ITEA 2

INFORMATION TECHNOLOGY FOR EUROPEAN ADVANCEMENT

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Ubiquitous M2M Service Networks [Usenet]

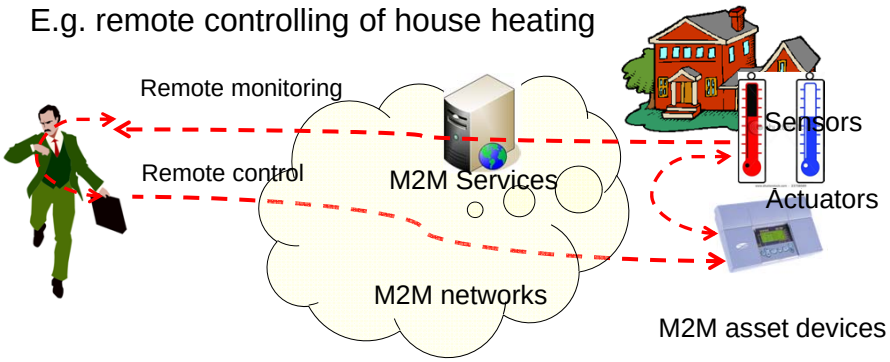
Co-summit 2011, 25-26 October 2011, Helsinki

Juhani Latvakoski (Juhani.Latvakoski@vtt.fi)



Machine to Machine (M2M)?

E.g. remote controlling of house heating

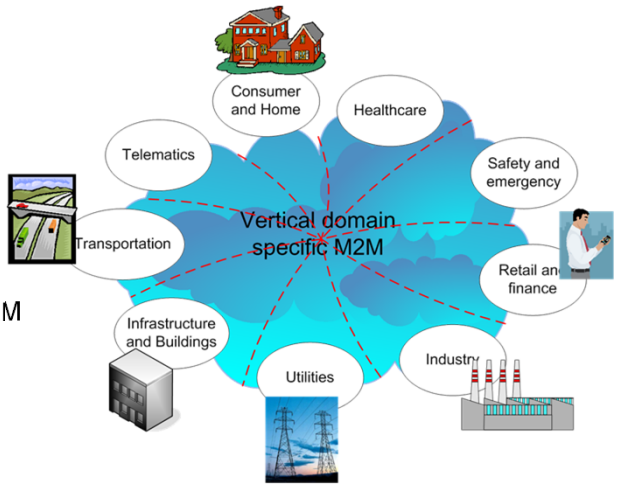


M2M enables:

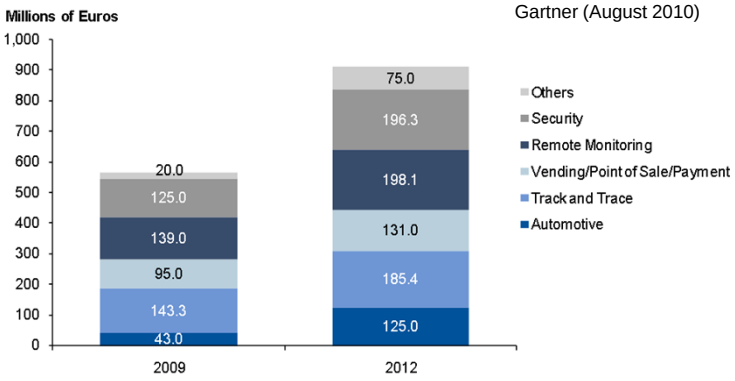
- Exposing services from M2M asset devices
- Ubiquitous use of services
- Connecting physical, virtual world and user with each other

Vertical M2M Application Domains

- M2M market is fragmented to multiple domains
- Domain (or even vendor) specific closed systems
- Each domain seem to have multiple M2M cases
- R&D Cost
- Volume



M2M Market forecast in Cellular Mobile



Gartner (August 2010)

- Number of cellular M2M subscriptions is growing rapidly
  - From 15.2 M (2010) to 582 M (2015) in Europe (Frost & Sullivan)
- Total number of M2M devices will grow over 1 trillion (IBM Research)

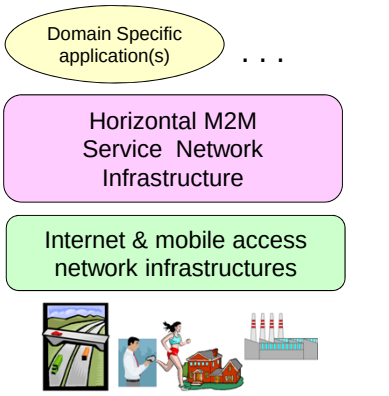
Motivation for Usenet project

Vertical M2M

- Market growth is limited by fragmentation
- Solutions are usually developed separately for each M2M application domains
- Vendor or domain specific closed systems are not very cost efficient
- Customer is usually tied for a single vendor/service provider

UseNet

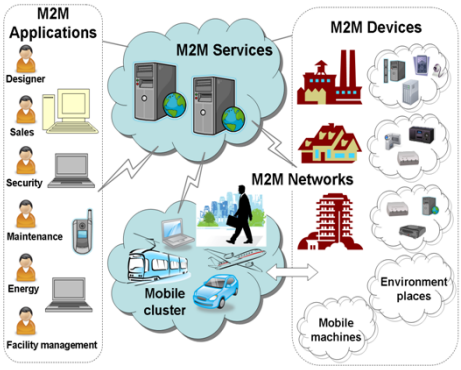
Horizontal M2M



Applicable for multiple domains, and based on open M2M standards

Usenet project approach

- To specify Horizontal M2M Service Network Infrastructure applicable for multiple domain applications
- To evaluate the specified solutions with the experimental systems with limited set of vertical application cases
- To boost M2M standardisation towards the horizontal approach based on the specified and evaluated solutions



Targeted Innovation

M2M Internet: Ubiquitous use of the Services provided by machines, devices, sensors and actuators which are connected to heterogeneous Networks

Consortium of ITEA 2 Usenet 06004



Telematics

Transportation

Buildings
Consumer

Home

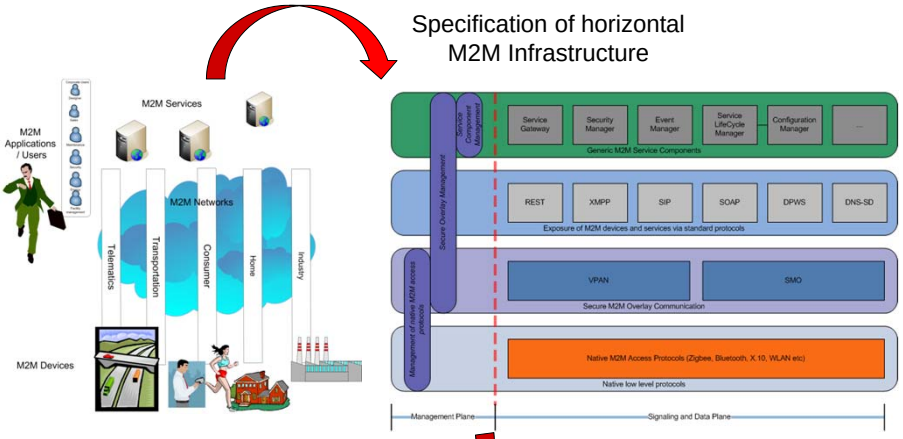
Industry

Research

Project duration: 1 Sept 2007 - 31 Dec 2010
Cost & Effort: 13.6 M€, 144 person year

Main Contributions of the project

Specification of horizontal
M2M Infrastructure



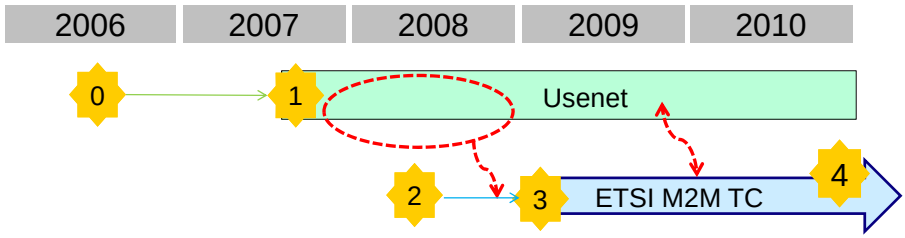
Solutions for the selected
vertical M2M cases

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Main achievements

- Conceptual Horizontal M2M Infrastructure Specification, and corresponding SW solutions
- Vertical domain specific experimental systems used in the evaluation of the specification
- Exploitation of results in ca. 13 different products / pre-commercial products by industrial companies
- 55 publications, e.g. IEEE conferences and magazines, and Springer journals.
- High impact on the M2M standardization especially in the ETSI M2M TC via the project industrial partners
- Spin-off company, Geosparc (www.geosparc.com), Belgium, GIS application framework (Geomajas open source project) & services.

Impact to M2M Standardization



- Establishment phase of usenet project (0)
- Usenet project started 9/2007 (1)
- Contribution into the establishment of ETSI M2M Technical Committee (TC) (2-3)
- ETSI M2M TC started its' work in the beginning of 2009 (3)
- Contributions, and interaction with ETSI M2M TC via project industrial partners (3-4)

Industrial exploitation cases (e.g.)

- Novel wireless sensors and solutions for monitoring car transfer truck (RMONI)
- Application of results in home network manager solutions (Alcatel-Lucent)
- Tracking and geo-localization of vehicles in transportation (Bull)
- Public transportation systems, tramway management and control solutions (Thales)
- Monitoring domotic appliances and white goods (Fagor)
- Weather forecast based on mobile measurements (Foreca)
- Smart M2M services for Building automation (Ouman)

rmoni wireless monitoring



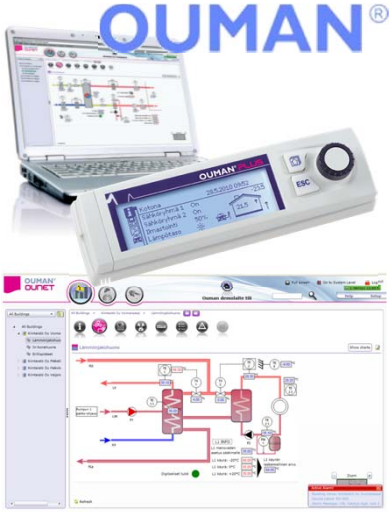


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Smart M2M services for Building automation

- Centralized remote monitoring and control service system for building automation
- Enable remote use of Ouman automation devices over the Internet using Web browsers
- Smart real-time services which can help in building maintenance
- Useful in maintaining large number of buildings that includes a lot of automation devices and system users
- Can be used to optimize energy consumption, increase efficiency, save working time and reduce cost of building automation services

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Services for geographical information systems

- Spin-off company – Geosparc established in Belgium
- Geosparc supports Geomajas, the open source GIS application development software
- Coupling the innovation of open source with the reliability of a true enterprise-class platform
- Built with today's Internet and cloud architectures in mind
- Usenet project has been essential enabler and provided the chance to experiment with use cases where mobility was involved
- More information:
  http://www.geosparc.com & http://www.geomajas.org



Concluding remarks

- Usenet project has been *a pioneer project* in initiating horizontal M2M Infrastructure Specification works
- M2M service network specifications *have been evaluated* in 5 different vertical cases and is compatible with ETSI M2M approach
- Commercial exploitation at least in 5 different vertical cases, with 13 products/services
- This is a single step towards the more efficient and comfortable society!
- Work for the next step continues… in several projects and forums

Project team succeeded to achieve the very ambitious goals!

Thanks to all the project partners for their contribution and excellent co-operation!

Thanks to the reviewers and public authorities for guiding and helping us to make a successfull project with excellent results !

More information: usenet.erve.vtt.fi

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Thank you for your attention

