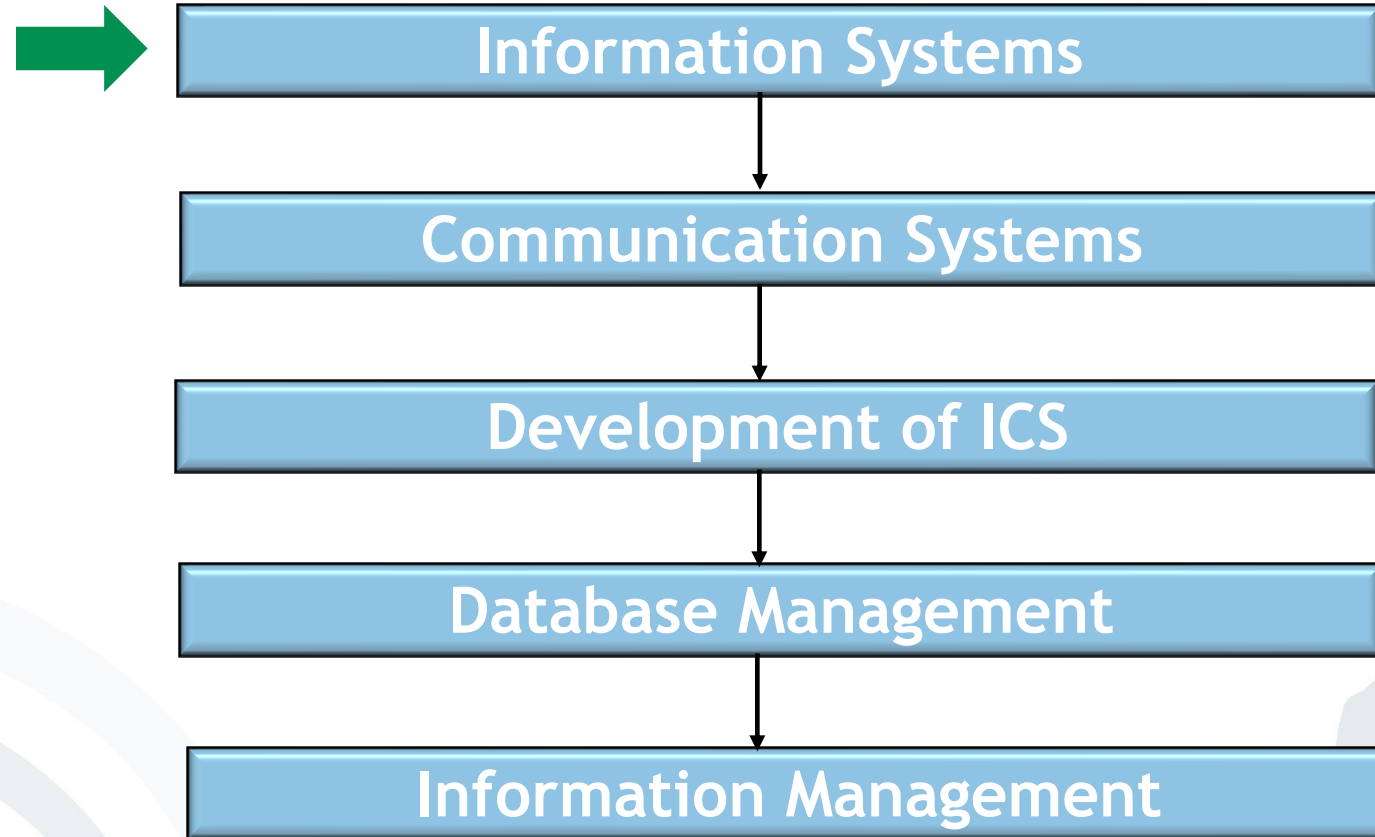
Mentorium  
Business Informatics 2 (PWIN)

Information Systems II, III  
WS 2023

Frédéric Tronnier  
[www.m-chair.de](http://www.m-chair.de)



Jenser (Flickr.com)



# Components of the Course

## Information Systems

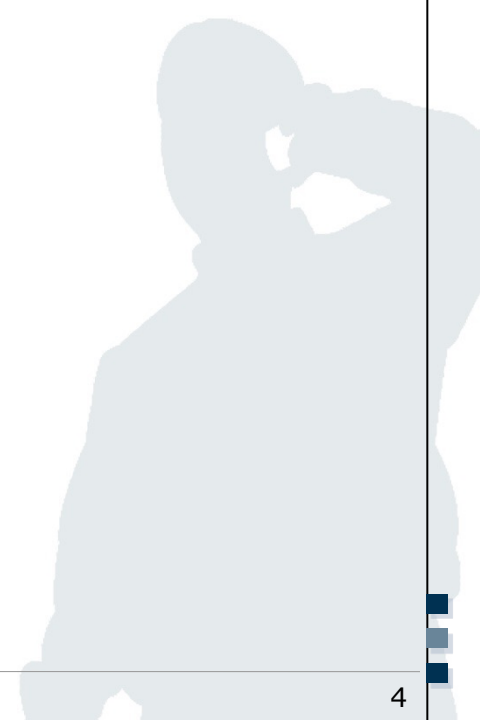
Purpose of and Research on Information Systems ✓

Enterprise Modelling ✓

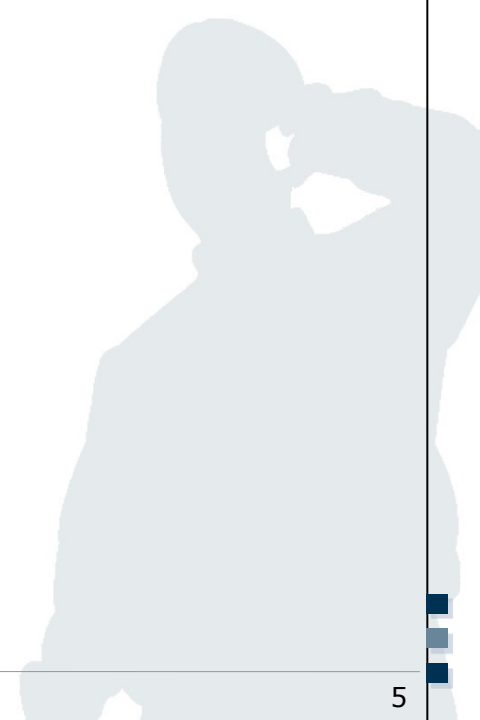
Architectures of Information Systems

Mobile Information Systems

- IS Architecture Concepts
- Mobile Infrastructure and Ecosystem
- Mobile Information Systems



- Please name three main characteristics of cloud computing.



- Main Characteristics
  - Self-Service (via Web or API Access)
  - Elastic Resources (Resources on Demand)
  - Pay-as-you-Go (CAPEX to OPEX)



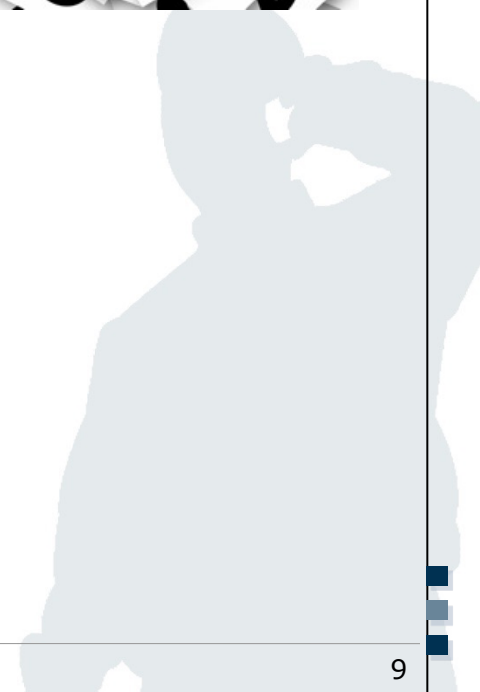
- Name and describe three different cloud deployment types.
- What are issues to consider when working with cloud computing?

- Name and describe three (four) different cloud deployment types.
  1. **Public Cloud:**  
owned and operated by a third-party cloud service provider  
resources are shared among multiple users/ organizations  
cost-effective, scalable solutions
  2. **Private Cloud:**  
owned and operated by a single organization  
dedicated resources and greater control over security and compliance  
Useful for sensitive data, regulatory compliance or customization
  3. **Hybrid Cloud:**  
combines both public and private clouds  
Allows data to move between both options
  4. **Community Cloud:**  
Resources are shared between several organizations, communities, individuals. Hosting and managing can be done within the group or by a third party.

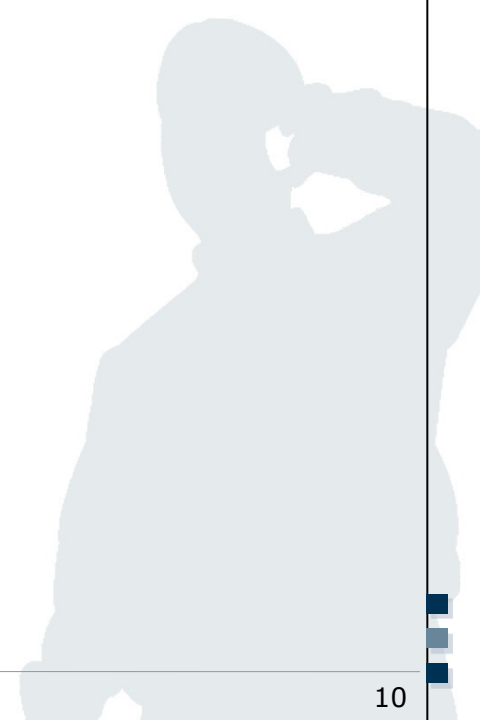


## Issues to consider/address:

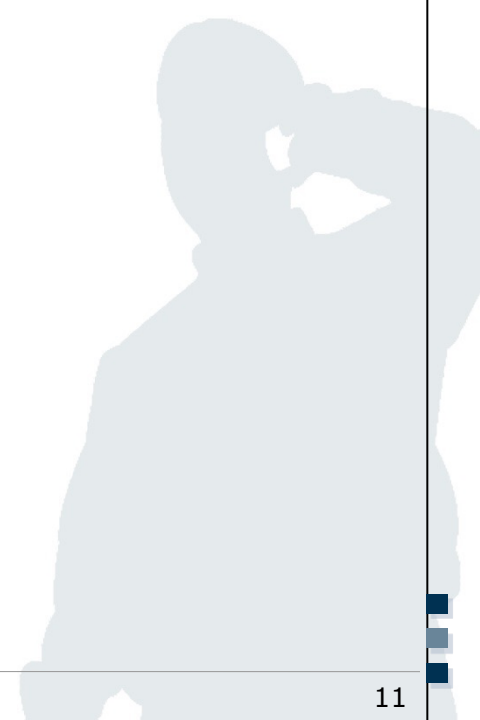
- Data Privacy
- Vendor Lock-in
- Cost Transparency
- Required IT Skills
- Required network connection and bandwidth
- Service Level Agreements & Monitoring
- NSA & Co.
- ...



- IS Architecture Concepts
- Mobile Infrastructure and Ecosystem
- Mobile Information Systems



- What is an Operating System? Please name its two objectives.



## What is a (mobile) operating system (OS)?

- An OS is a program that serves as a mediator between the user and the hardware.
- It enables the users to execute programs
- *Other properties:* Multi-user, multi-thread, high availability, real-time, ...

- *Primary goal of an OS:* Easy usage of the actual hardware
- *Secondary goal of an OS:* Efficient usage of the hardware

What is a the difference between mobile operating systems and “traditional” computer OS?

What is the most popular OS?



[Silberschatz, Galvin 1999]

What is the difference between mobile operating systems and “traditional” computer OS?

- Additional useful features for mobile OS: wireless lan, SIM, dedicated App stores
- Lines are blurred nowadays.

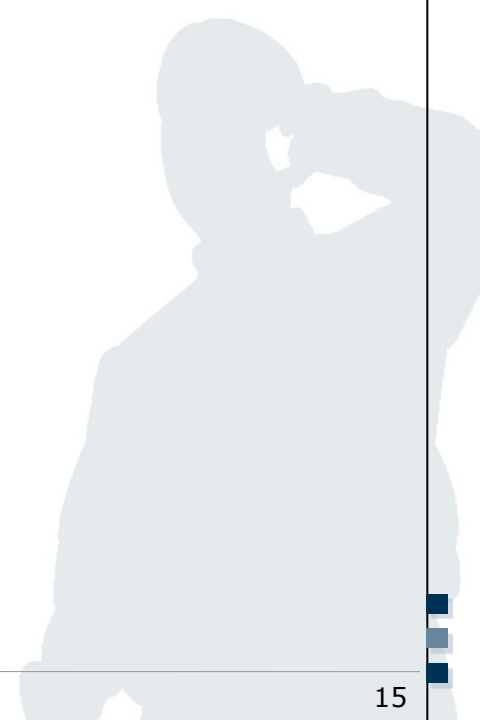
What is the most popular OS?

- Android (mobile)



[Silberschatz, Galvin 1999]

- In some devices the next generation of SIM cards, eSIMS, are already implemented. Why do providers not approve this enhanced technology?



- NextGen SIM cards: eSIM Cards
  - Pre-installed in phone and (maybe) provider independent
  - Makes switching SIMs potentially easier for the customer, which goes against the carrier.



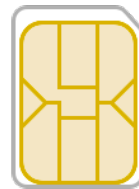
**2FF - Mini SIM**

Height: 25mm  
Width: 15mm  
Thickness: 0.76mm



**3FF - Micro SIM**

Height: 15mm  
Width: 12mm  
Thickness: 0.76mm



**4FF - Nano SIM**

Height: 12.3mm  
Width: 8.8mm  
Thickness: 0.67mm



**MFF2 - M2M Form Factor (eSIM)**

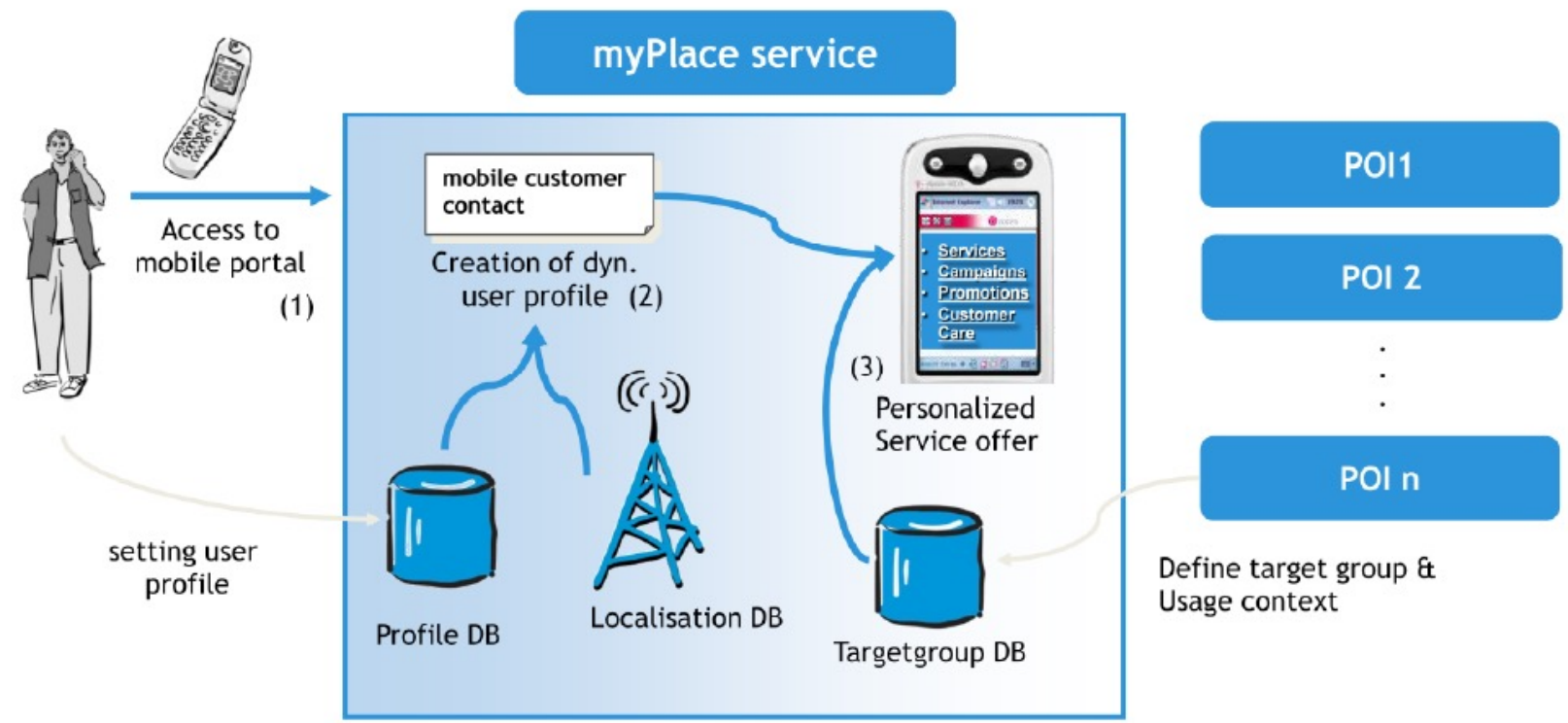
Height: 6.0mm  
Width: 5.0mm  
Thickness: 0.67mm



## Native apps vs. web apps

- What are the differences between native mobile apps and web mobile apps in terms of updates, platform specificity, revenue model, distribution and offline support?
- Do you recommend myPlace to implement a native app or a web app? Why?

# Native apps vs. web apps



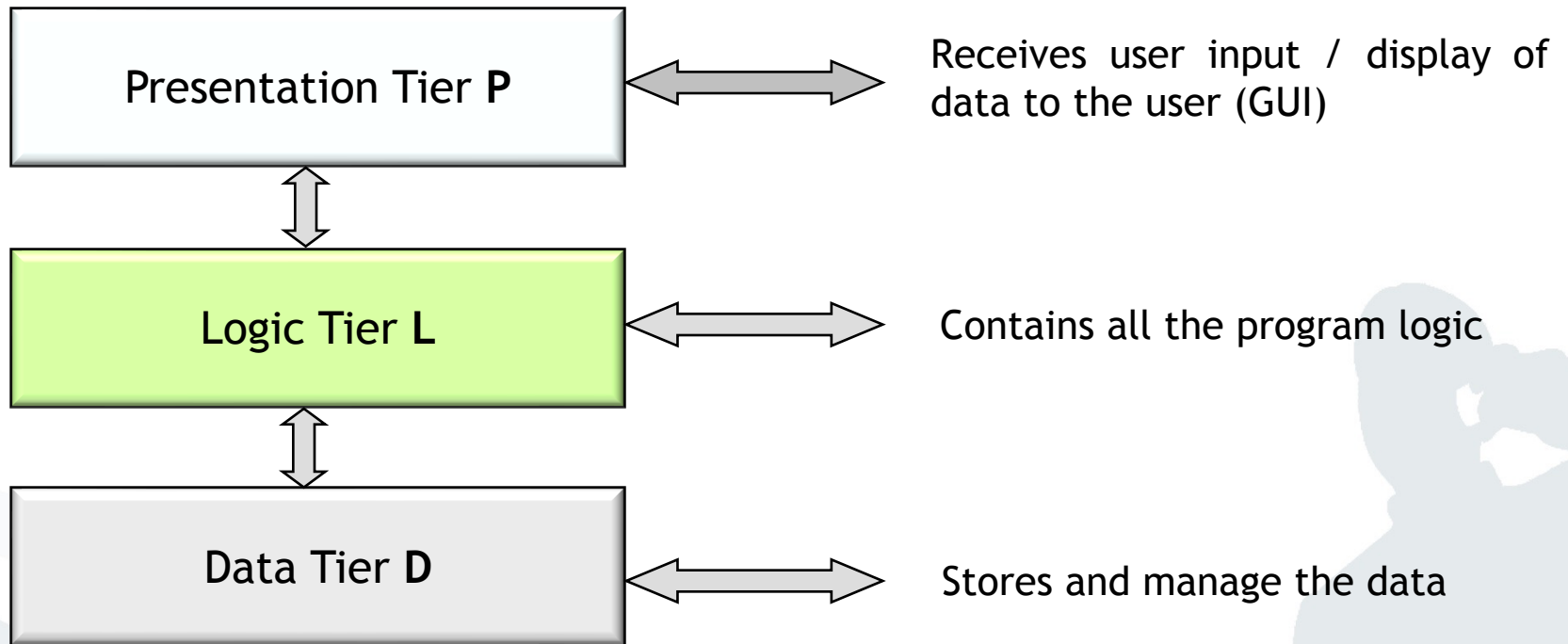
The figure outlines the basic usage process for the myPlace service

# Native apps vs. web apps

Mobile app (“native App”)	Mobile web app
Supports offline use	Needs constant internet connectivity (network coverage)
Can be found easily in app store(s)	Distribution via URL, e.g. QR-codes
Business model: Sold in app store(s)	Difficult to implement payment and authentication system
Can make use of all OS and device functions	Cannot access OS core functions (e.g. 3D graphic processing or access to locally protected storage)
Needs to be platform-specific (native code)	Using web browser of the device, hence manufacturer-independent multi-platform support possible; also porting to other devices/platforms is less expensive
Based on Objective-C, C#.Net, Java	Based on HTML5, CSS, Javascript
Updates/versioning through app stores	Easy updates as they are done on the server, not on every client device

- How are the presentation, logic and data tier distributed among the user and provider in
  - Mobile web apps
  - Mobile native apps?

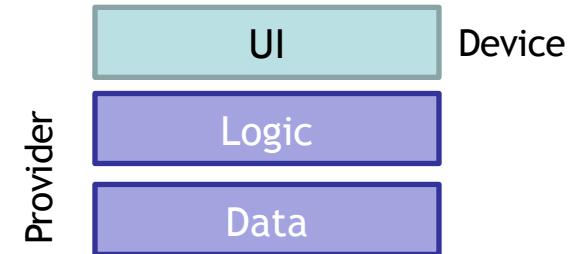
# Three-Tier Concept in Apps



# Three-Tier Concept in Apps

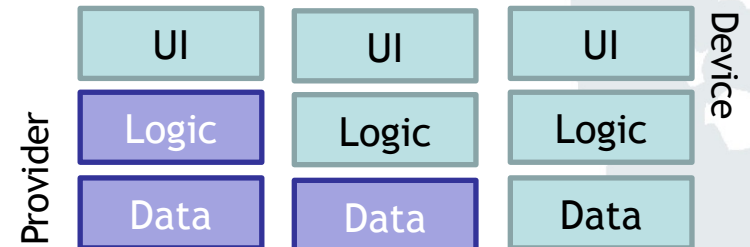
## Mobile Web App

- App not installed on the device - UI runs in web browser
- Data & Logic of App runs at Provider



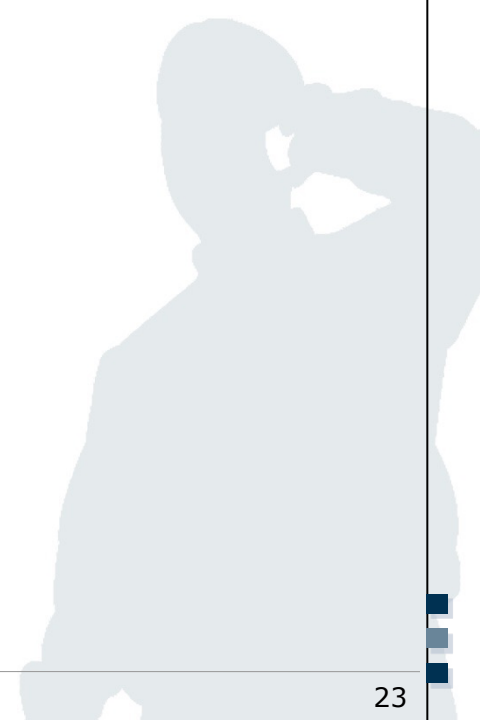
## Mobile App (“Native App”)

- App is downloaded and installed
- Data & Logic on device (and/or in the cloud)



# Native apps vs. web apps

- What are typical relationships between classic websites and apps? How is it for myPlace?



# Native apps vs. web apps

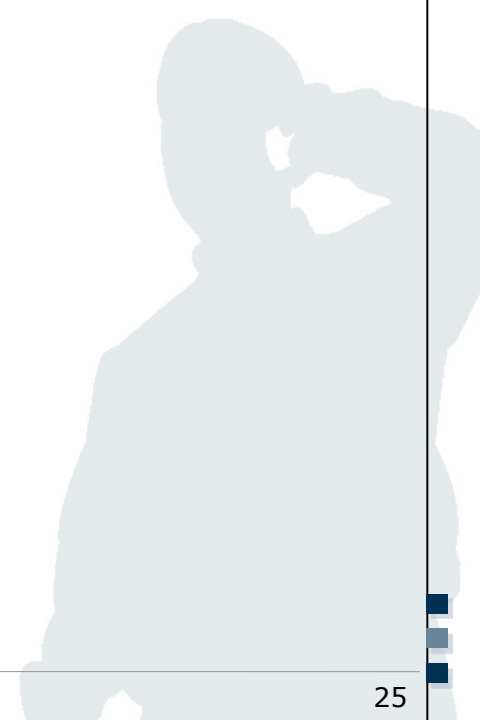
Over time

- Simple Copies of classic Websites as App
- Apps extending current website or offline offerings
- Genuine Mobile Apps, which cannot live on a PC or Mac
- Native only

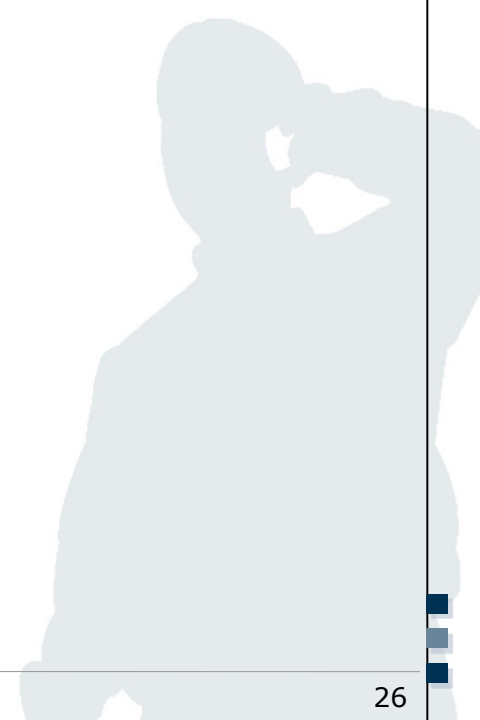




- IS Architecture Concepts
- Mobile Infrastructure and Ecosystem
- Mobile Information Systems

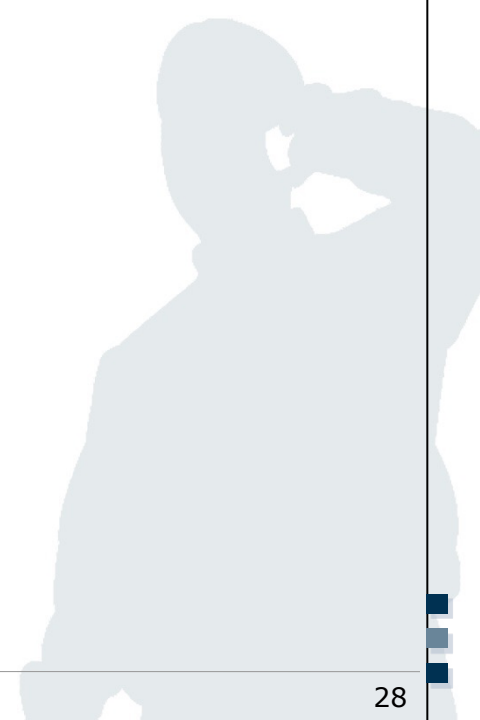


- Please explain the following characteristics of mobile data communications and why they do or do not matter for myPlace:
  - Time and Location Independence
  - Location Awareness
  - Personal Nature
  - Always On
  - Limited I/O Capabilities

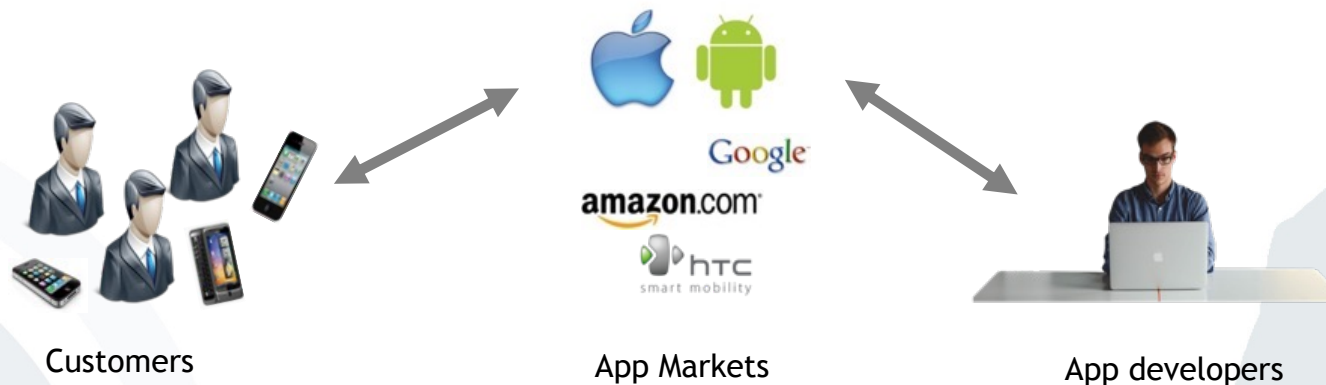


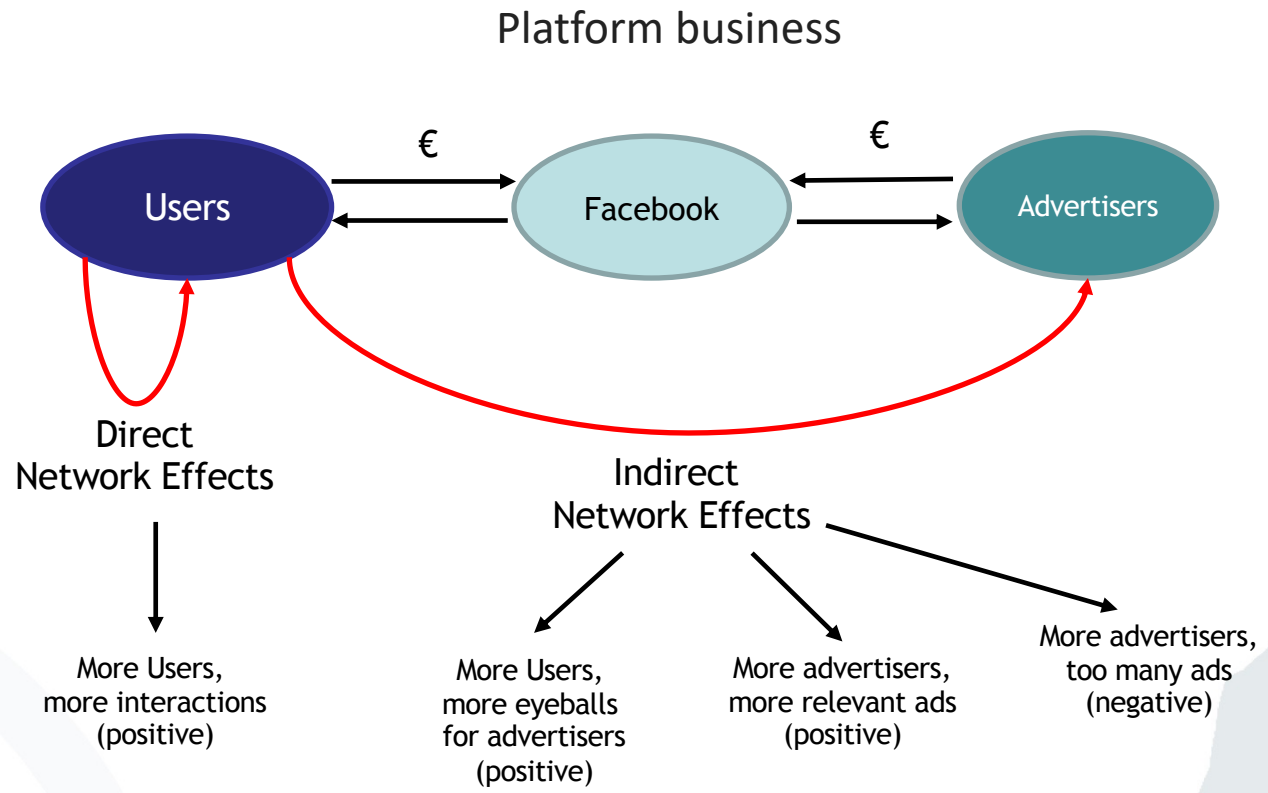
- Please explain the following characteristics of mobile data communications and why they do or do not matter for myPlace:
  - Time and Location Independence → crucial for business model
  - Location Awareness → crucial for business model
  - Personal Nature → personalization through inferences. Chance of (perceived) privacy violation.
  - Always On → App needs to be able to run in the background
  - Limited I/O Capabilities → to be incorporated in App design

- Use the example of app marketplaces to explain platform markets and the underlying principle they build on.

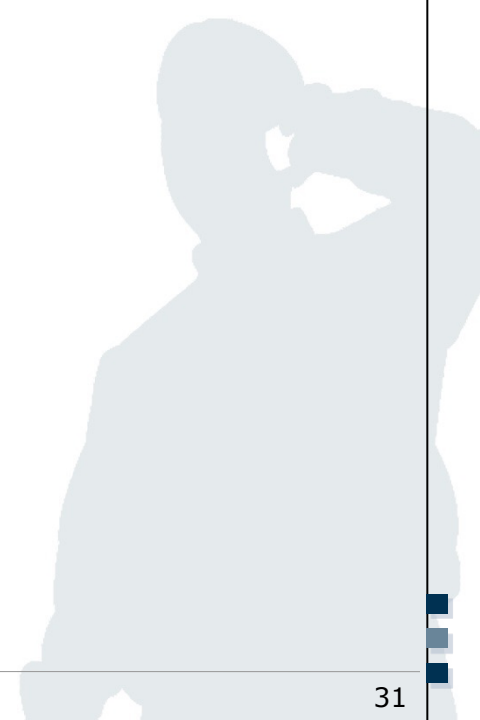


- Mobile App distribution through **App Marketplaces** (“App Stores”)
- App Markets are two-sided markets - a platform where developers publish their apps and customers/users can buy/download them
- Payment, hosting, maintenance and marketing is conducted by the App Market provider





- Please describe the difficulty in building platform markets and possible solutions.

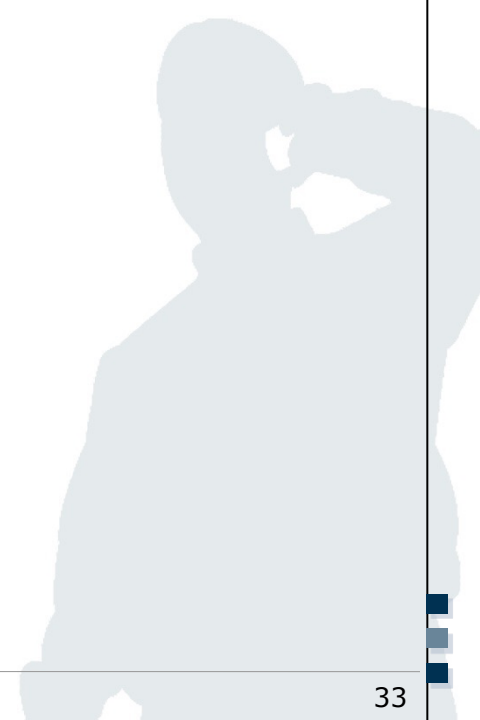


- Chicken & Egg problem
  - Critical mass of participants on one market needed in order to attract participants on other market
  - Chicken & Egg problem
- Ways to address the Chicken & Egg problem
  - Incentivize one side
  - Provide sufficient value to get one side already on-board
  - Make consumers also producers (e.g. TikTok)
  - Promotion
  - Strategic Partners
  - ...



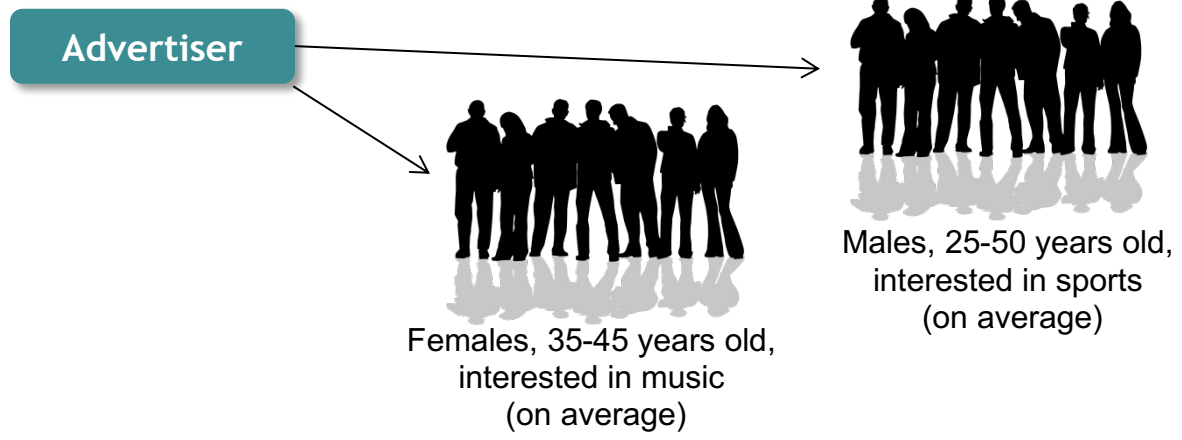


- What is contextual targeting? Please give an example.
- How is it related to myPlace?



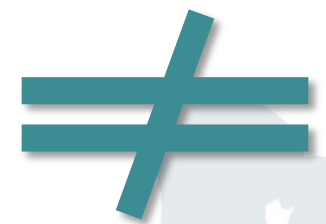
# Traditional vs. Context-Sensitive Targeting

## Traditional targeting of mobile marketing campaigns

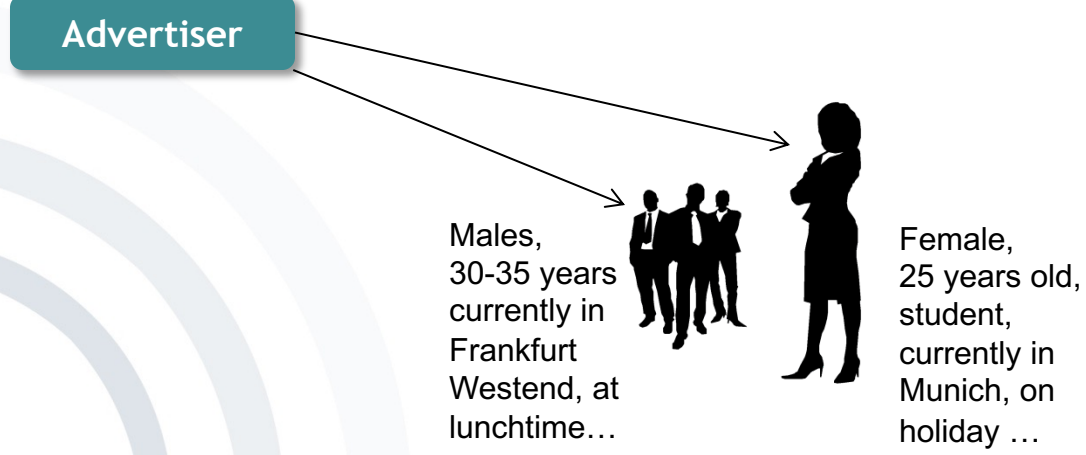


### Traditional Information

- Implicit information about preferences of mobile users
- Typically acquired without mobile user's knowledge



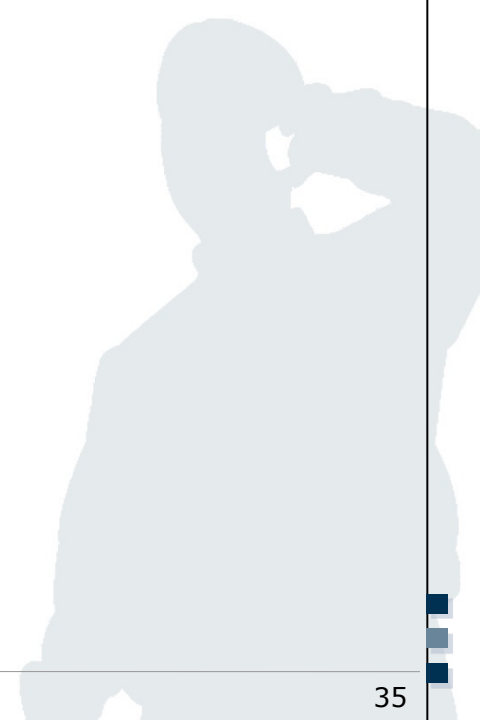
## Context-sensitive targeting of mobile marketing campaigns



### Context Information

- Explicit information about the usage situation of mobile users
- To be actively disclosed by mobile users

- Please discuss the advantages and disadvantages of contextual targeting.



- Please discuss the advantages and disadvantages of contextual targeting.

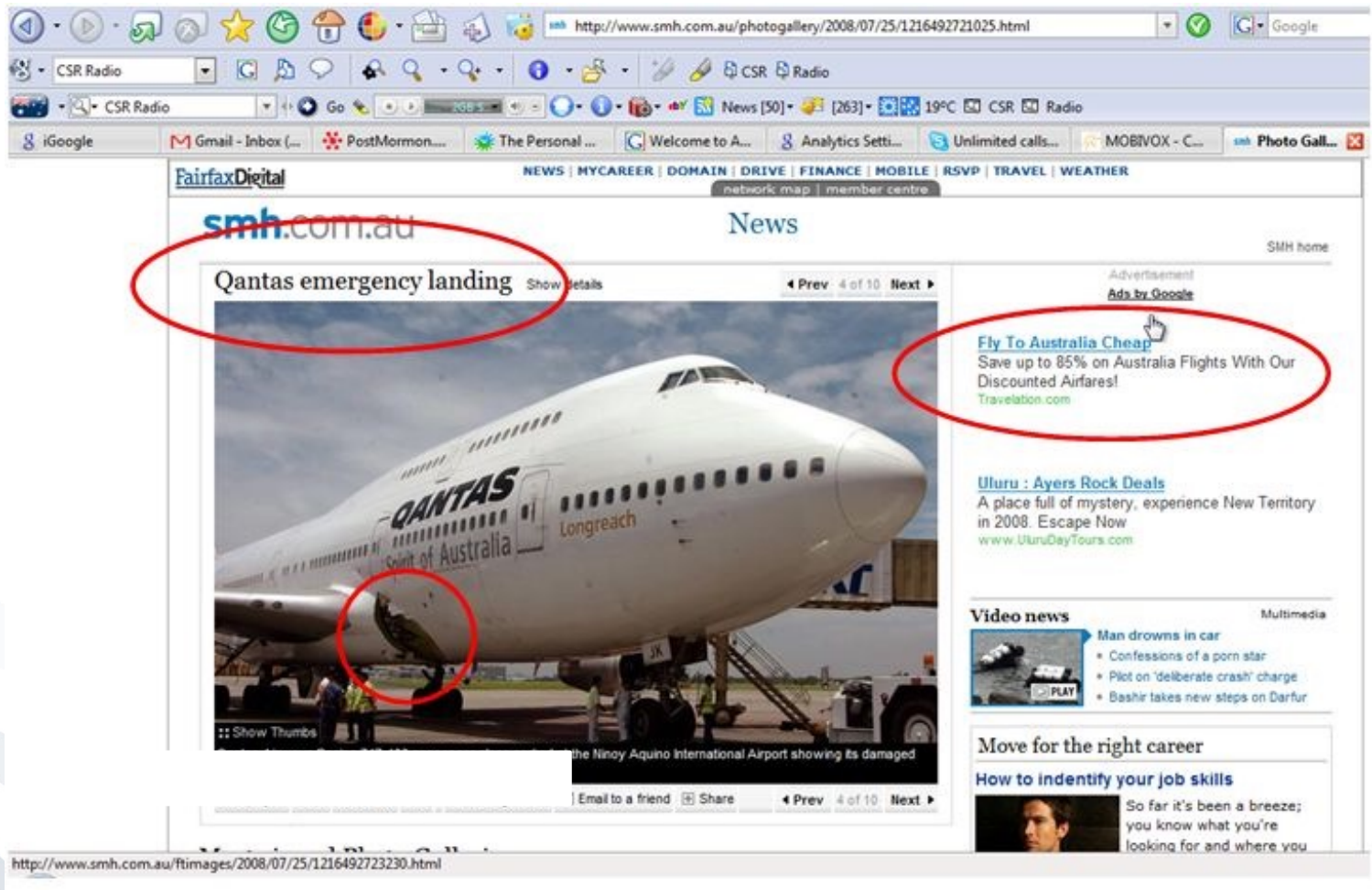
## Pros:

- More context means higher efficiency, fine grained advertising (right person, time, place, state of mind)
- Optimal use of resources
- Non-targeted individuals are not being bothered

## Cons:

- Sometimes viewed as obtrusive
- Increased fixed world-view and encourages similar behaviour/purchases
- Wrongfully derived context destroys ad effectiveness

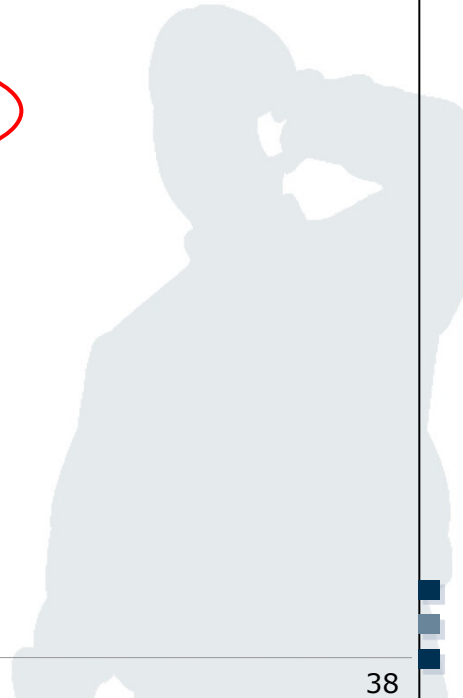
## Targeted Ads gone wrong



Source: http://propr.ca/wp-content/uploads/2009/01/qantas-090120.jpg

# Targeted Ads gone wrong (2)

The screenshot shows a Yahoo! News page. The main article title is "Body parts delivered to Michigan home" (circled in red). The article text describes a delivery of human body parts to a home in Cascade Township, Michigan. A targeted advertisement for UPS is displayed, with the text "It's UPS early morning delivery." (circled in red) and "« Rollover for video." The ad also features the UPS logo. The source is cited as Yahoo.com.



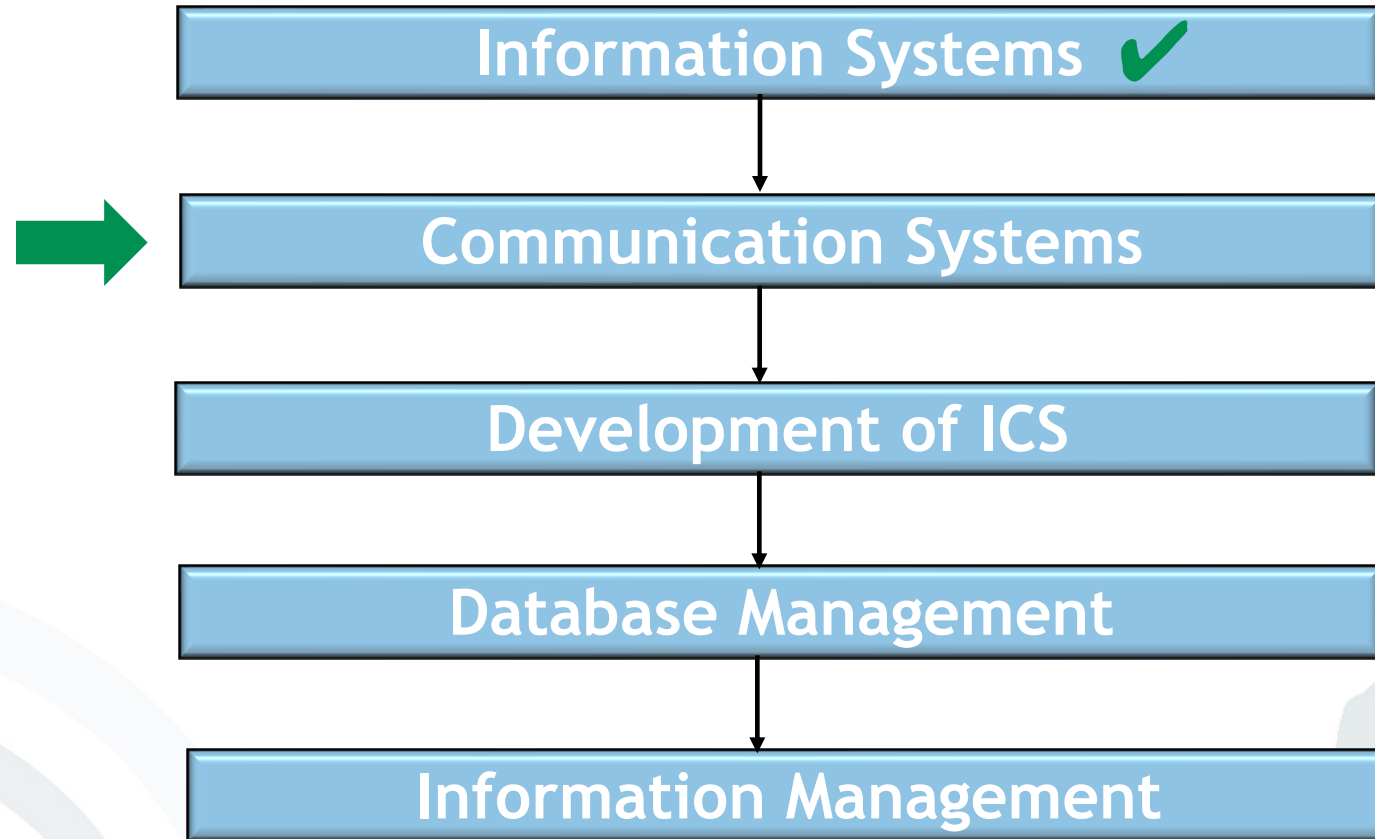
## Information Systems

Purpose of and Research on Information Systems ✓

Enterprise Modelling ✓

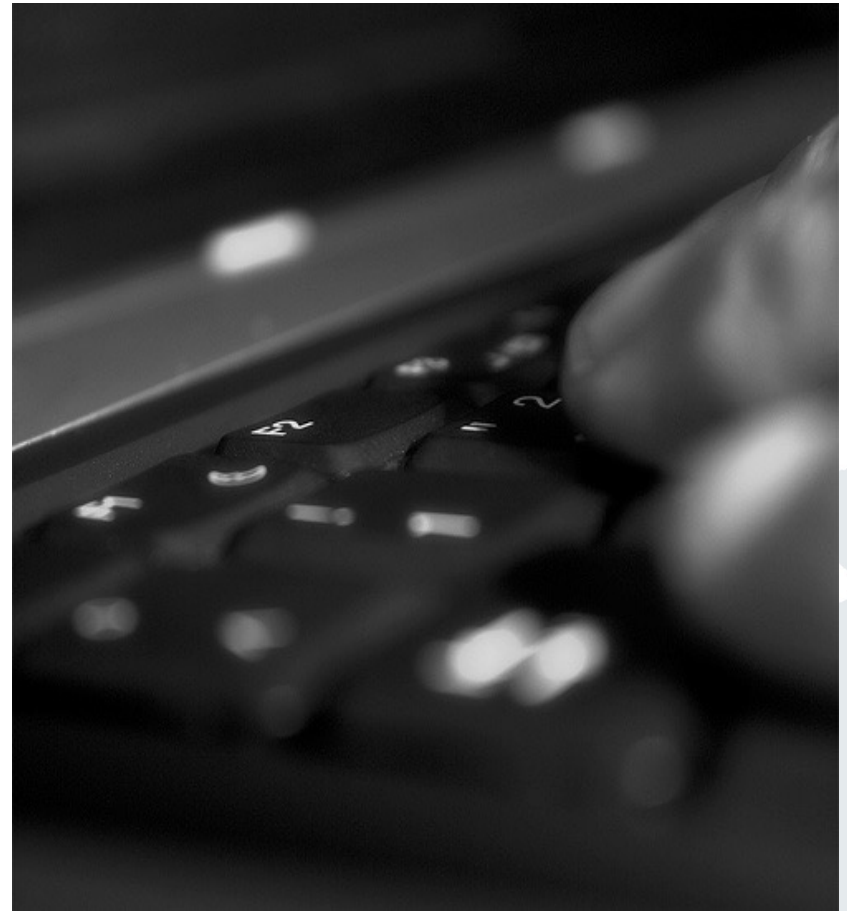
Architectures of Information Systems ✓

Mobile Information Systems ✓





Thank you!



Jenser (Flickr.com)