APPLICATION-CENTRIC NETWORK INFRASTRUCTURE CREATION?

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Csaba A. Szabo
professor
BME Dept. of Telecommunications
szabo@hit.bme.hu
An approach to application-centric network infrastructure creation: Community Networks

- **Why are they application-centric?**
  - Created to provide applications and services that are important for the community but not supported by telcos’s networks.
  - New network infrastructures designed by a top-down method. Have to be application driven (otherwise their initiatives die...).

- **Why are telcos (usually) not?**
  - How can a telco expand its infrastructure? Result: no ubiquitous availability, support only their existing services. Different business models.
Applications that drive the development of municipal/regional networks

- To have one or more “anchor” application is a must
  - Providing just internet service to citizens is not enough
    - That’s why some initiatives in the USA failed (e.g. Wireless Philadelphia)

- Applications:
  - AMR (automated meter reading)
  - Intelligent parking systems
  - Health care and telemedicine
  - Fleet management for city transport
  - Services for tourists and the citizens
  - ...

- All of them can bring direct revenues and indirect benefits
Top-down design

- A top-down approach, starting from application requirements
- As opposed to just expanding the existing infrastructure, continuing with existing services and maybe see if some new ones can be supported (~ telco approach)
  1. Identifying applications and services and technology requirements
  1. Identifying coverage requirements and the specifics of the environment
  1. Choosing network technology
  2. Planning of network topology
  3. Verifying original requirements

Community networks can be more flexible and innovative in selecting network technologies
- Telcos need to be more conservative. Have to think about their existing investments.
- Example: 3G – B3G vs Wi-Fi mesh, WiMAX
Digital City/Region Examples

**Corpus Christi, TX, USA**
AMR system for water and gas customers, building inspection, health care, video surveillance

**Digital Győr, Hungary (planned)**
Parking control, transport traffic information and bus fleet management, tourist information

**Trentino, North Italy**
Healthcare, telemedicine, energy management, territory monitoring