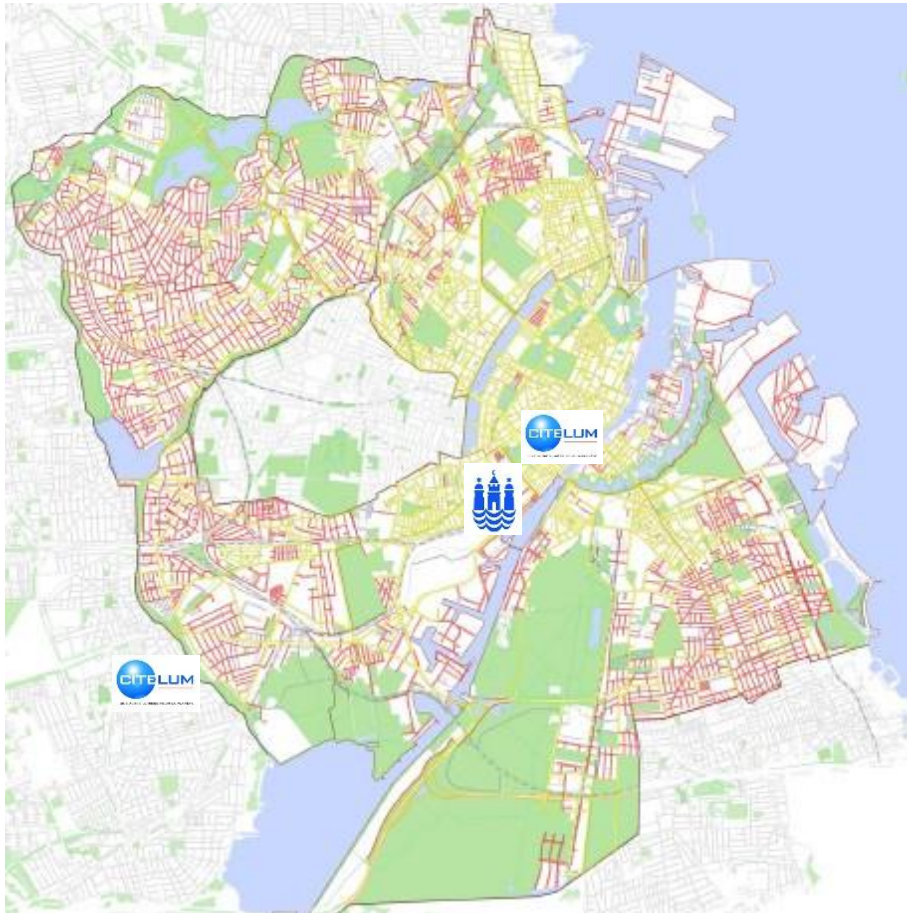


Intelligent Streetlighting and Smart Cities

Kenneth Aastrup

Citelum Denmark Managing Director

ICN Summit



1. CITELUM Group introduction



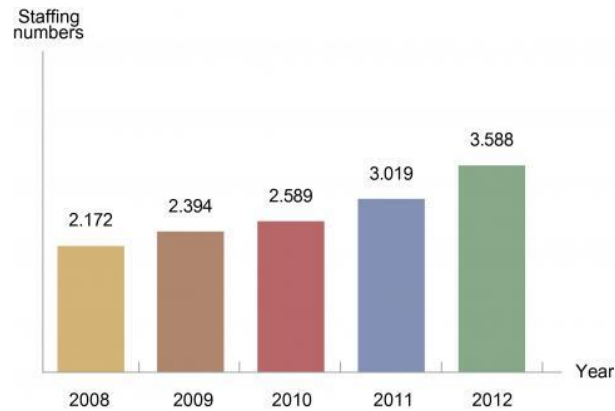
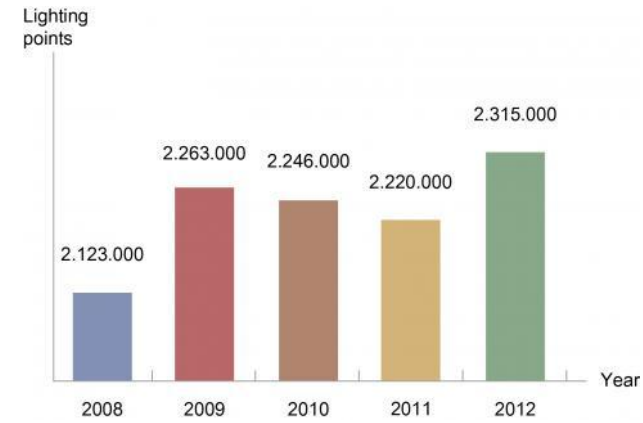
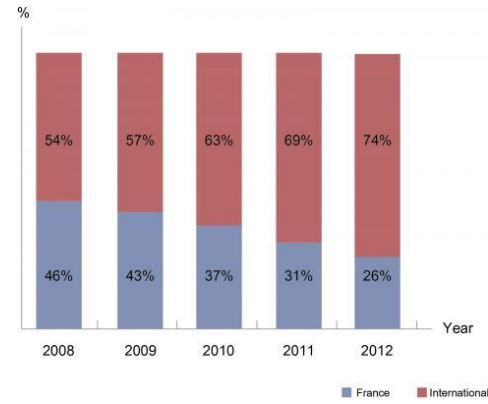
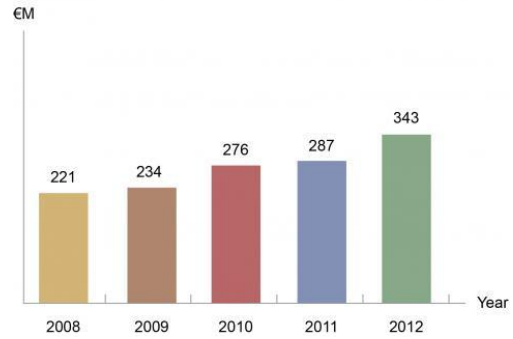
2. Copenhagen Street Lighting with Smart

Cities perspectives

3. Other Cities experiences and possible

collaboration...

Who we are



40 Countries
400 Cities

What is a Smart City?

- Sustainability – Energy efficiency - Green
- Big Data – Smart Mobility – Digital citizenship
- Smart Grid – Smart metering – Smart Buildings – Smart lighting
- Mobile Payment
- Tele Medication
- Electric vehicles
- Smart Growth

This is Applications in a Smart City

What Makes a City Smart?

The ability to collect and use City data for purposes that goes beyond the implemented systems themselves

Smart Streetlighting in Copenhagen

Exchange 20000 luminaires

- Integrated wireless communication
- Individual remote control and surveillance

Remote management

- Asset
- Operation and Maintenance
- KPI

3rd party integration

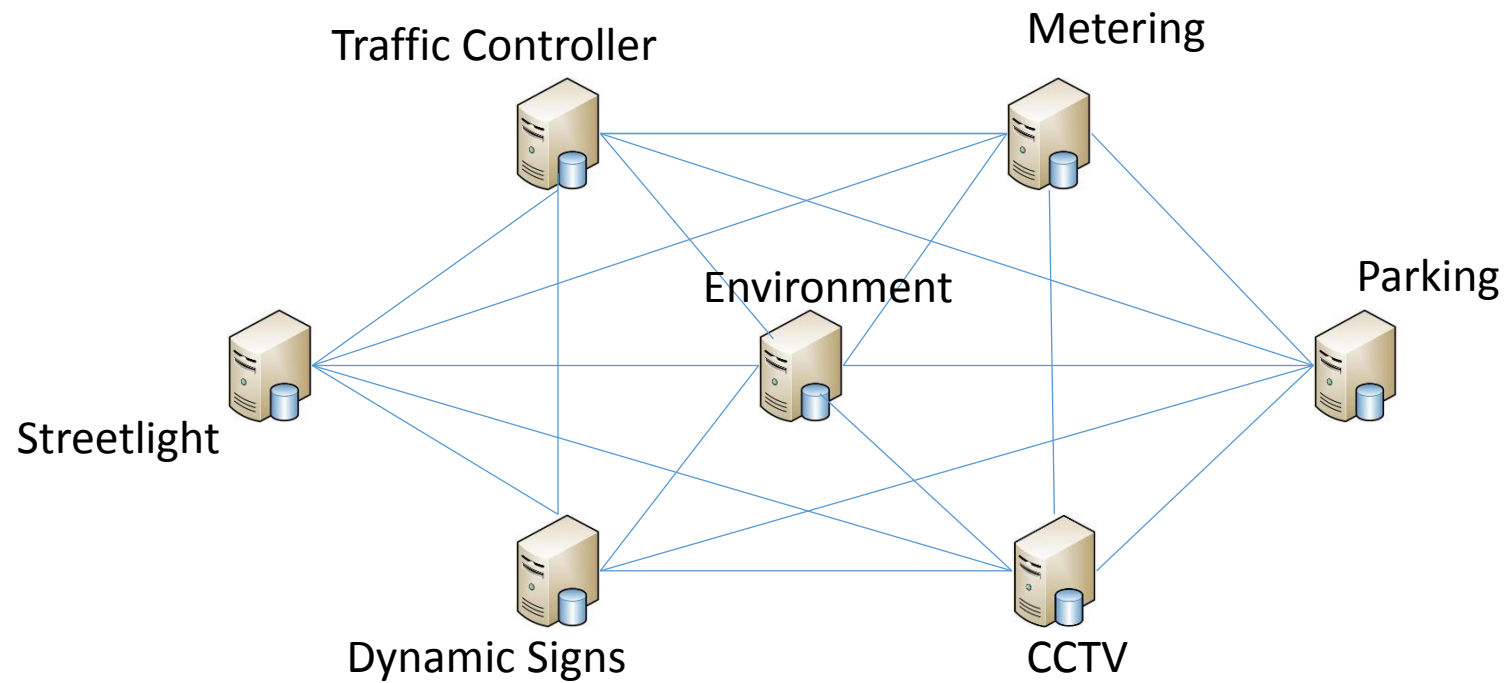
- Intersection with Imtech
- Citilog camera detector



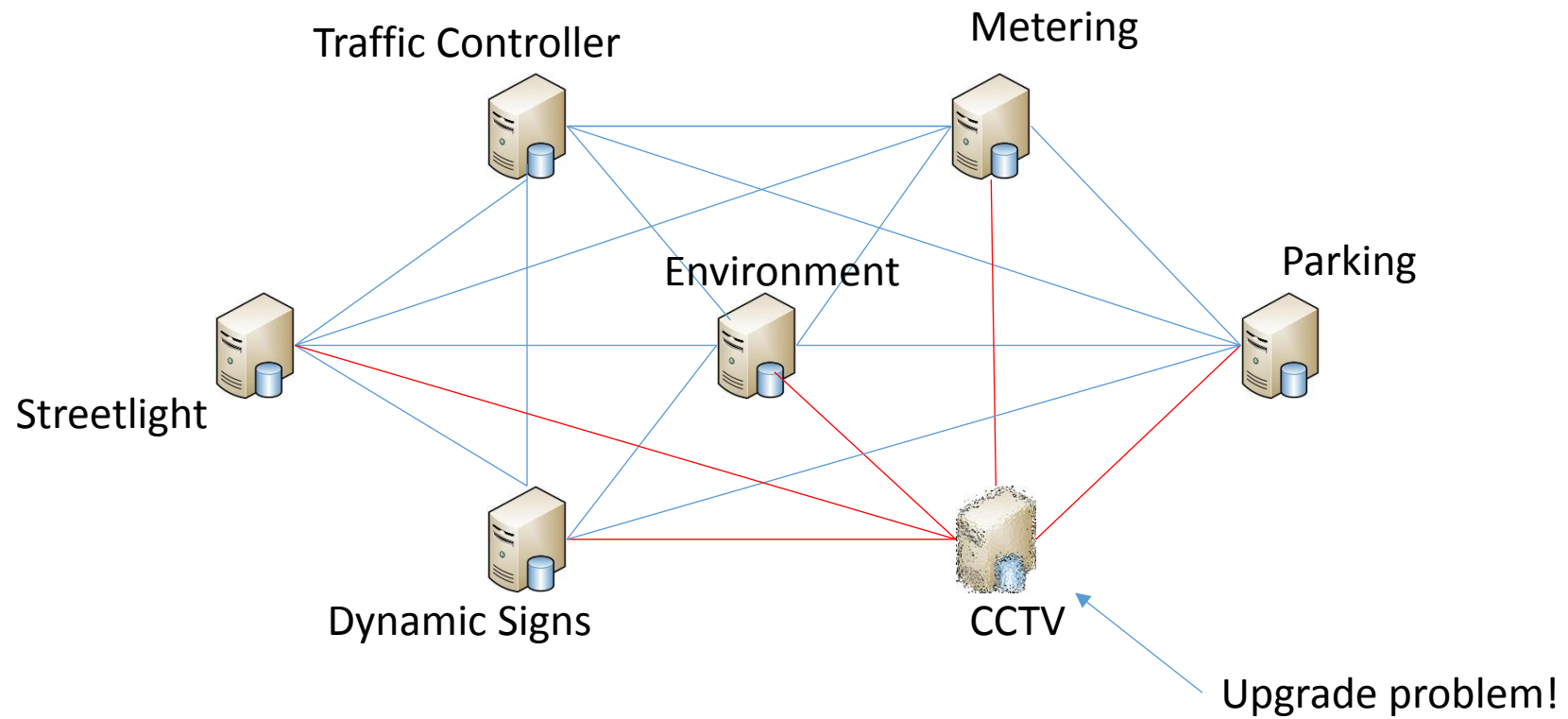
Considerations for Smart City implementation

- Scalability
 - Geographic areas
 - Technologies
 - Communication systems
 - Data Collection
- Architectural
 - Flexibility
 - Avoid system interlock
- Maintenance
 - Different Systems Life Time
 - Split between operational and Logical maintenance

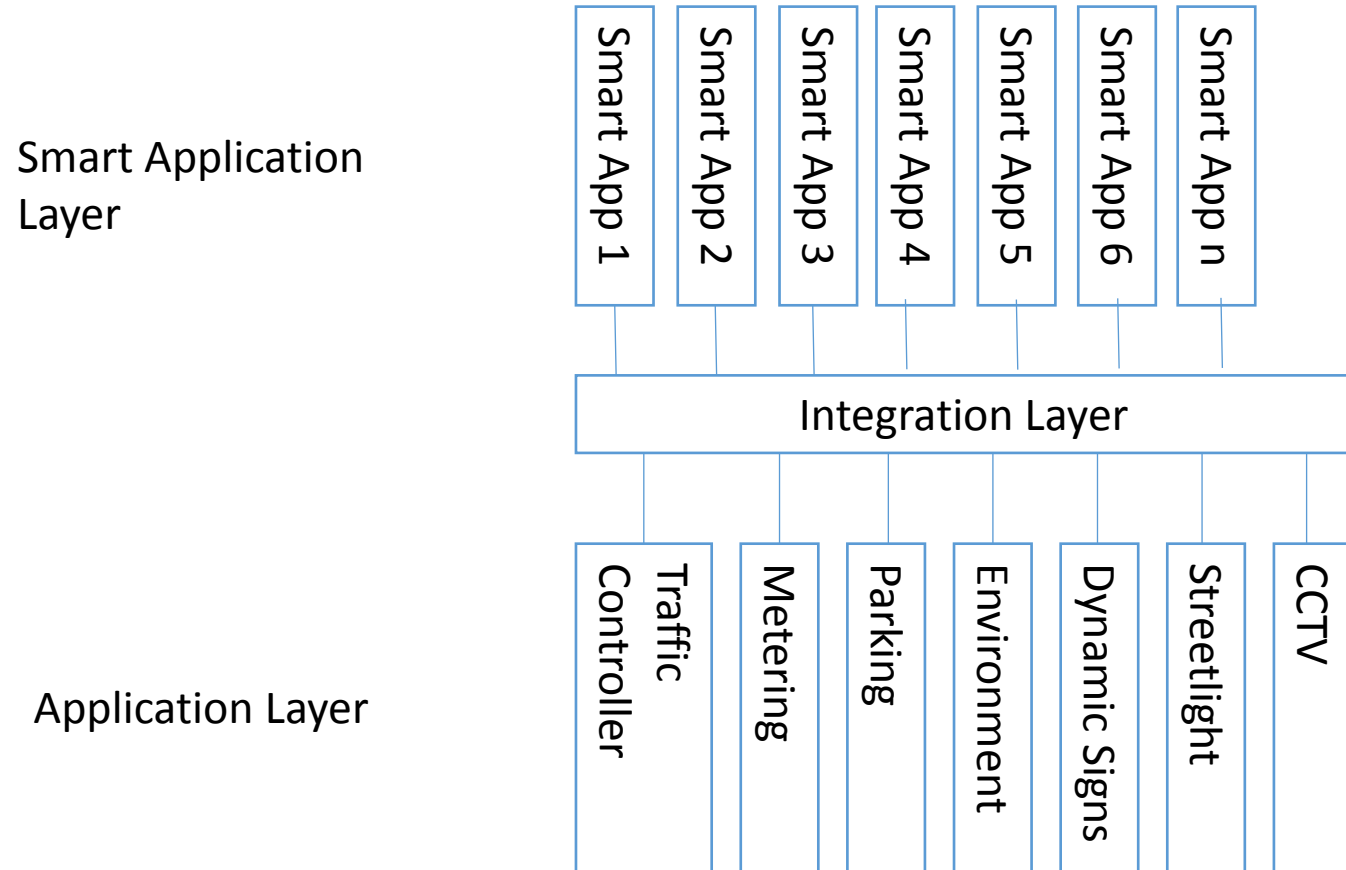
Example of Bad Architecture



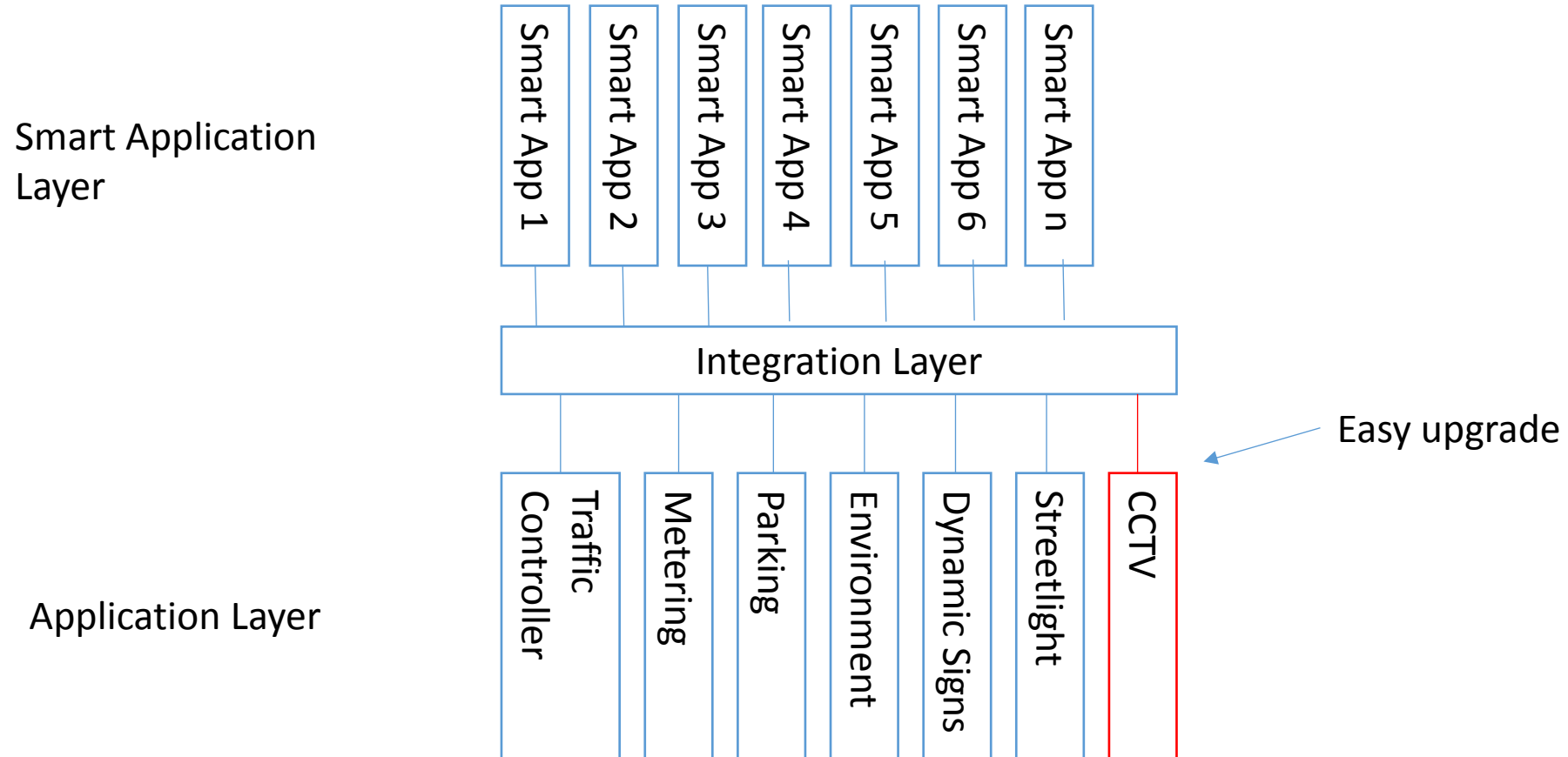
Example of Bad Architecture



Smart Architecture Example



Smart Architecture Example



Maintenance

- Street Maintenance
- Network operation
- Back office systems
- Software maintenance



