Emperical Observations on the Emergence of Mobile Multimedia Services and Applications in the U.S. and Europe

- several panel studies in the U.S. and Europe in 2005-2006: hand-set based usage-level measurements (including 1700 Symbian smartphone users – early adopters)

Introduction

- in the past: WAP/MMS - no big commercialization success in US/Europe (unlike Japan/Korea)
- now: IP-based services
- ubiquitous computing – entertainment, information, communications – usage measurement of applications and services critical for business model
- panel study: volunteering subscribers, with special monitoring software

Mobile Multimedia Services

- Service provider and service user
- network applications, interfaces to services, offline applications
- Symbian application categories:
  - music/audio player, music/video player, photo/image viewer, imaging functions (camera), blogging applications, infotainment apps, games, multimedia communications (MMS, bluetooth, IM, email,...)
- This study uses above, things like WEB/WAP browsing excluded

Figure 1

- online/offline + interactivity

- built-in/3rd party apps
- disruptive apps: (IM, VoIP), view of cellular operator -> any MM data they get no revenue from
- key difference of mobile services to other services:
  - spatial & temporal components
  - e.g. going to bank (neither spatial nor temporal), online banking 24 hours (temporal), but need computer (spatial), mobile no spatial or temporal constraints (if network available)

Research platform

- Handsets usually lack HW capability to acquire usage data
- This study: Nokia HW, Symbian OS, usage monitoring software

Figure 2

- recruited subscribers acknowledge download of monitoring software
- only id numbers so anonymity
- requires lega/business/marketing capabilities
**Empirical Findings**

- 2005-2006
- U.S, Germany, France, England, Finland
- only participants with at least two weeks of active usage -> 1726 Nokia S60 users left
- 88%: male, 42%: 25-34 years

Figure 3: Application Usage
- 97% tried camera (66% recorded videos)
- 71% played games (34% installed new games, 1070 different)
- 13% tried streaming packet data (music/video)
- offline usage: 51% music/video playback, 48% image viewing (excluding built-in)
- 13% blogging (mainly Nokia life-blog)
- 2% Infotainment (weather services, google maps, news)

Figure 4: Usage Intensities (actinos / user)
- photos, gaming
- compared to non-multimedia, quite infrequent, compared to: 80 voice calls and 92 SMS
- paper focused on Finland: lacking market so far

Multimedia Communications
- not much video calls use identified

Figure 5: Multimedia Communications
- Bluetooth messaging (sending content to others): 60%
- MMS: 57%
- email: 27% (U.S. more active)
- IM: 11%

Figure 6: Usage Intensity
- U.S. is best market
- Those who do use IM and email use it actively, in U.S. comparable to voice/SMS
- bluetooth mostly .jpsgs (also email)

**Conclusion**

- there was big interest Imaging/Camera
- Also in gaming (18 games played / month on average)
- multimedia players mostly offline
- MMS + bluetooth dominate over email/IM (not in USA)