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AMPOSDRU



Fondul Social European  
POSDRU 2007-2013



Instrumente Structurale  
2007-2013



MINISTERUL  
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Universitatea  
**POLITEHNICA**  
din Bucuresti

# Mobile telecommunication services

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**Program Strategic pentru Promovarea Inovarii în Servicii prin  
Educație Deschisă, Continuă (INSEED)**

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FONDUL SOCIAL EUROPEAN

Investește în  
**OAMENI**





## ETTI-Team Contribution

- Continuous education programs
- Cooperation agreements
- Trainings
- Other results

## Telecom services using mobile devices

## Application example



## Continuous education programs

1. Services in electronic industry. Consultant/Expert services for manufacture in electronic industry

### *Learning Trajectory*

No.	Module	Teaching activities					ECTS	Eval.
		C	S	L	P	PA		
1.	Advanced services in electronic industry	8				2	4	Exam
2.	Modeling and simulation services for PCB fabrication	4				2		
3.	Non-conventional planar structures and design services	4				2		
4.	Methods and measurement techniques of non-conventional planar structures	4				2		
5.	Advanced materials and alloys for electronic devices interconnection	4				2		
6.	Soldering assembling technologies in electronic industry	4				4		
<b>Total hours</b>		28 + 14						



## Continuous education programs

### 2. Human-Device interfaces development

#### *Learning Trajectory*

No.	Module	Teaching activities					ECTS	Eval.
		C	S	L	P	AP		
1.	Mobile devices (evolution, technologies, characteristics, interfaces, specific applications)	5			2		4	Exam
2.	Operating systems for mobile devices	5			2			
3.	Development platforms (Java framework for Android, Objective C for Apple, .NET for Windows Mobile)	6			2			
4.	Applications development (graphical interfaces design, applications portability, sensors)	4			2			
5.	Typical applications and services for advanced mobile devices	3			3			
6.	Service innovation in mobile communications	5			3			
<b>Total hours</b>		28 + 14						



## Cooperation agreements

- **Universities (Faculties/Departments)**

*Technische Universität München (TUM), Germany – bilateral agreement – ERASMUS, scientific/research*

*Technical University of Sofia (TUS), Bulgaria – bilateral agreement – ERASMUS, scientific/research*

*Aristotle University of Thessaloniki (AUTH), Greece – bilateral agreement – ERASMUS, scientific/research*

*Faculty of Electronics, Communications and Computer Science – University of Pitesti*

*Faculty of Electrical Engineering, Electronics and Information Technology – Valahia University of Targoviste*

*Department of Electronics and Telecommunications – Constanta Maritime University*



## Cooperation agreements

- **Companies**  
COMTEST SRL, RomTek Electronics SRL, ECAS Electro, Complet Computers Consulting, Giga Electronic International, Electromagnetica Goldstar, ELSIX SRL, Neosis Security, Soel Systems

## Trainings

- **DigitalOptics Corp., Microsoft, Romkatel**

## Other results

- **Case studies: 60+**
- **Technology information: 20+**
- **Description of international or national projects about telecommunication services**

# Telecom services using mobile devices



## Definition

***“Service is everything that can’t drop on your foot.”***

*The Economist. Economics A- Z. Available online April 8, 2010*

## Key concepts: Product vs. Services

***“What can you **make** for me”*** → Product

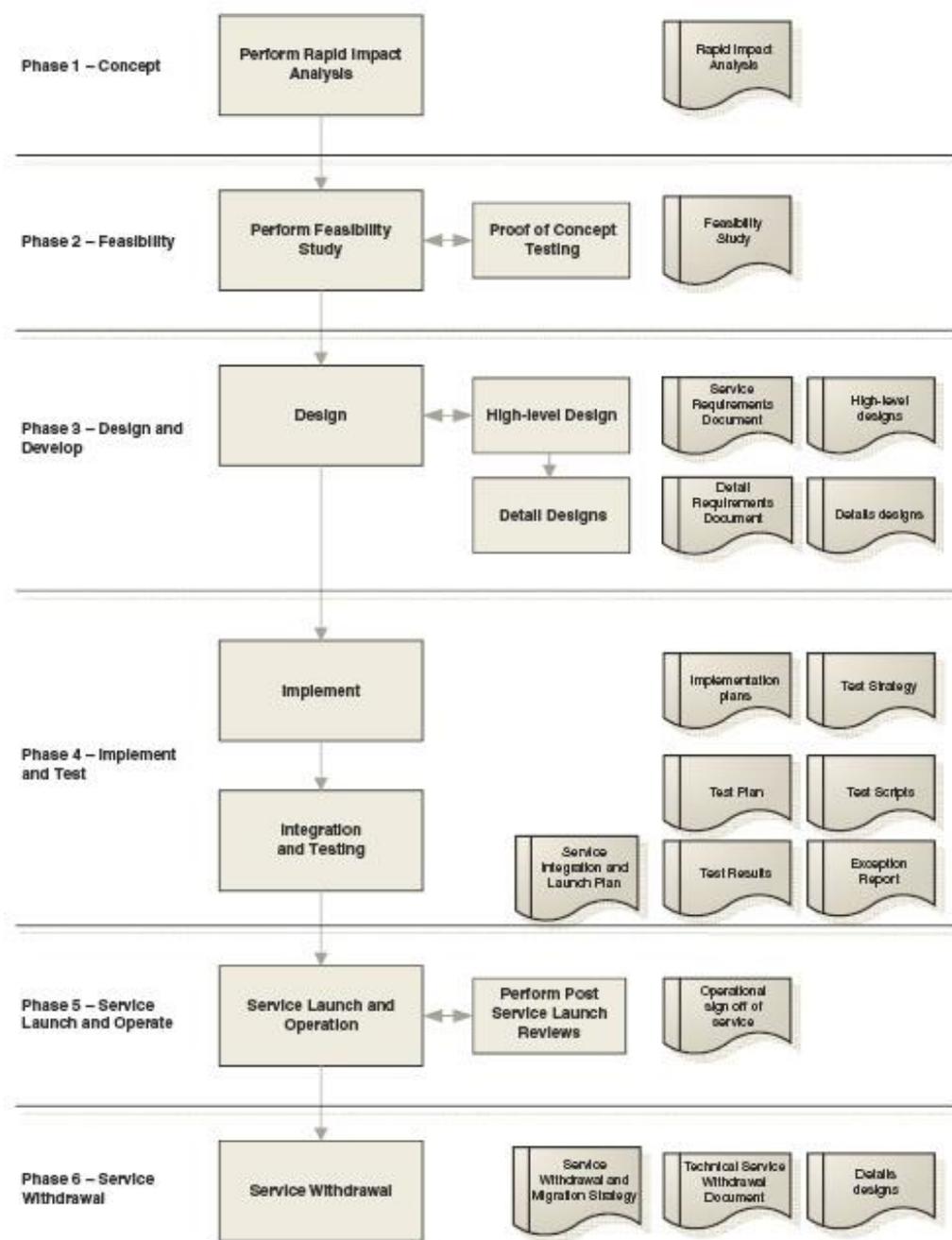
- mobile device, car, TV

***“What can you **do** for me”*** → Service

- VoIP, HDTV, Human-Device interfaces, Telecom. Integrated Services

# Mobile telecommunication services design:

- Phase 1: Concept
- Phase 2: Feasibility
- Phase 3: Design and Develop
- Phase 4: Implement and Test
- Phase 5: Service Launch and Operate
- Phase 6: Service Withdrawal



# Telecom services using mobile devices



## Value-Added Services in mobile comm. (mVAS)

**Service industry:** The enhancement added to a service by a company before the product is offered to customers.

*InvestorWords*

**Telecom industry:** Term used for *non-core* services (all services except standard voice call and fax transmissions)

**mVAS:** Customer-oriented interactive service that added value to a standard telecom service

- Stimulate the subscriber to use his mobile device more time
- Facilitate mobile services provider to have a better ARPU (*Average Revenue Per User*)



## Value-Added Services in mobile comm. (mVAS)

**mVAS includes:**

- Entertainment, multimedia content (music, VoIP, TV, IPTV), notifications/alerts, localization-based services, messaging improved capabilities

**Business- and commerce-oriented mVAS includes:**

- Advanced messaging, video-conference, information requested by client, e-banking

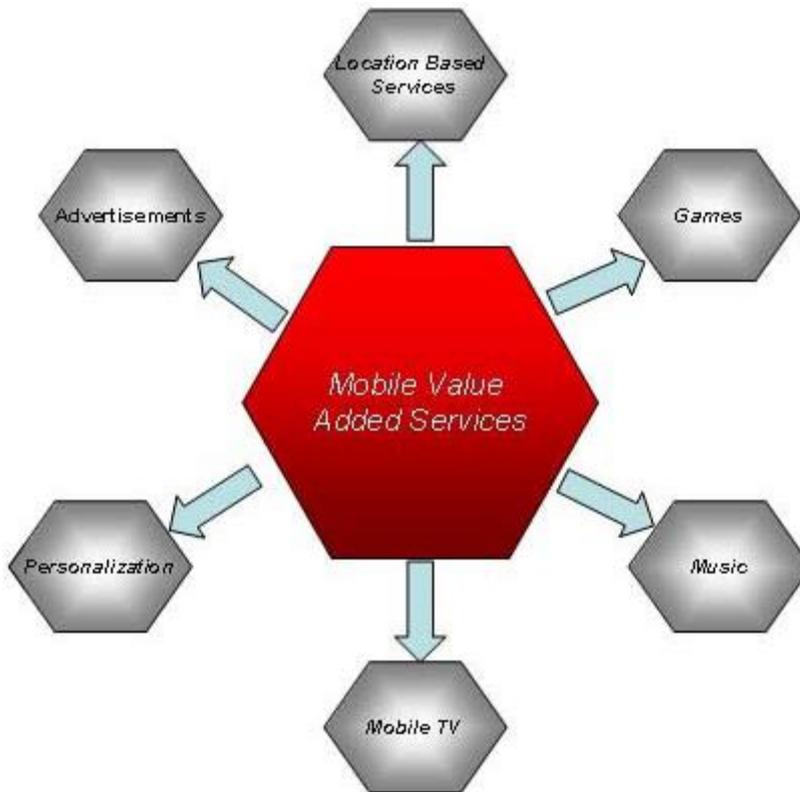
**mVAS can be provided by:**

- The mobile telecommunications service provider
- The content provider

# Telecom services using mobile devices



## Value-Added Services in mobile comm. (mVAS)



...what about *quality* (efficiency, usefulness) of the mVAS?

- *Provider*: additional income
- *Customer*: comfort (saving time and money), emotional benefits



### Content Providers

- Music
- Videos
- Books

### Transportation

### Localization

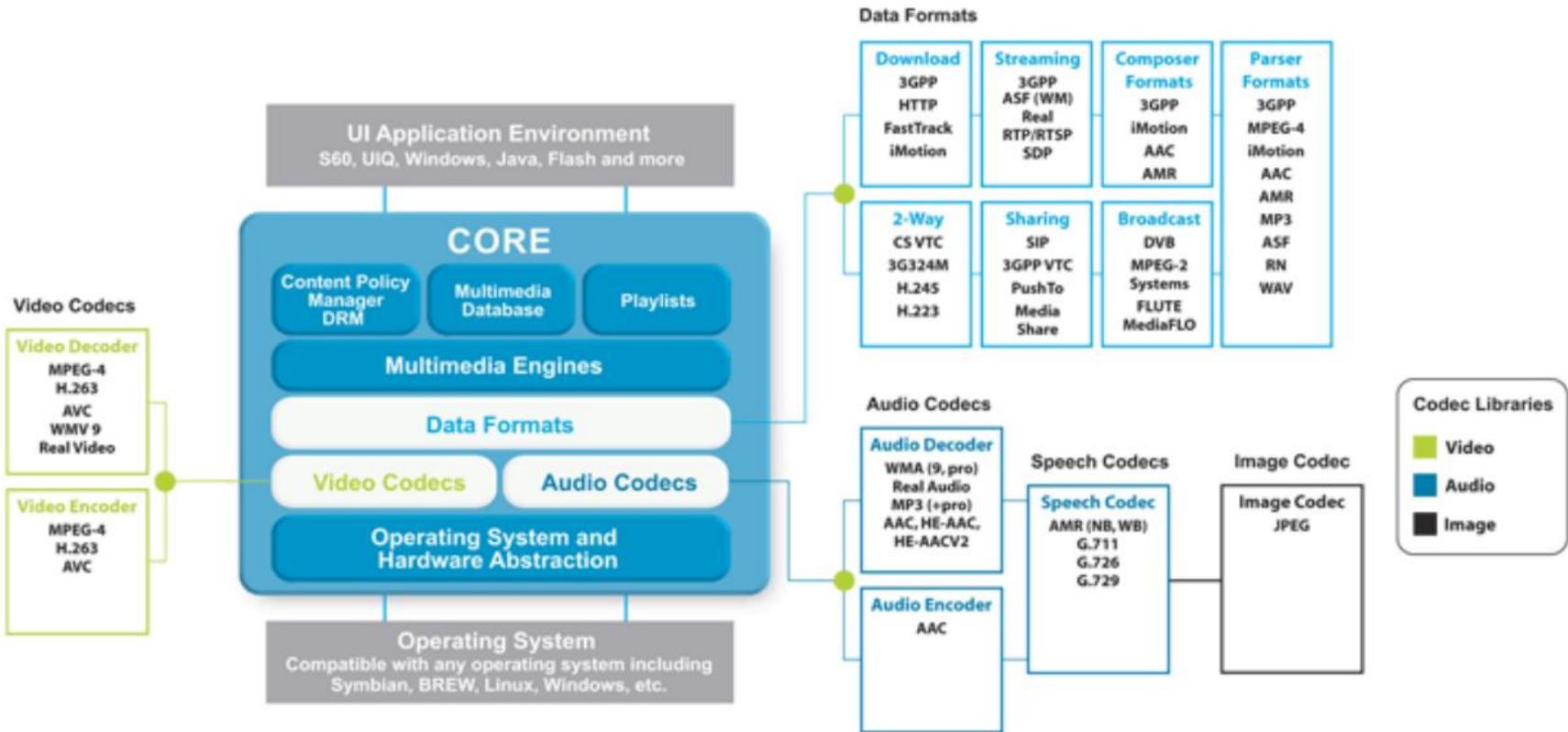
### Weather forecast

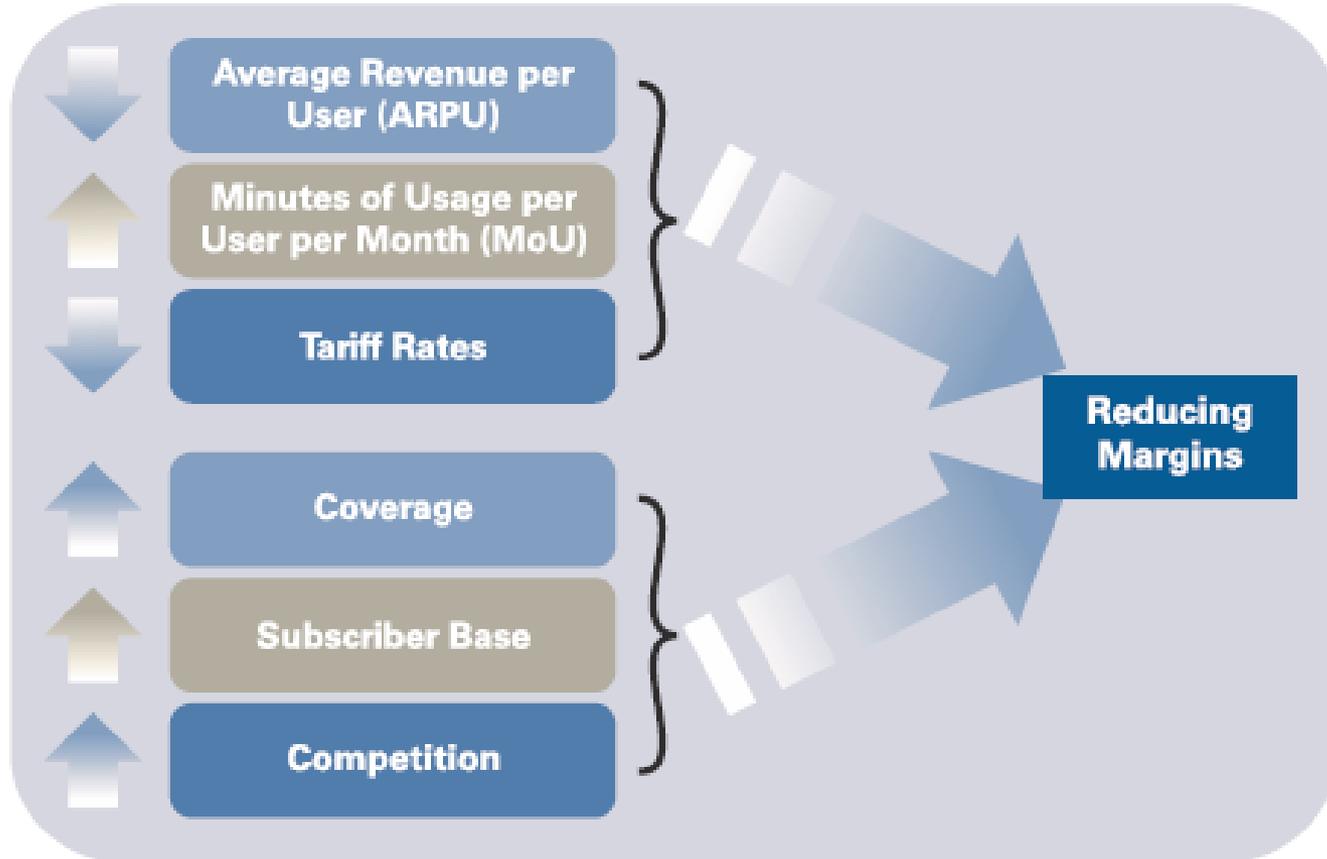
### Health Services





# Open Core Architecture









- Reality enhancement
- Reality + Knowledge database
- Browse life like browsing the web and experience the real world
- Requirements
  - Camera
  - GPS
  - Internet connection



- Complex information**
- Real time update**
- Low cost benefits**
- Requirements**
  - GPS**
  - Internet connection**
  - Open Maps Database**

