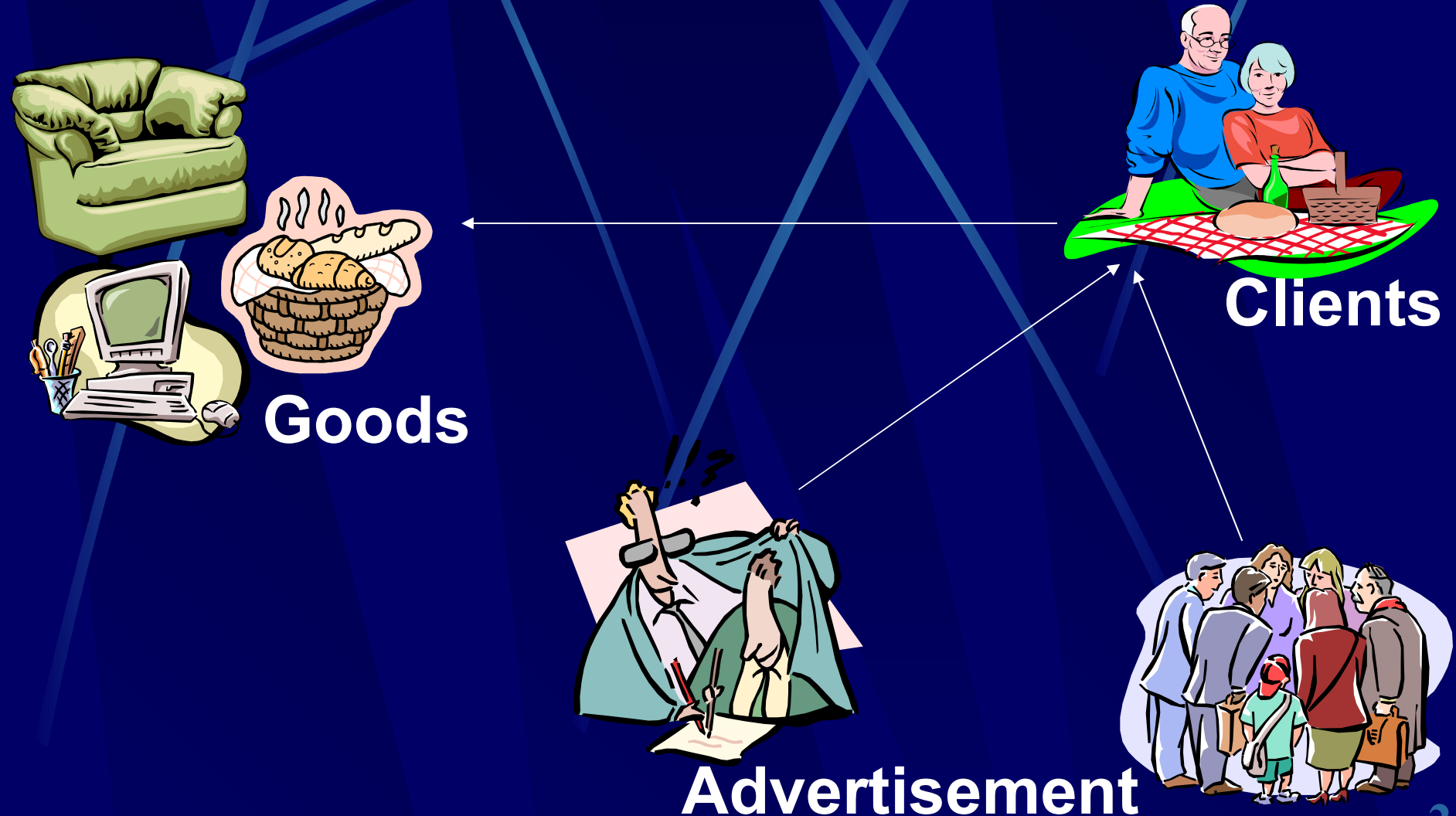# Active advertisement

## *in supermarkets using personal agents*

Jarogniew Rykowski

Department of Information Technology
The Poznan University of Economics
Mansfelda 4, 60-854 Poznan, Poland
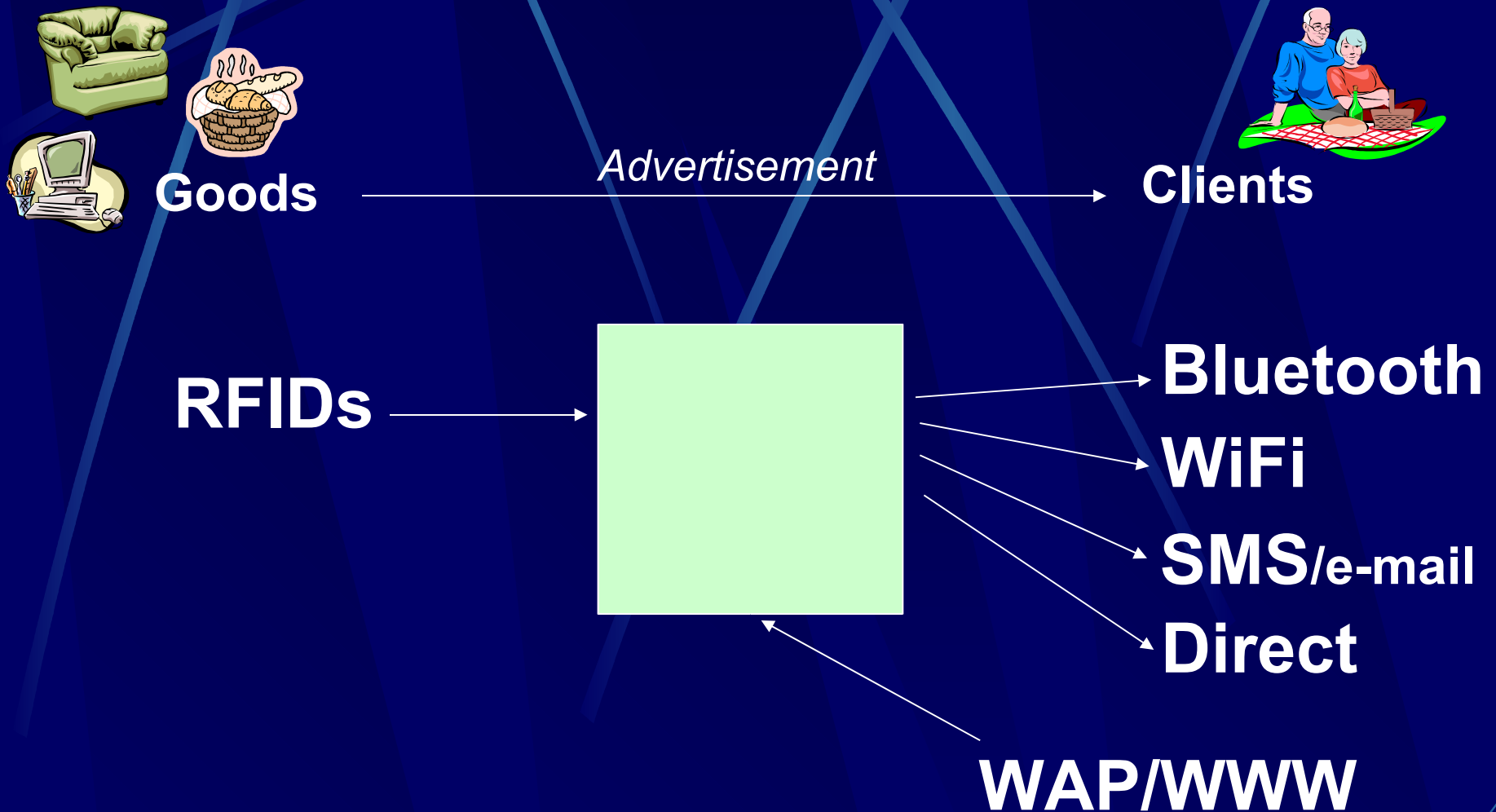*tel./fax +48 0-61 848-0549*
*e-mail: rykowski@kti.ae.poznan.pl*

# Now
## Passive off-line advertisement

Goods

Clients

Advertisement
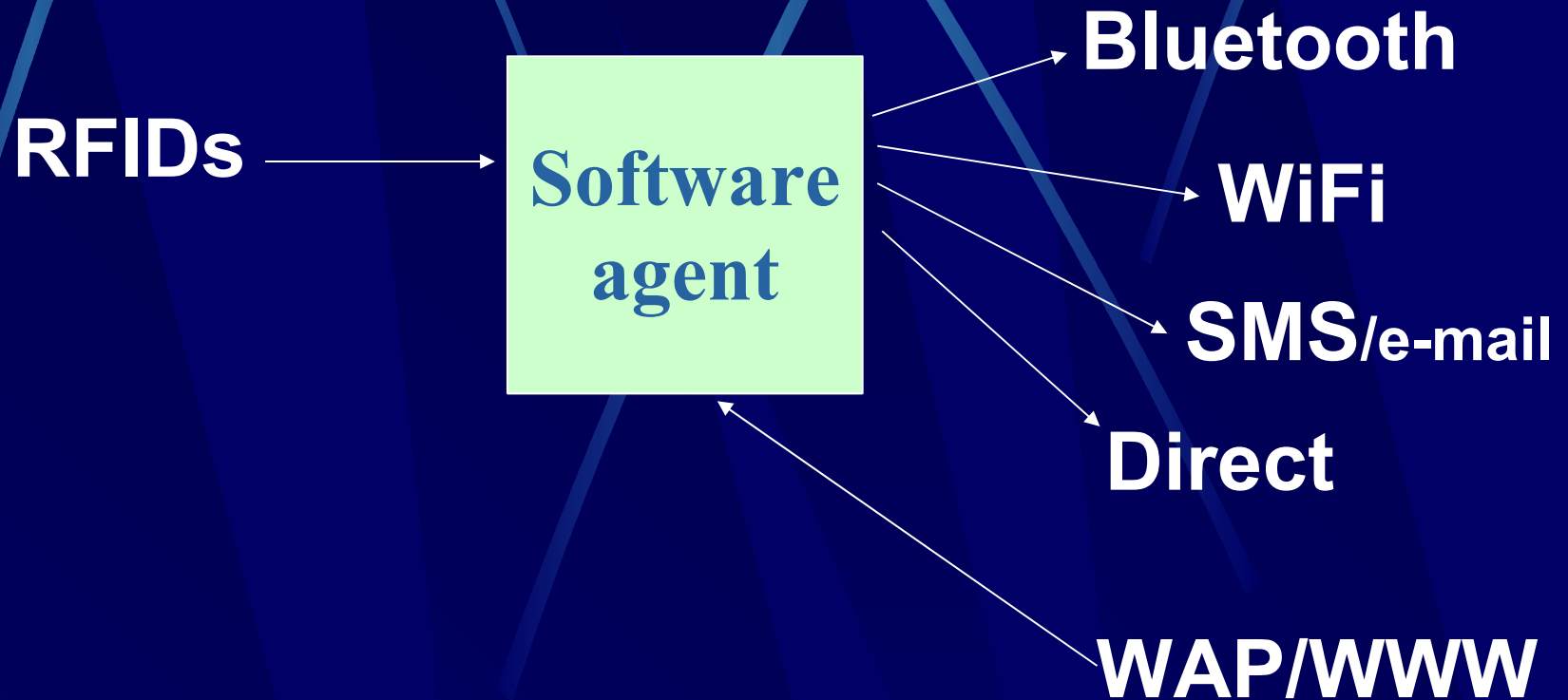
# Active on-line advertisement

**Goods**

*Advertisement* →

**Clients**

# Idea – technique

Goods     *Advertisement*    →    Clients

RFIDs →

Bluetooth

WiFi

SMS/e-mail

Direct

WAP/WWW

# Implementation

RFIDs → **Software agent**

Software agent → Bluetooth

Software agent → WiFi

Software agent → SMS/e-mail

Software agent → Direct

WAP/WWW → Software agent

5

# Implementation II



**RFIDs** → **Software agents**

**Database of RFIDs**

Software agents →
- **Bluetooth**
- **WiFi**
- **SMS**/e-mail
- **Direct**
- **WAP/WWW**

# Implementation III

RFIDs

Direct
Bluetooth
WiFi

SMS/e-mail

WAP/WWW

# Implementation IV

RFIDs

Direct

Bluetooth

WiFi

SMS
E-mail

WAP/WWW
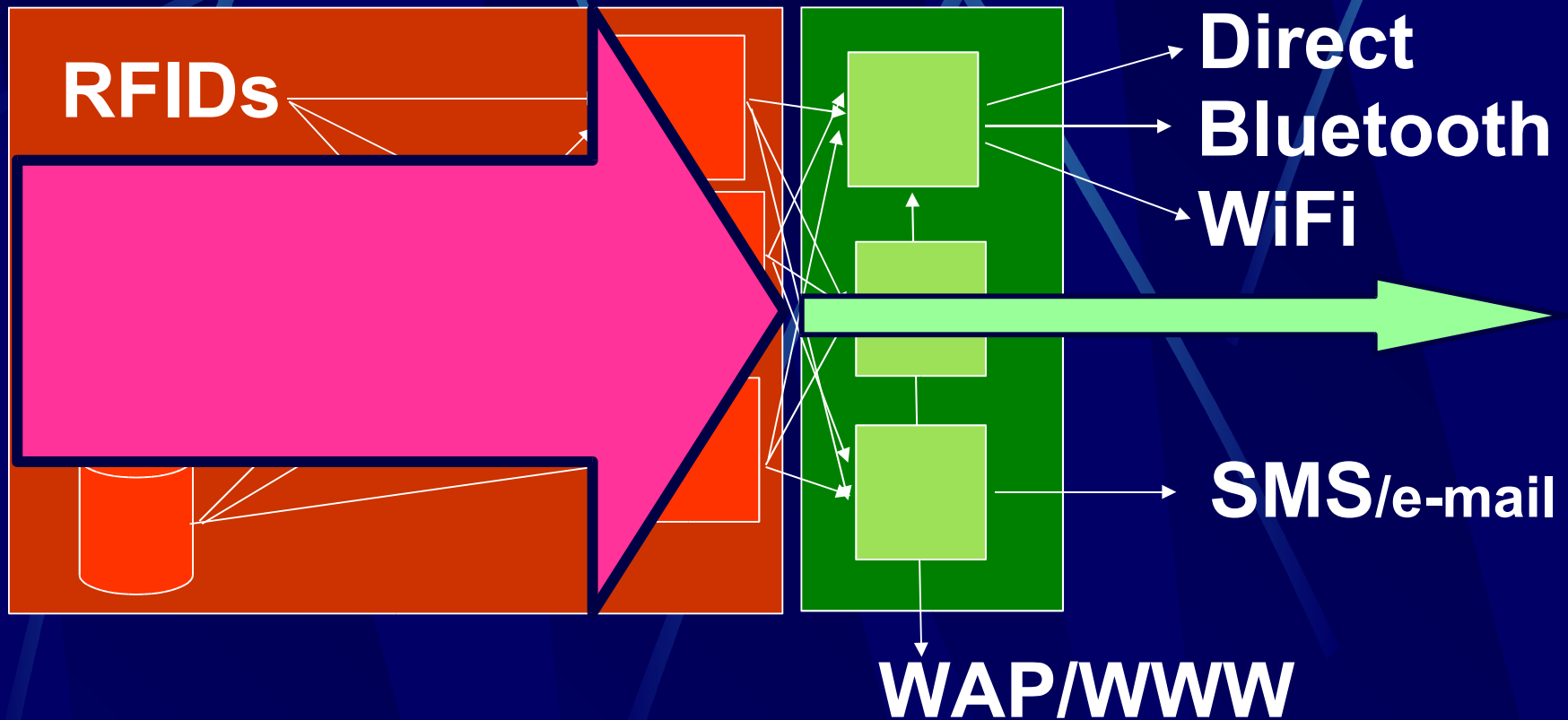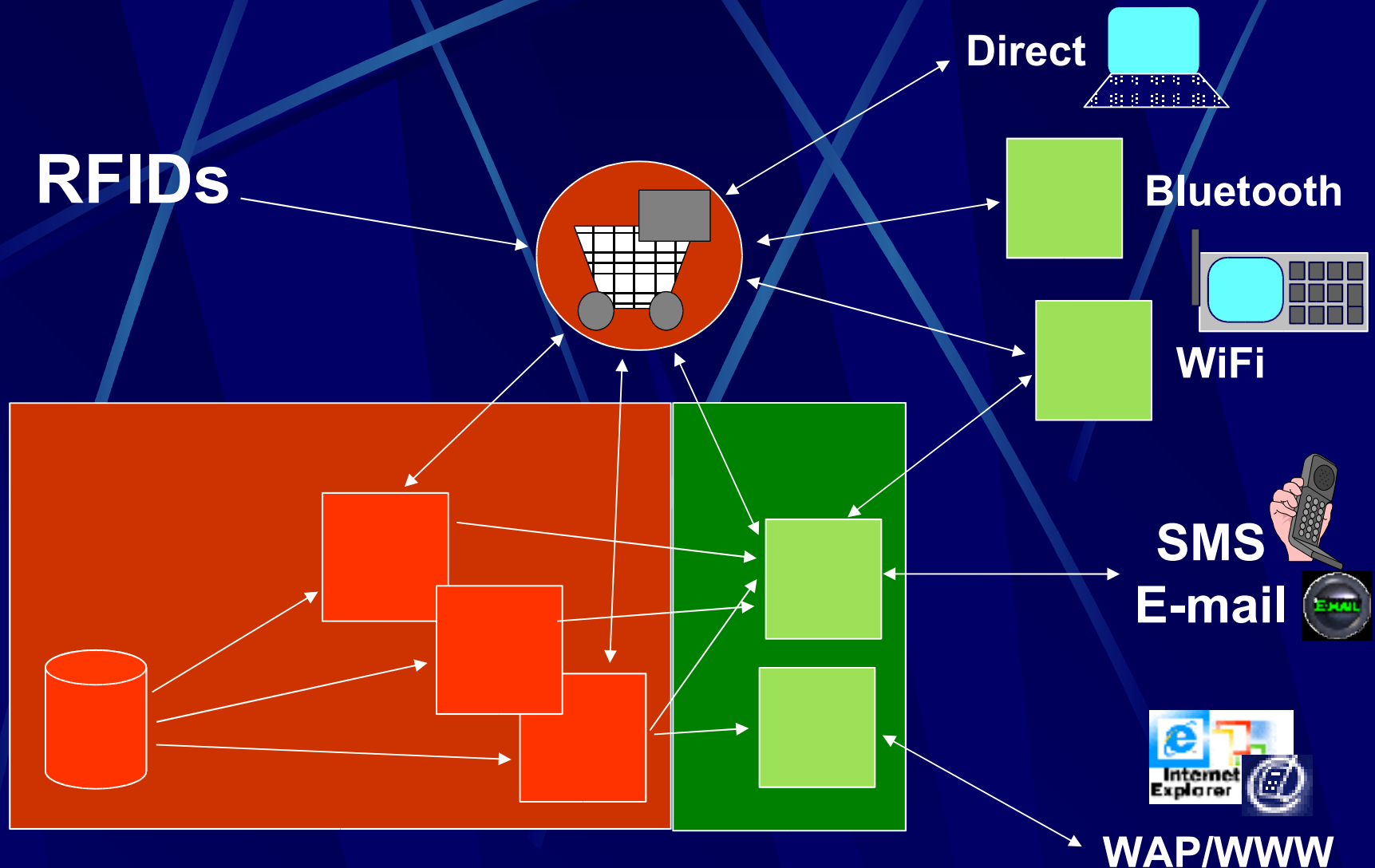
# RFID tags

- Related with locations
  - Any item of given type/class, no need for serial numbers
  - Limited network traffic
  - Reused tags: better hardware/software support – more „intelligence", power supply, ...
- Related with goods
  - Individual offer for expensive goods
  - Single-piece goods
  - Not reused, non-intelligent, non-expensive
- Trade-off between RFIDs of locations/goods
  - Supermarket choice
  - Evolution

# Software agents

- Brokers among goods/locations and clients
- Individual for clients
- Adjusted to:
  - Goods
  - Locations
  - Promotions
  - Overall situation
  - History of contacts with the same client
- Optimized from client point of view

# Marketing scenarios

- Dynamic choice
- Personal marketing firewall
- Static choice
- Hunting for promotions
- Mixed approach

# Dynamic choice

- Client's list of goods to buy
- Pop-up message while passing by
- Auto-actualization of the list
- Searching for similar products
- Guidance to certain locations

# Personal marketing firewall

- Two lists:
  - „Needed" goods
  - „Unwanted" goods
- Dynamic adaptation by answering simple questions:
  - *Would you like to see XYZ?*
  - *More info about similar goods?*
  - *Predefined „lists of interest" (WWW/WAP) - questionnaire*

# Static choice

- Static „lists of interest"
- WWW/WAP choice/management
- Waiting for promo/lowering the price
- Continuous monitoring and JIT alerting
- Asynchronous SMS messaging

# Hunting for promotions

- Static choice for a group of products
  - „a new TV set"
  - „special offer"
- SMS messaging or passing-by alerting
- Private agents:
  - Comparing offers of different supermarkets
  - Internet- or home-agents

# Additional benefits

- Tracking:
  - client positions
  - goods and relations among locations of goods and locations of clients
  - client choices
  - persons with RFIDs and mobile phones
- Statistics
- Non-standard RFIDs (temperature, best-before)
- Anti-shoplifter support

# Marketing strategy

- Passive marketing ➡ active marketing
- Goods are trying to convince clients
- Clients are able to filter incoming offers according to their individual needs
- Not a spam – the client decides what he/she is looking for at the moment
- Active goods and active clients
- Immediate reaction
- History of contacts (individualized „special offers")

# Conclusions

- Using radio-based communication:
  - RFIDs for goods
  - Personal mobile comm. for humans
- Using agents as brokers among goods/locations and humans
  - System agents owned by a supermarket
  - Private agents of the supermarket clients
  - Full anonymity, however, full history of contacts
- Flexibility:
  - User-specific requirements
    - Transparent (hardware limitations)
    - Apparent (data choice, formatting, and presentation)
  - Adaptation to new offers/goods/temporal promotions
- Small cost, no need for expensive hardware

# Thank you

Questions?