Digital television and T-government services

COST 605 Econ@Tel A Telecommunications Economics COST Network

Management Committee and plenary meeting

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Research interests

- Relevant factors of DTV technology adoption
- Policy implications

Benefits of Digital TV

- More channels and subchannels
- Higher resolution than analog
- Interactive TV
- Multiple audio and video options

The digitally enhanced TV of tomorrow

eEurope – An Information Society for ALL

- Bringing every citizen, home and school, every business and administration into the digital age and on-line
- Creating a digitally literate Europe, supported by an entrepreneurial culture ready to finance and develop new ideas
- Ensuring the whole process is socially inclusive, builds consumer trust and strengthens social cohesion

Public Call for Co-funding of T-government Projects

- A joint initiative of Ministry of Communications (through FUB) and Ministry of Innovation and Technology (through CNIPA), to boost
  - Provision and use of T-government
  - Higher degree of interactivity
    - Advanced types of return channel
  - More effective and more secure use of interactivity
    - smart cards for user authentication
  - Business and financial viability
  - Willingness to share T-governement solutions among different local administrations

T-government Projects promoted by FUB

1. Services to citizens through DTT (request of certificates, payment of bills)
2. Services of the Parma Municipality (demographic and educational services, payment of fines)
3. Social and health services to citizens, informative and with regional card (drugstores on duty, medical visit reservation, choice of personal doctor)
4. Five interactive DTT applications (utilities, telemedicine, T-learning, book reservation in a library, cheque validity test)
5. T-islessia (dyslexia rehabilitation)
6. DTT Employment Channel (T-learning, employment services, community, book purchase)

T-gov service screens

Research goals

- to model and better understand the user behaviour during the diffusion of a new, emerging technology
- to evaluate the microsimulation approach as a tool to predict consequences of policies on different levels (i.e. business, governmental)

Research rationale

- To evaluate the influence of usability aspects (perceived usefulness, perceived ease of use, provided user support) and economic aspects on:
  - the user's intention to adopt digital terrestrial television equipment
  - the user's intention to use information and interactive T-government services

The field investigation of Parma Municipality

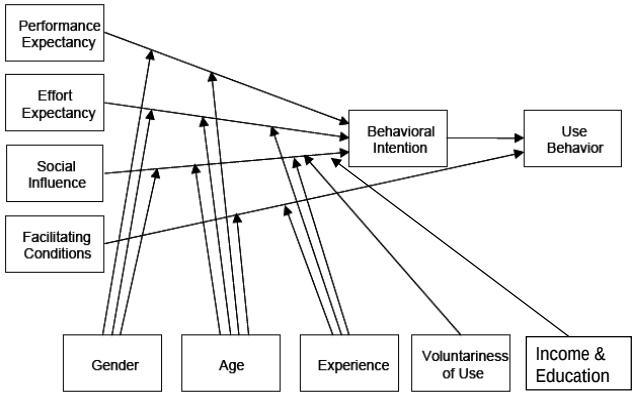
- T-government services
  - INFORMATIVE (e.g. services to the citizens, cultural initiatives in the city)
  - INTERACTIVE (fines payment, state of a demographic dossier, state of a request for education services)
- A sample of 200 citizens
  - demographic characteristics
  - potential interest toward services
- Paper based questionnaire

Usability aspects

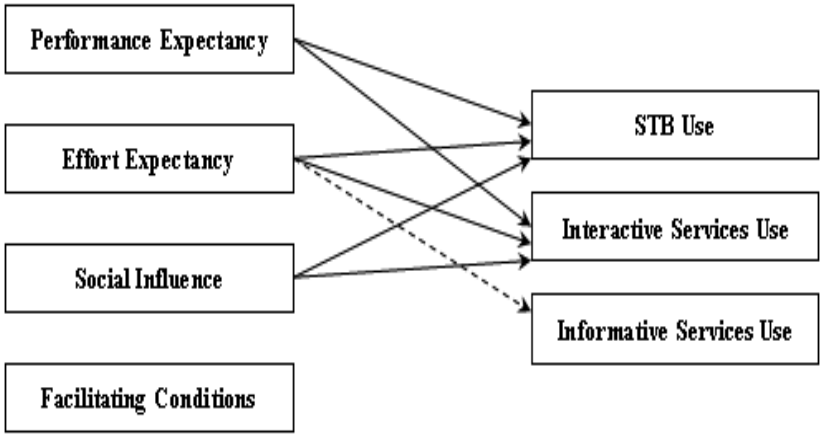
- perceived service usefulness
- perceived ease and pleasantness of use
- user perception of technical disturbancies
- training and user support (human support, user manual, call center)
- drawbacks detected during the service use
- impact of equipment in the house
- security and privacy aspects
- user satisfaction including comparison with different channels to perform the same task (e.g. Internet, office desk)

UTAUT model (adapted)

(Unified Theory of Acceptance and Use of Technology)



A model of T-Government usage factors



Microsimulation - I

- Microscopic elements (agents) and their relations: people, households, firms, government; family ties, social networks, social groups
- Events (rules): births, marriages, different activities...

Microsimulation - II

- Microscopic elements are represented individually, with all their individual characteristics
- Rules of usage behaviour are implied dynamically in time
- Agents can grow old, adopt ICTs...

Some properties

- MS enables experiments
- The observed "micropopulation" is created virtually: its characteristics can be based on real society (sample or entire)
- Rules can be derived
  - in the form of statistical models
  - in other ways (e.g. decision trees)

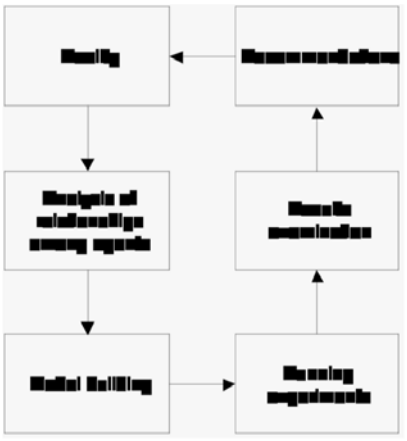
Some properties

- MS helps to avoid some problems with analytical models:
  - models (especially macromodels) are built upon assumptions
  - in the attempt to deal with assumptions, they can become complex and difficult to analyse
- It presents new research possiblities
  - representation of every individual agent
  - direct inclusion of social networks
  - behavioral studies under different policies

Steps

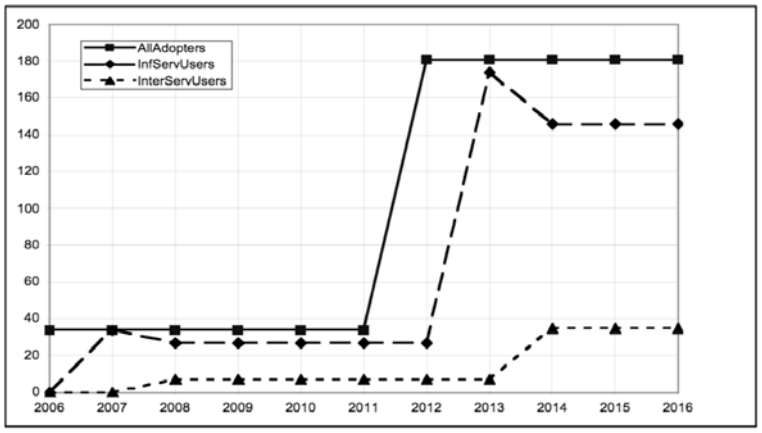
- Preliminary analysis and data collection
- Relationships among agents and system dynamics
- Programming and running the microsimulation model
- Results examination
- Further research (on adoption factors)

Microsimulation model development



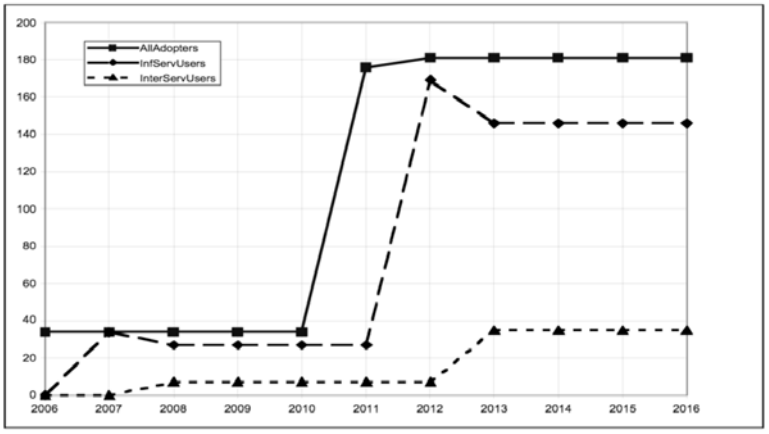
Scenario 1

Switch off in 2013, No subsidy, No communication



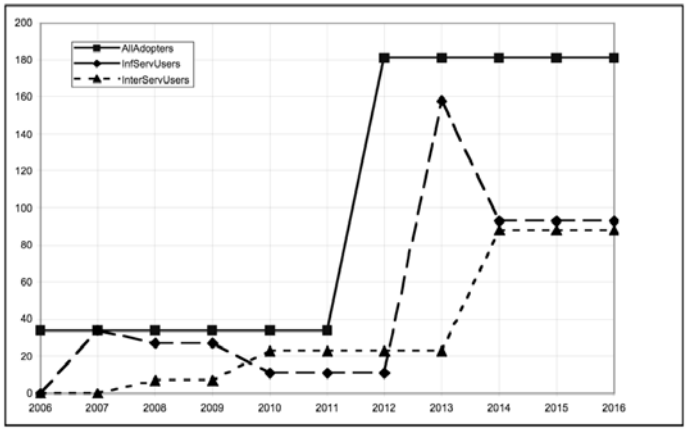
Scenario 2

Switch off in 2013, subsidy 2011-2013, No communication



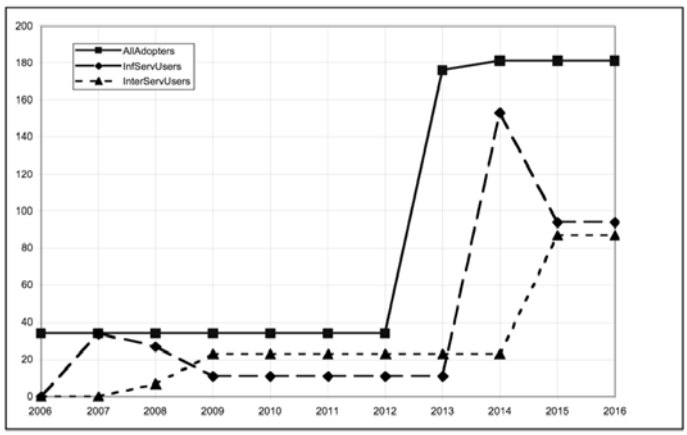
Scenario 3

Switch off in 2013, Communication (level 2) 2010-2014, No subsidy



Scenario 4

Switch off in 2015, Subsidy: 2013-2015, Communication (level 2) 2009-2015



Thank you for your attention...

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