

Service adoption

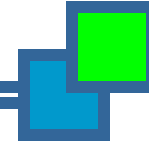
Subproject of
Optimal Rules for a Leading Mobile Data Market

Seminar 24.5.2005



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Research Question

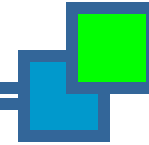


- Mobile Value added, Adoption of Data Services in Finland

- Symptoms
 - Why the market has developed so slowly ?
 - Finland was the leader in Voice and SMS but now it is all price competition, no service innovation
 - Japan and Korea are leading the market, what we could learn from them ?

- Service Adoption Research
 - Root cause is the Environment, Macro model
 - Culture is different, Regulation is different, Structure of the Industry is different
 - Root Cause is the End Customer, Micro model
 - How about service adoption ? What are the factors impacting service adoption ?

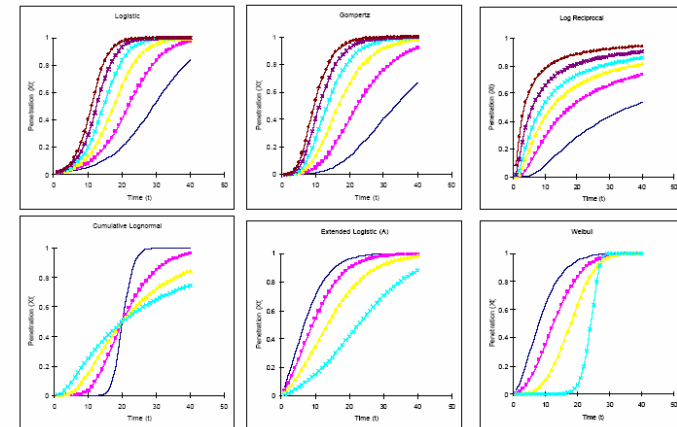
Service Adoption = Pattern Regression ?, Rational Behavior ?



- Several theories available for Mature markets: Economic theories, balance between supply and demand, Balance between competition and pricing etc.
- Several theories available for emerging markets

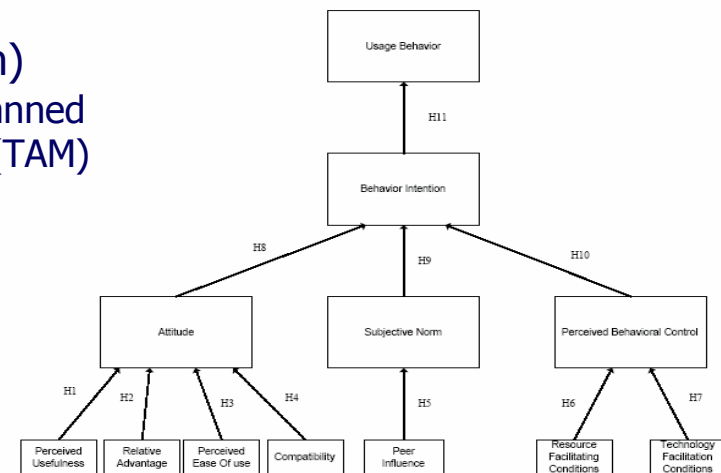
- Macro model

- Diffusion modeled with various logistic models ($df/dt = \mu f - kf^2$)
 - Bass, Kumar, Fisher-Pry
 - Growth curve matching with analogues



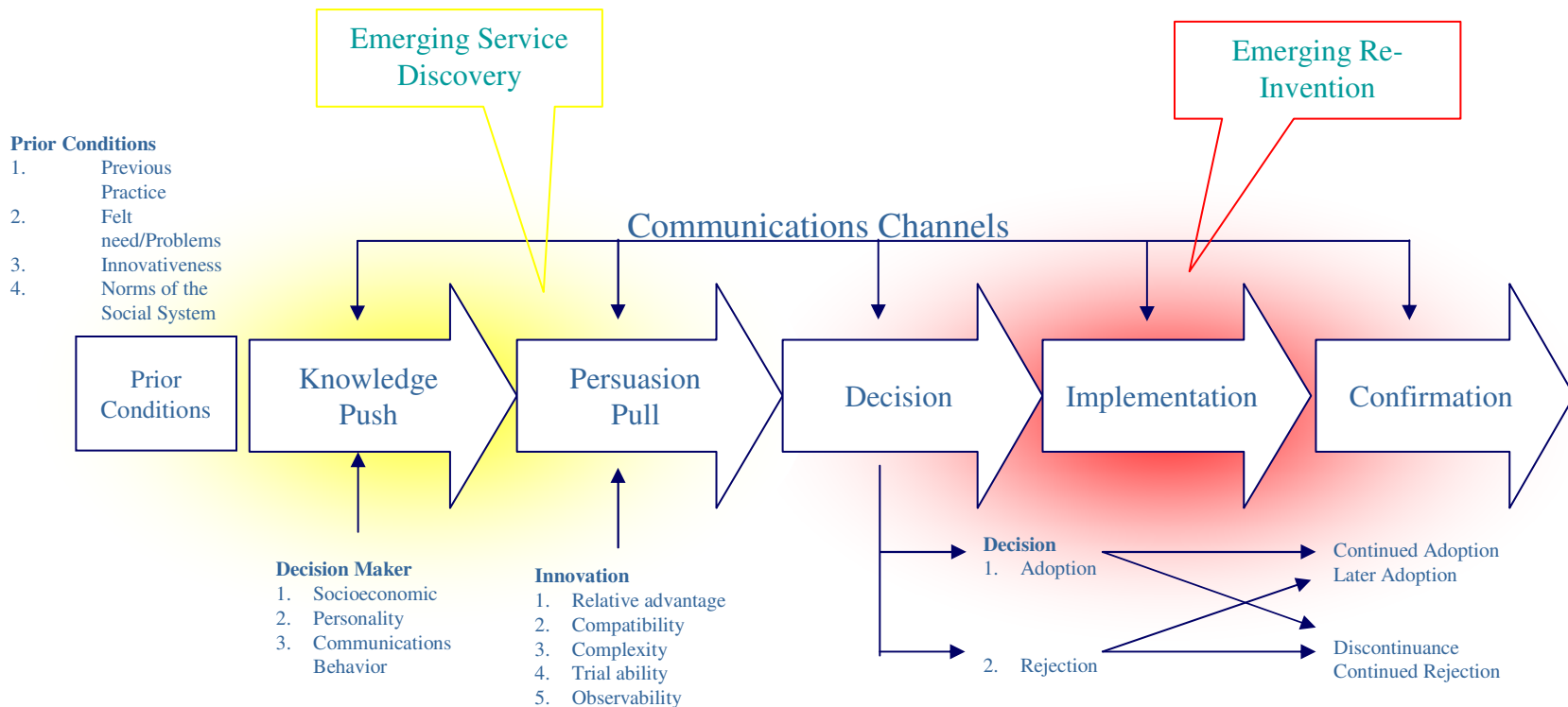
- Micro models (Individual adopter Orientation)

- Theory of Reason Action (TRA), Theory of Planned Behavior (TPB), Technology Adoption Model (TAM)
 - Fishbein, Ajzen, Davis

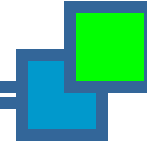


Service Adoption = Diffusion of Innovations ?

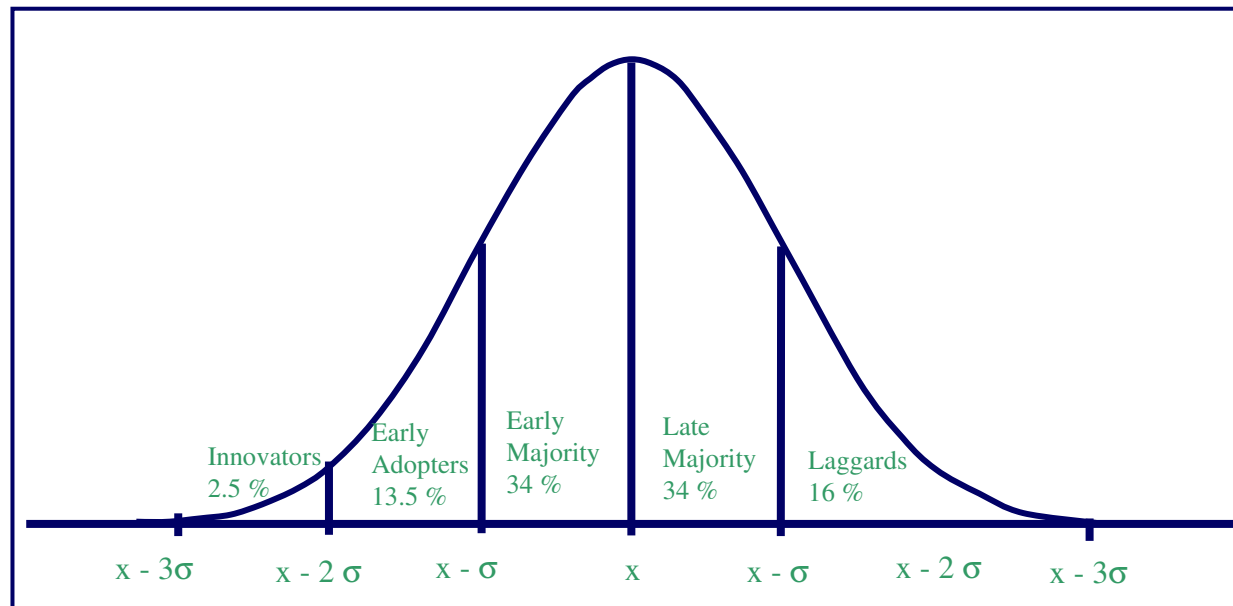
- Stages of Innovation Diffusion as defined by Rogers
 - Only model with characteristics of the Innovation included
 - Relevant for Innovation developers
 - Applies to to products and services
 - Strong evidence from many earlier research



Groups of Adopters



- Heuristic grouping, Usable as mental model
- No real borderlines but continuous distribution functions
- Groups simplified in macro level studies
- Groups have many solid characteristics to be analyzed

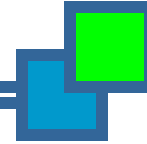


Questionnaire for the Interviews



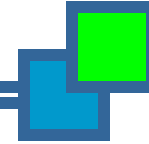
- Questionnaire is used to structure the Interviews
- Rogers's main factors are analyzed
 - Relative Advantage
 - Compatibility
 - Complexity
 - Trial ability
 - Observability
- Some other elements are also analyzed
 - Networking
 - Re-Invention
 - Pricing
 - Dissonance and Dissatisfaction

Services discussed



- Ring-tones and Logos
- Telephone directory services (SMS, Fonecta client, Voice based services)
- Mobile messaging (SMS, Email, MMS)
- Java Applets (Application Clients (DNA Katalogi), Games)
- News services (WAP News, Sonera Uutiset)
- Mobile payment in general, Parkit et al.
- Subscription management
- Terminal Applications (to complement terminal local services)
- Cross media applications (Groove FM with Internet browsing)
- Mobile Internet (Oma saitti)
- Content services (Stream man, Jamba Karaoke, F1 MMS)
- Location services (Missä olet?)

Preliminary findings

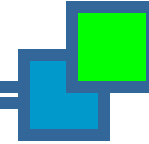


- Relative advantage
 - All services (except basic SMS) so far discussed have had non-mobile predecessor
 - No fundamentally new service invented
 - Added value is depending on the "urgency" of the information
 - => **Main relative advantage is in all cases: Mobility of the existing service**
 - Convenience of use in general and independently of the location
 - Personalization (=End user Differentiation) provides high added value
 - More options to choose (Breadth of the catalogs)

 - Low quality of content relative to existing content quality reduce advantage quickly
 - Low performance (delay) will reduce significantly any feel of relative advantage of Mobile service. (Similarly this may explain the low penetration of Mobile Voice services in PDC)
 - Services typically strongly dependent on end user segment => Relative advantages are like sharp needles => No Killer Application !

- Compatibility
 - In successful cases strong correlation with compatibility to previous ideas (use of similar services) and their "user interface" both in Japan and in Finland
 - Compatibility to user paradigm of the lead mobile social service (Email or SMS) is important.
 - (MMS has no "earlier service" - SMS is not the right reference!)

Preliminary findings

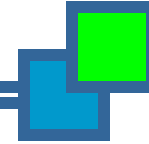


- Complexity
 - Service Discovery Complexity (Cross media requirement is often too complex).
 - In I-Mode all the services accessible with only one device/media
 - Service Complexity (Configuration)
 - Device Complexity (Configuration)
 - No Value system Complexity (One bill is a benchmark, no additional authentications)

- Trialability
 - Trialability is important in the beginning
 - Strong compatibility aspects will reduce need for trialability
 - Trialability is very important when transactional service fee (first time must be right!)

- Observability
 - Strong positive factor in the early phase of diffusion
 - Impact fades away when penetration is over inflection point
 - May grow also to negative if the service is "too observable"

Preliminary findings



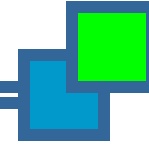
- Networking, So far networking is under utilized. Only traditional ways used.
 - Word of Mouth
 - Mobile service piggy packing on the networking social service
 - No strong evidence of build in technology/service networking so far

- Re-Invention
 - No significant re-invention of the services. Email and SMS used to transport various content. Some services have some personalization settings, bookmarks etc.

- Pricing
 - Two fundamental pricing schemes
 - I mode:
 - Monthly fee of the basic Voice service with various voice tariffs
 - No initial fee for subscription
 - Monthly fee of I Mode (2.5 €)
 - Usage fee of data, based on Volume, includes several block rate discount schemes 5 - 20 € / MB
 - Monthly service fee, no transactional fees, maximum spending limit (some exceptions) 0.8-2.5€ / service
 - => In Japan the consumption model is block rate in services, volume rate for discovery
 - Finland:
 - Monthly fee of the basic Voice service with various voice tariffs
 - Typically no initial fee for subscription
 - Variable volume based tariffs 1.5 – 5 €/MB
 - Transactional fees, 1€ / transaction
 - => In Finland the consumption model is block rate in discovery, transaction rate for services

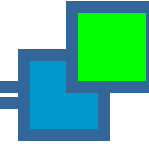
- Dissonance
 - Heavy users often only small fraction of total users => No killer service ever !?!
 - Service discovery may not be the fundamental problem but dissatisfaction

Draft Conclusions



- Mobility is THE Advantage of Mobile networks
 - Delay may easily vaporize the mobility advantage. Mobility = Busyness (not only business)
- First things First = Connection is the King => Social Network driving the service adoption
 - SMS => SMS Service, I-Mode Email => I-Mode Services
(But also Writing letters => Publishing books)
 - Metcalfe's law $\sim N^2$ (or something less) => Sarnoff's law $\sim N$
 - Discover Content services through Connecting Services !
(WAP based Content services totally disconnected from Social networking/Connecting services)
- End user drive has been low in Mobile services => Open Platforms needed
 - Low Networking of services: Multicalls, Email distribution lists, attachments, content forwarding
 - Low Re-invention on the service platform: like SMS use for services
- Technology Cluster
 - Adoption of a Technology Cluster is a holistic phenomenon (Rogers)
 - Adoption of a Service requires a whole product (Moore)
- Business and Consumer models
 - Finland is business thinking driven
 - Commercial transactions, Voice driven market, high voice penetration, data motivated for business use
 - Japan in consumer thinking driven
 - Subscriptions, block (or flat) rate, Data driven market, low voice penetration, low motivation of data business use
 - However, Consumer typically is not rational

Internet or Telecom ?



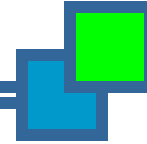
- More or Less Liberal Telecom rules not Internet rules both in Japan and in Finland
 - I-Mode is systematically within the Telecom framework
 - Positioning of Mobile Services in Finland as part of Telecom but not systematically
 - Both markets may be disrupted in the future by Internet rules.
- Fight against or Fight for the disruption ? You can not do both at the same time!
- Service Diffusion Strategies depend of the Business/regulation model
 - Service diffusion in Monopoly/Less liberal Telecom by Authority (+Mass Media)
 - Corporate solutions
 - Mega-operator solutions
 - Government and Military
 - Service diffusion in Liberal Telecom by Market pull (+Mass Media)
 - Consumer electronics
 - Market economy
 - Service diffusion in Free Internet by Super-distribution ()
 - Platform HW, Application software, Services
 - Emerging network economy

End User has no/low choice of options

End User has to choose between many options

Infrastructure is predefined
End Users co-operate to synthesize solutions
Facilitating intermediaries

Diffusion of Innovations in the Future



- **Traditionally in Telecom** Innovations have diffused because of two factors
 - Mass Media ignite the early adopters
 - Mass adoption through the social network
 - Weak signals
 - American teens use more time in the internet than at the TV => Marketing through Mass media does not work
- **Network economy view:** Service innovation is created within the social networks
 - Innovation diffusion directly using available global social networks
 - Mass media may only report the phenomenon later
- **Re-focus:** Emphasis to internal communication
 - Principles of Agent based Diffusion, From Push to Pull and to Super Distribution
 - In power law complex networks you do not broadcast you message. => In power law networks you enable your message to be found
 - Microsoft used 500 MUSD to advertise their X Box
 - Habbo Hotel has not used a penny to gain 23 M users
 - Skype has >80 M downloads

