



Wireless access to video-based monitoring service

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Background

- Supervisor: Professor Heikki Hämäläinen
- Instructor: Marko Väisänen, M.Sc.
- Thesis is made in Technology Center of Radiolinja
- Thesis is made as a part of INMOVE project
- The use of multimedia and video content is growing in mobile phones
- It is not always technically or economically cost-effective to transmit a video directly to mobile phones



Background - INMOVE Project

- INMOVE = INtelligent MOBILE Video Environment
- EU project
- 2 years project (September 2002 – August 2004)
- 4 R&D organisations and 4 technology companies
- Objectives of the INMOVE project
 - video software toolkit
 - application trials and demonstrations
 - usability of applications and toolkit
- Intelligent Monitoring and Sports Viewing applications
 - service station trial in Finland

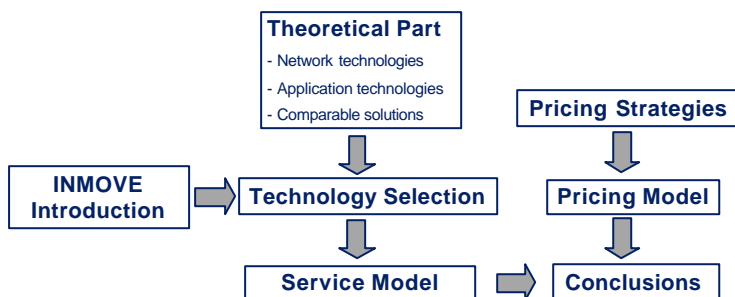


Research Problems and Objectives

- How wireless access can be offered to video-based monitoring service?
 - develop a service model for the wireless access
- How mobile Internet pricing models can be used in the wireless monitoring service?
 - develop pricing models for the home and industrial monitoring services



Realisation of Work





Literary Research

- Wireless network technologies
 - GSM, HSCSD, GPRS, EDGE, UMTS, Bluetooth and WLAN
- Wireless service and application technologies
 - SMS, WAP, MMS, video and Java applications
- Comparable surveillance services
 - On-Air Surveil Cam, AiloCom Wireless Camera Monitoring, WeSpot Intelligent Intrusion Sensor, Nokia Observation Camera, Digia ImageSpy
- Pricing strategies for wireless Internet services
 - usage-based, flat rate and block pricing



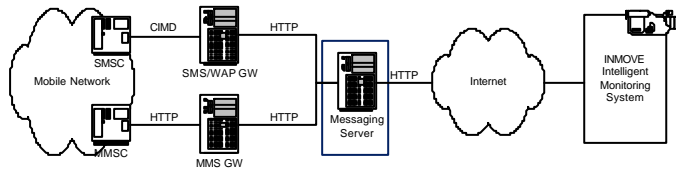
Own Part

- Technical model for the wireless access to video-based monitoring service
 - SMS, MMS, WAP Push, Internet
 - Messaging Server
 - XML interface
- Pricing models for the monitoring services
 - home monitoring
 - industrial monitoring



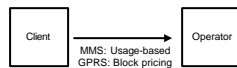
Results – Messaging Server

- XML interface of Messaging Server for message transmission

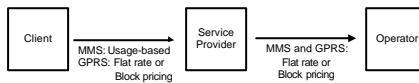


Results – Pricing Models

- Home monitoring

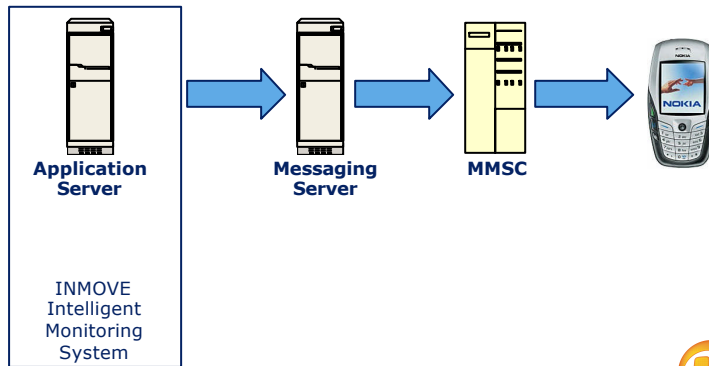


- Industrial monitoring





Example – MMS Sending



Conclusions and Future Research

- Messaging server solution was functional
 - tests in Geelab (test laboratory of Technology Center)
 - first trial phase in INMOVE project
 - disadvantage: too many network elements
- Simple pricing models
 - leading principles are easy to understand
 - do not directly resolve pricing solution
- Future research
 - messaging server development after second phase trials of INMOVE project
 - location-based information and mobile IP



Thank You!

Questions?