

# **Obstacles and barriers for SME's in AAL development (as observed in NL)**

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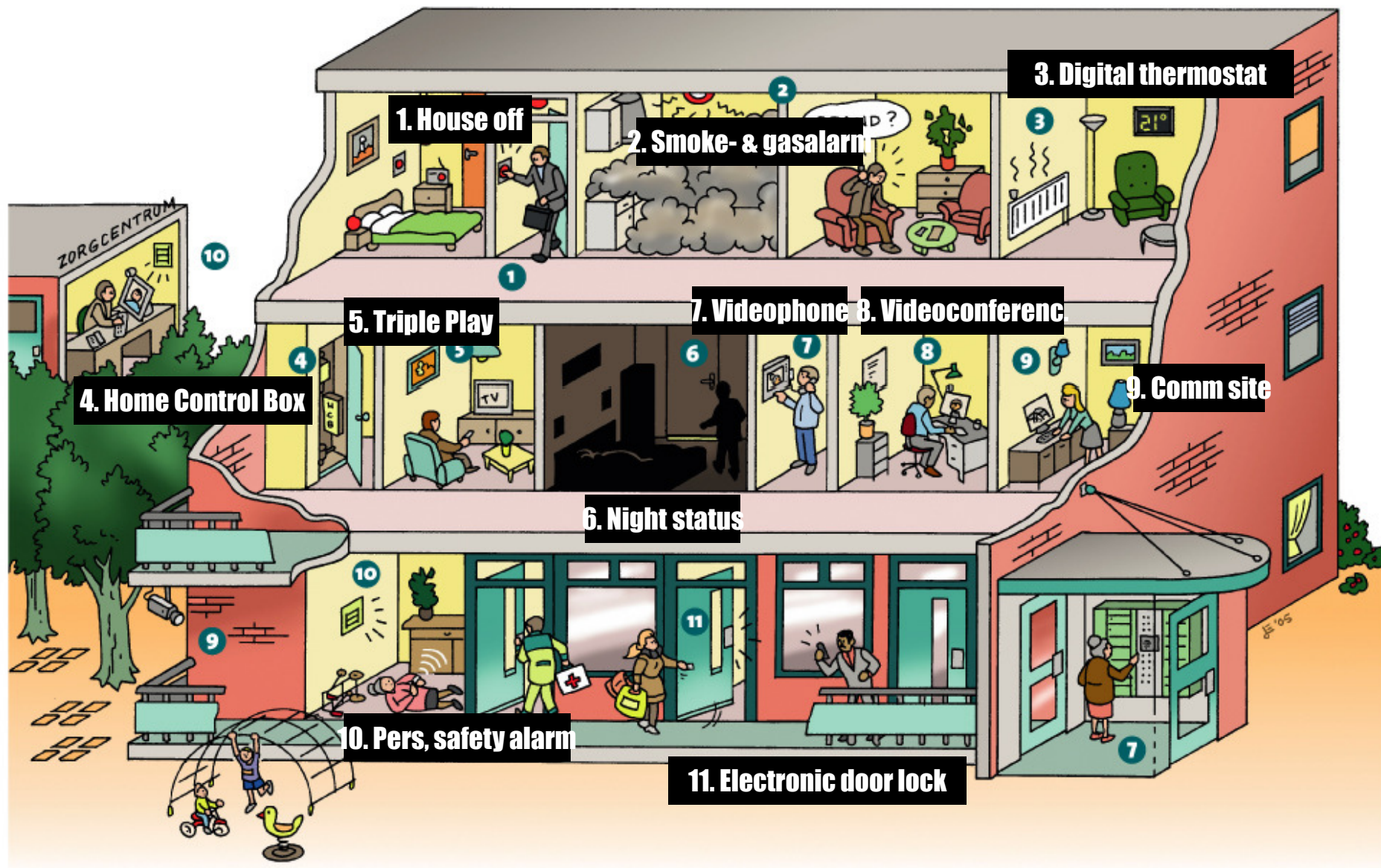
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# How have companies approached the AAL market so far?

- Often in a naive way:
  - Invest a few million euro's (larger companies);
  - Single solutions, which are not killer appl. (SME's)
- Only BtoB, no clue about end user wishes;
- No “buy-in” of care workers;
- Immature systems;
- No flexibility or adaptation;
- Mostly proprietary systems;
- UniversAAL, Continua: never heard of!



# “Ageing well at home” applications in NL



# What has been achieved in NL (7 million houses)?

- For supporting older people in apartment flats:
  - flats with 20 - 60 apartments
  - estimated numbers in NL:
    - 5.000 integrated smart homes for older people (new built)
    - 25.000 apartments with telecare solutions
- More efficiency in home care for older people:
  - 5000 individual houses with screen to screen care
  - 2500 telemonitoring of vital signs
- For comfort, luxury and comfort in high-end houses:
  - 5000 expensive villa's

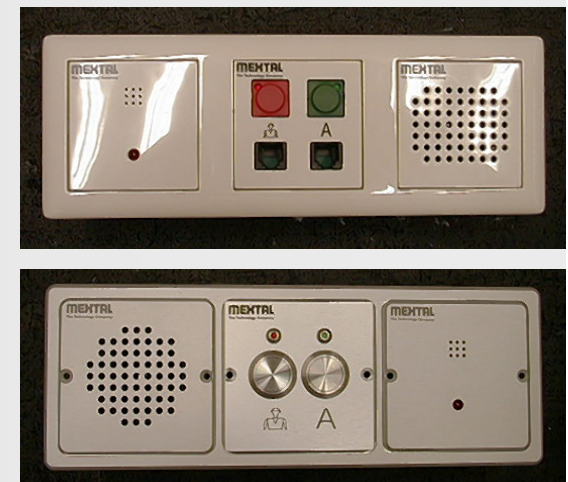


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# What has been achieved in NL (7 million houses)?

- For remote monitoring of (demented) older people in nursing homes and residential apartments:
  - Estimated in NL: 40.000 – 50.000 bed maths, infrared detectors, sound monitoring and camera monitoring
- More efficiency in monitoring (at night) of persons with mental disabilities in small scale group living:
  - 50.000 rooms with sound monitoring (camera's)

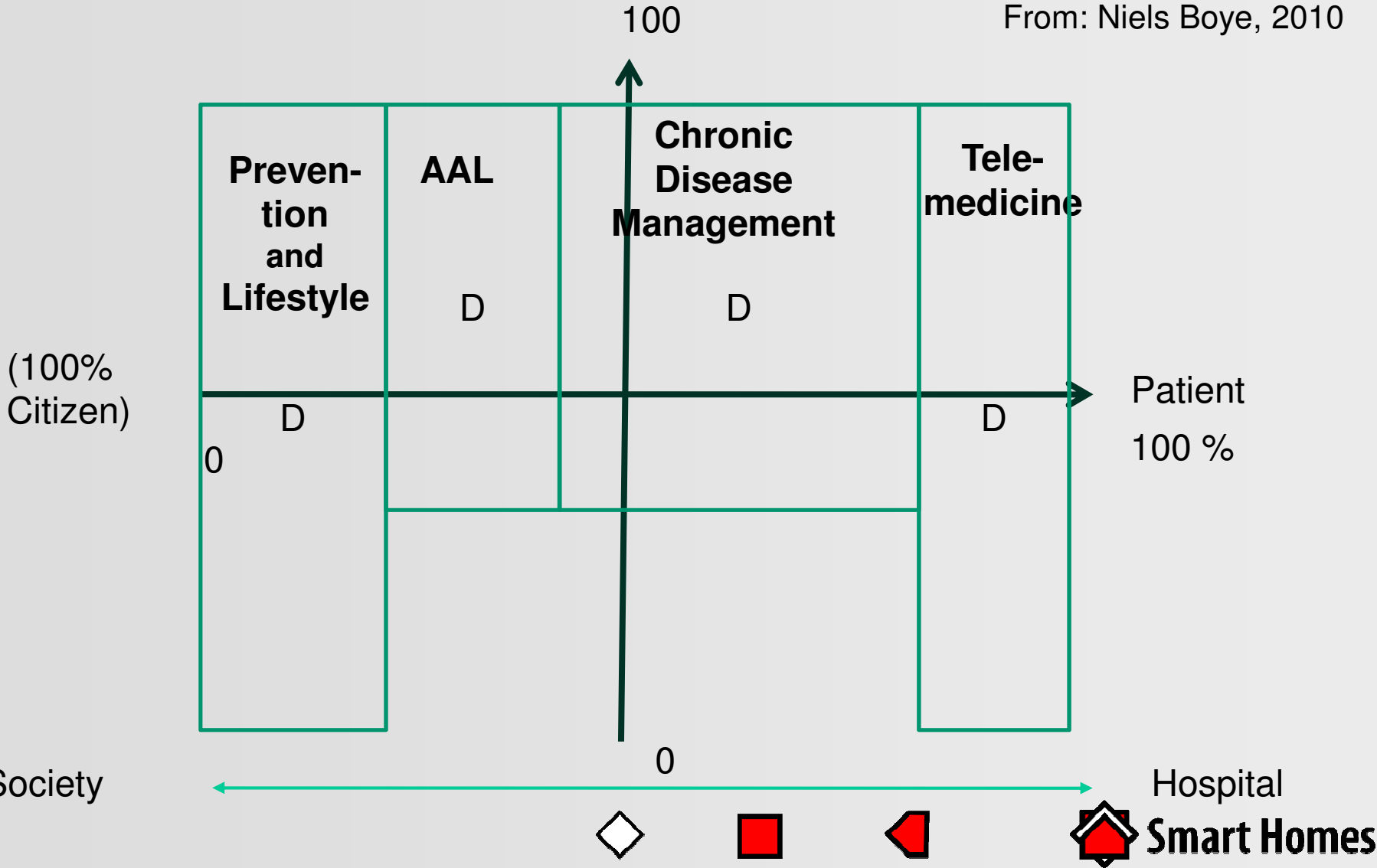




# The Future.....

“Biological age” (“years”)

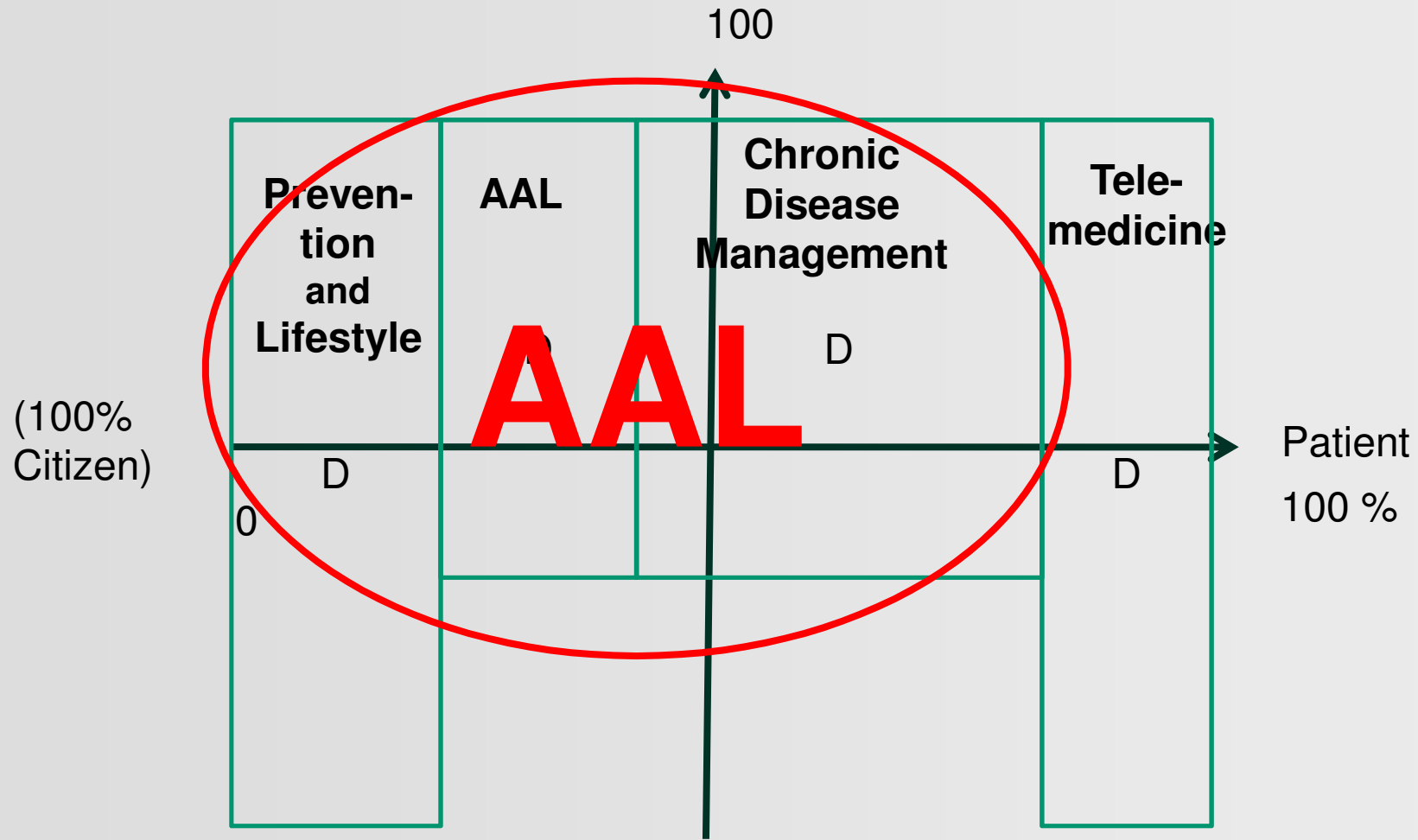
From: Niels Boye, 2010





# The Future.....

“Biological age” (“years”)

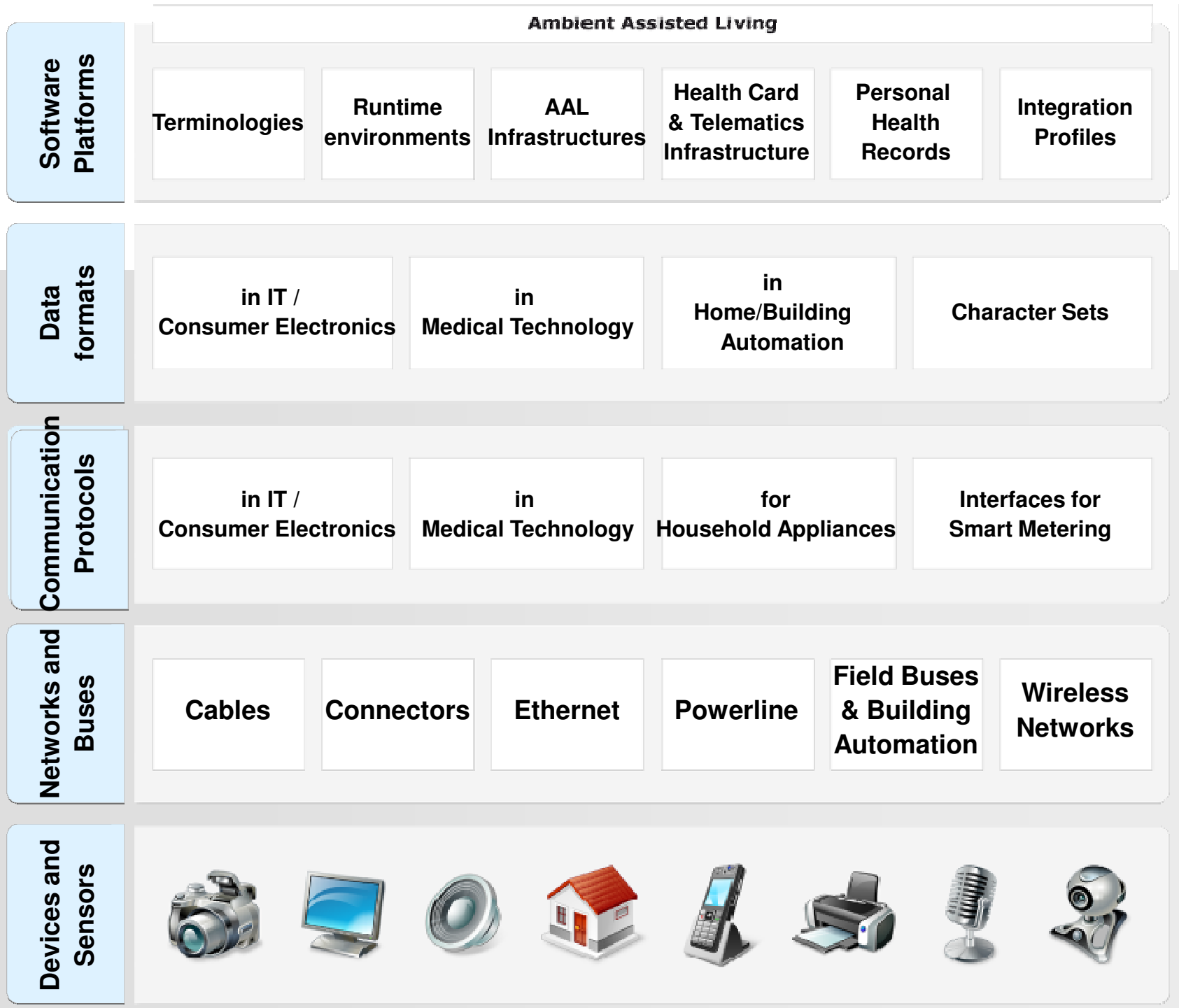


Society

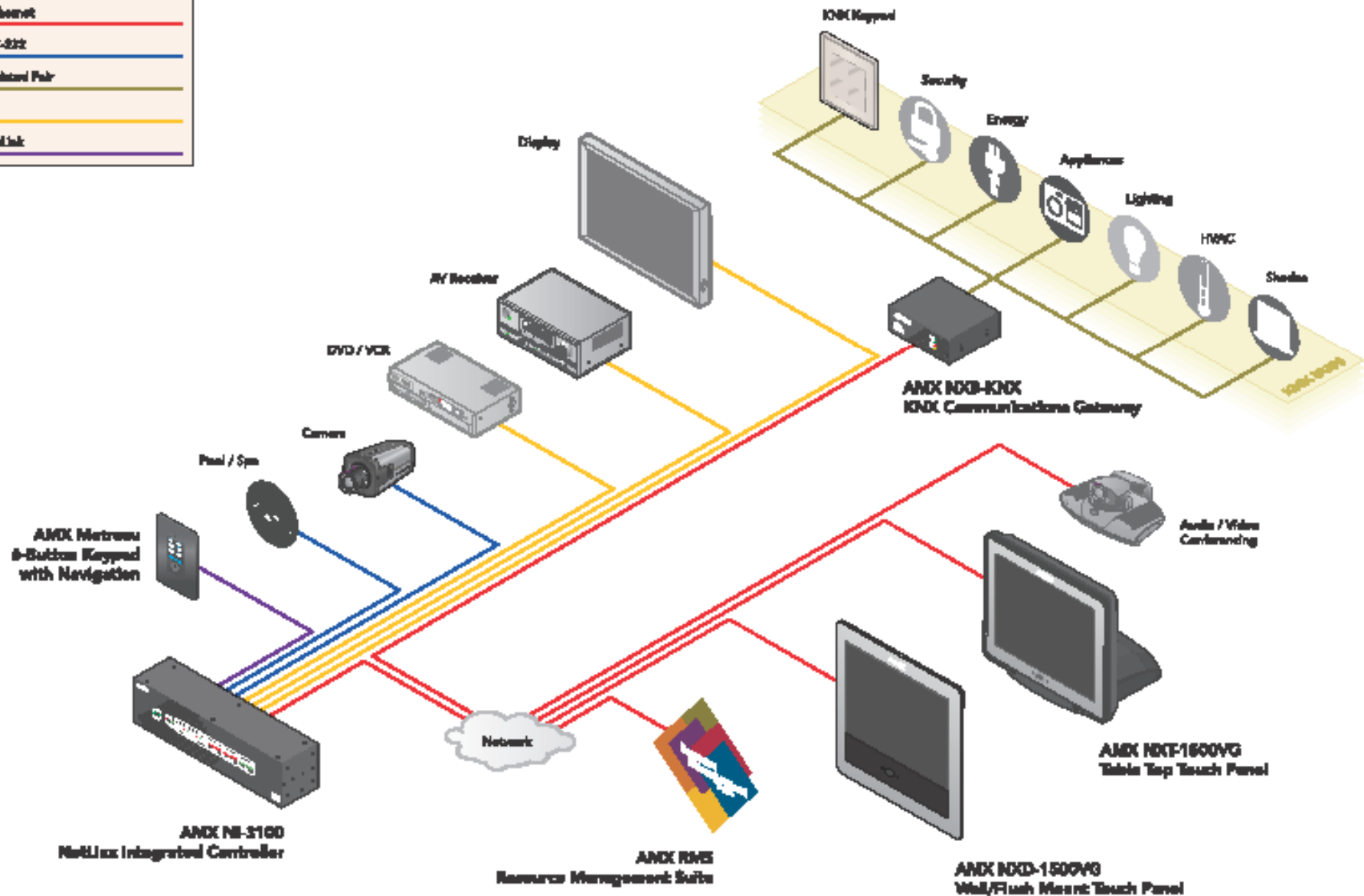


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# Interoperability of AAL System Components



Ethernet	
RS-485	
Twisted Pair	
IR	
Audio	



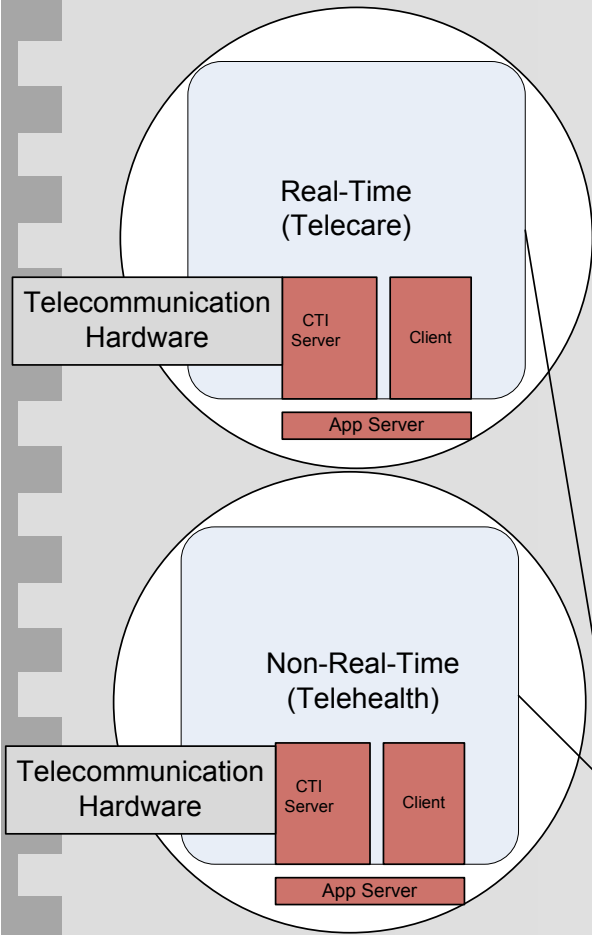
# Example of expensive solution

- **Two basic systems: AMX and KNX**
- **AMX is the computing system, KNX carries out the messages**
- **Single messages, such as switching on lights are directly carried out by KNX**
- **In all rooms several patchable UTP connections, coming together in central technical room**
- **Audio/video managed centrally**
- **Connection to optical fiber, one fixed IP address, port forwarding, etc. is possible**



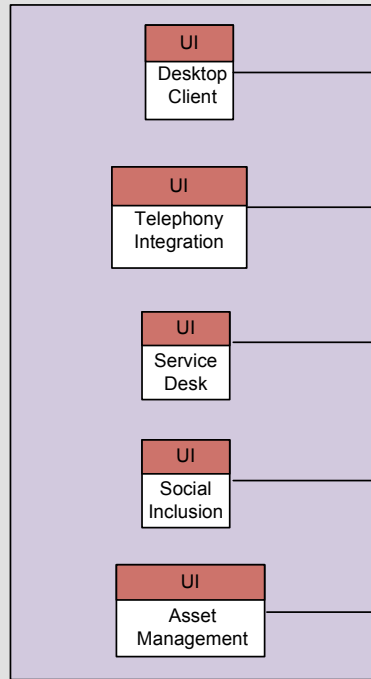
# Target System Architecture

## Safety Critical Devices and Data Acquisition

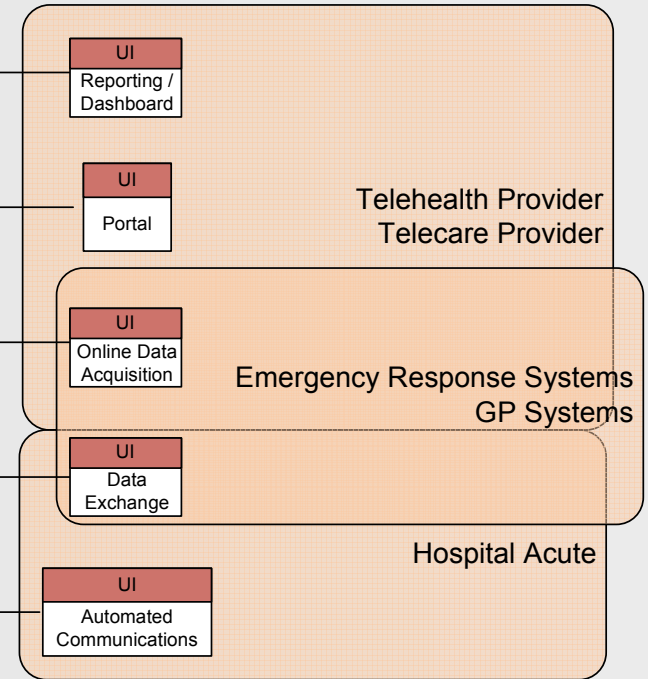


## Data Collation, Manipulation & Communication

### CommonWell Applications



### CommonWell Web Services



- Workflow & Orchestration
- Custom Components/Modules
- Adaptors
- Hardware Components
- Packaged Options
- 3<sup>rd</sup> Party Systems

# Installed base and wishes

- **Many thousands in the Eindhoven region**
  - Monitoring systems in nursing homes, etc.
  - AAL systems for independent living
  - E-health
- **Smartest Region in the World (ICF, 3 June 2011)**
- **But in 5 years we want active citizenship and self management, plus professional support via**
  - ONE monitoring centre for whole region
  - ONE clinical database for all citizens
  - Full exchange of systems of components



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# But,

- Existing SME's are not willing to change to bigger platforms or Continua;
- New SME's need a lot of training and education on standardisation and interoperability;
- Questions on maintainability of bigger platforms, required skills etc.
- Questions on complexity and robustness of new systems;
- No reimbursement of e-health up to 2012.

