



Dr. Amine Berqia



## My Research Focus

- Mobility
- Connectivity
- Quality
- Security

# *New technologies & Smart Cities*



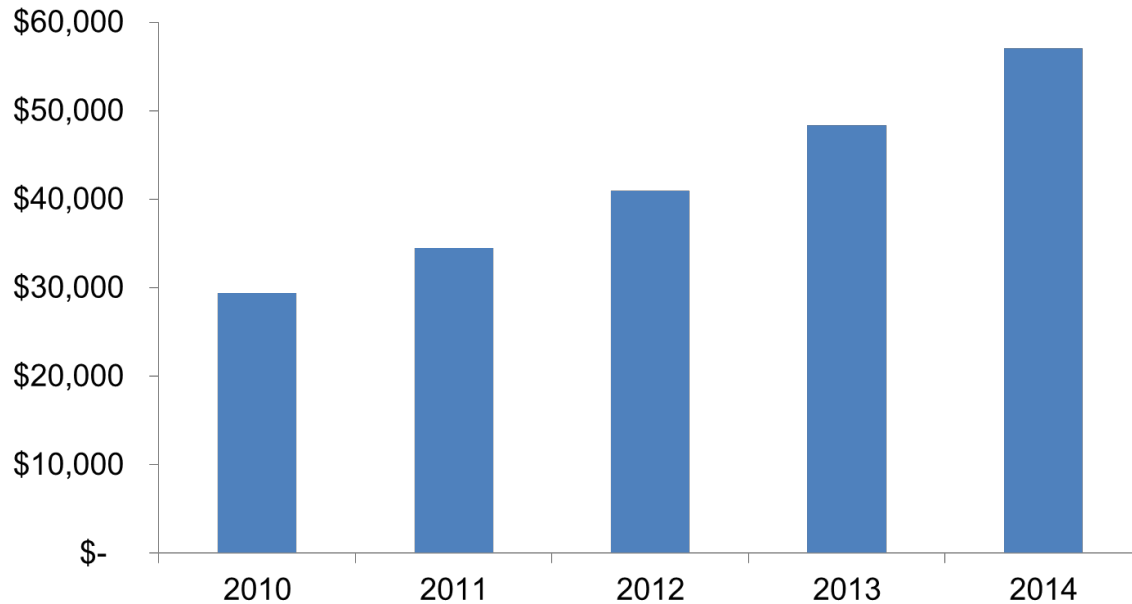
Img Source: [Ref 1]

## Population: urban vs rural

- 50% of the world's population are living in urban areas;
- ~ 60% before 2025;
- Western developed world reaching an 80% urbanization level before 2025;
- Urbanization has become so important that it has elevated some cities to be even more important than the countries themselves.

# Growing Interest

**Worldwide Spending on IT to Support Smart Cities  
\$B**



***\$60.0+ B spending by 2014***

Source - [Ref 4]

# Impact of Transformation

*Within 20 years, a smart and connected city of 5 million can drive*

Improved city management

Continuous Economic Growth

Enhanced Quality of Life

Sustainable Urbanization



*+\$15B  
Revenue*



*+9.5%  
Growth*



*+30% Energy  
Efficiency*



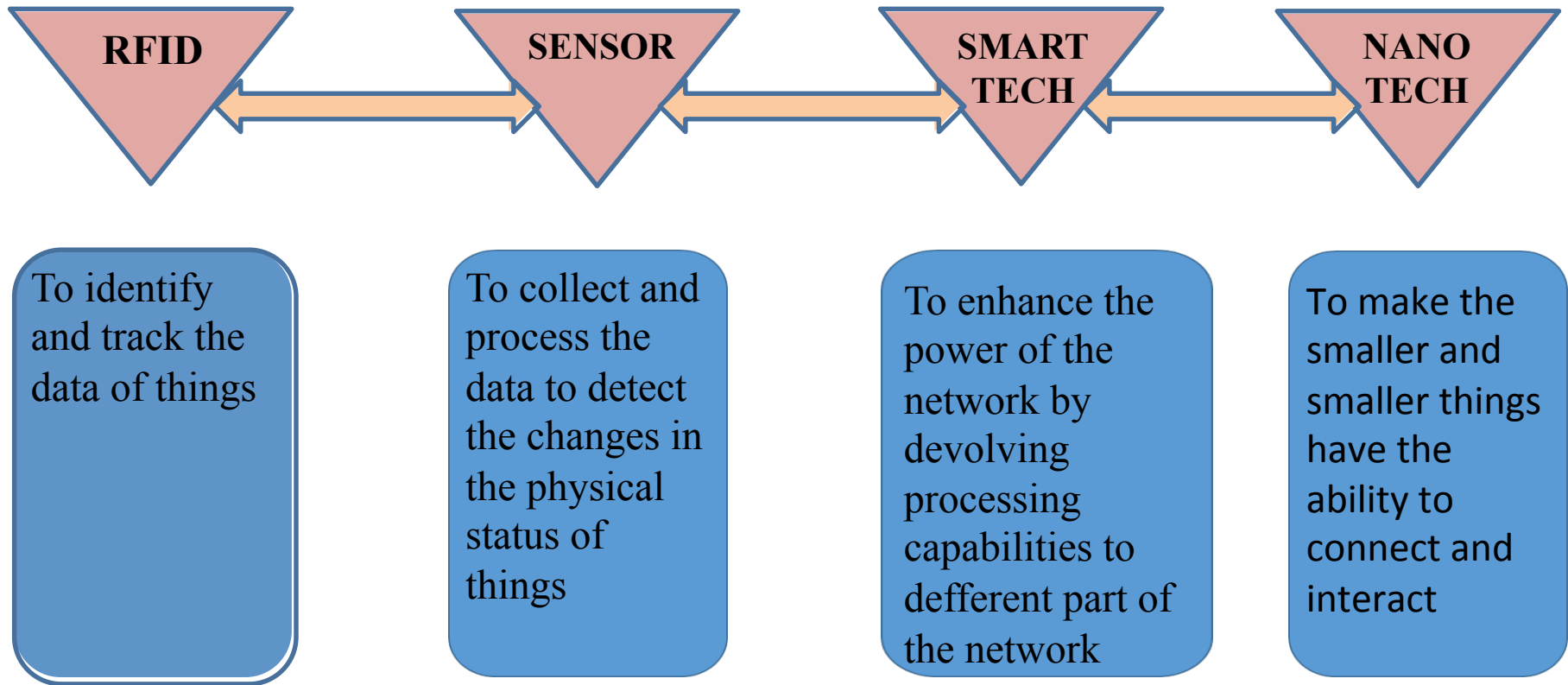
*+375K New  
Jobs*

Source – [Ref 3]

# Combination of Technologies

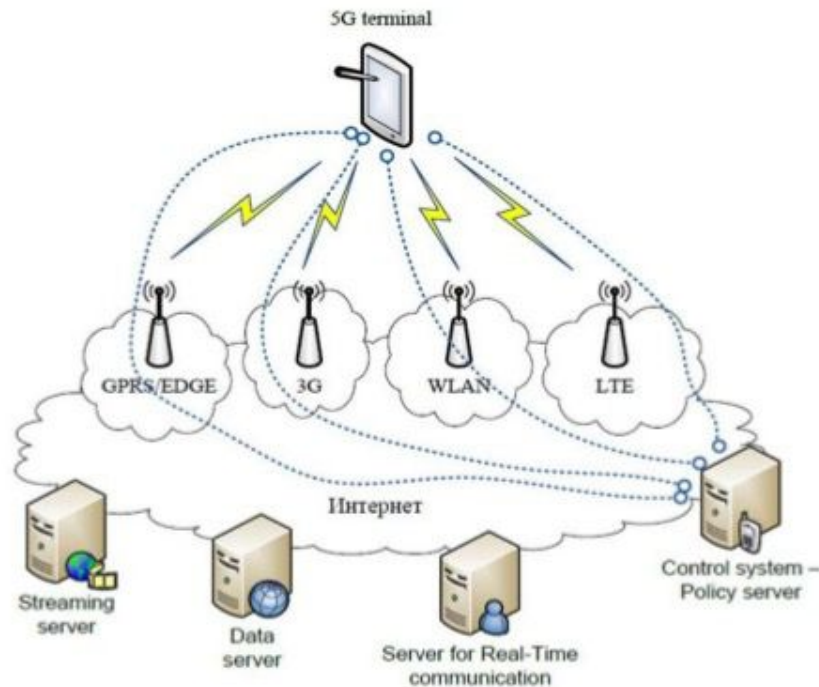
Smart city concept is founded on a set of solutions which are combination of today's technologies





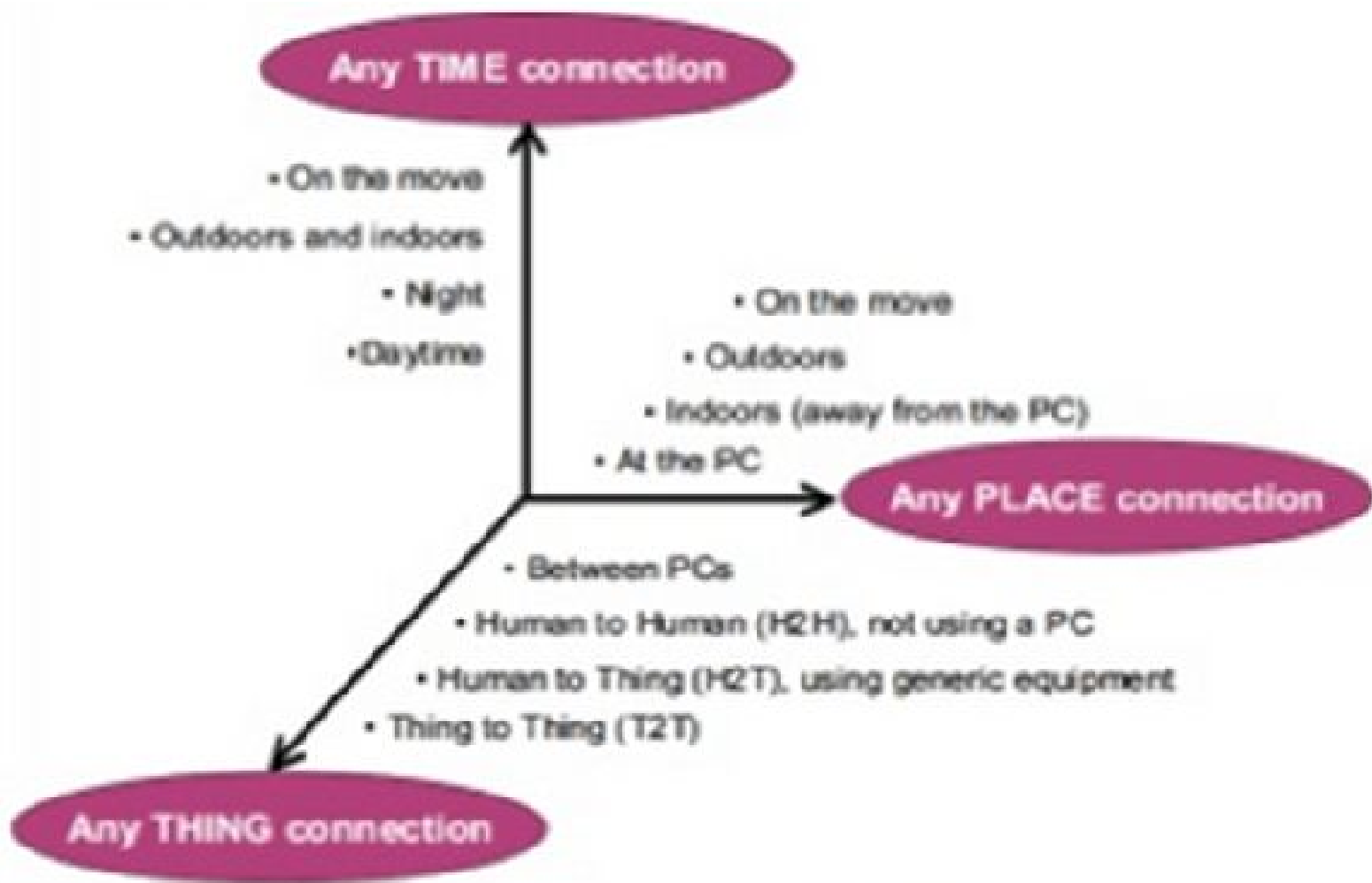
# New Generation Networks

## NETWORK ARCHITECTURE FOR 5G MOBILE

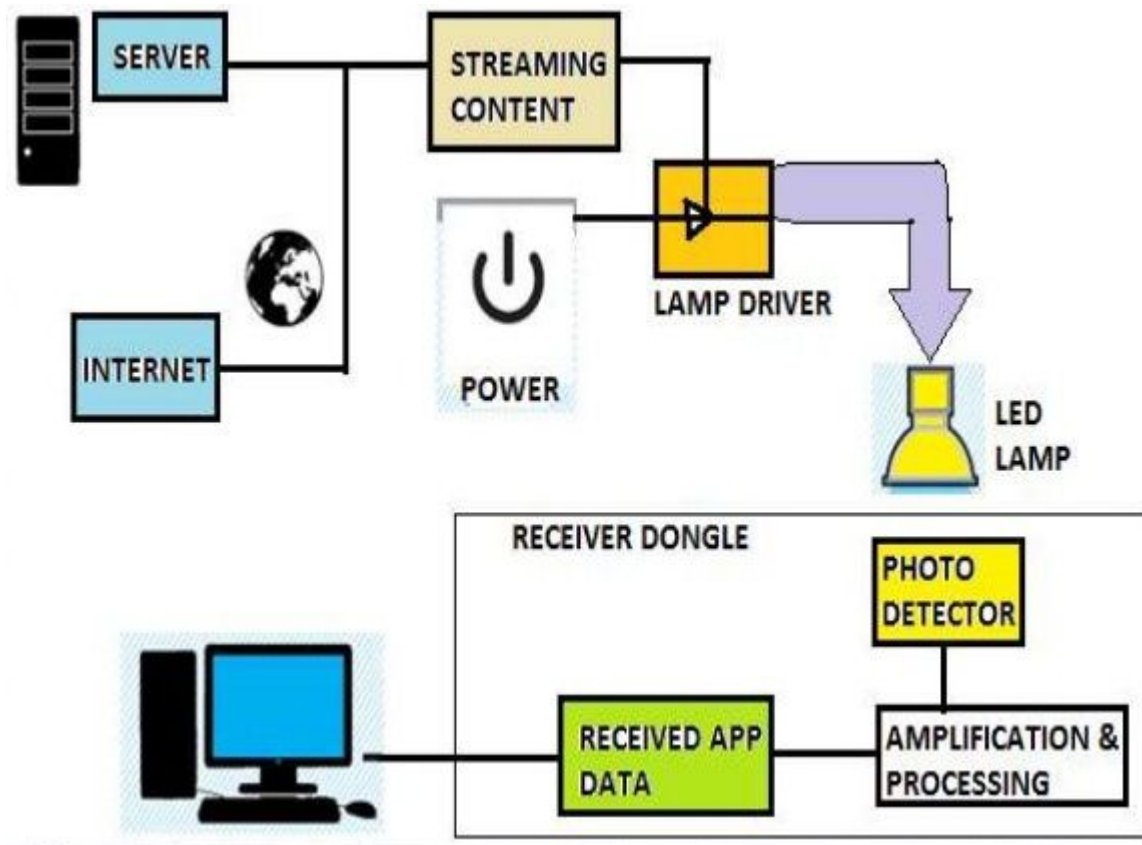


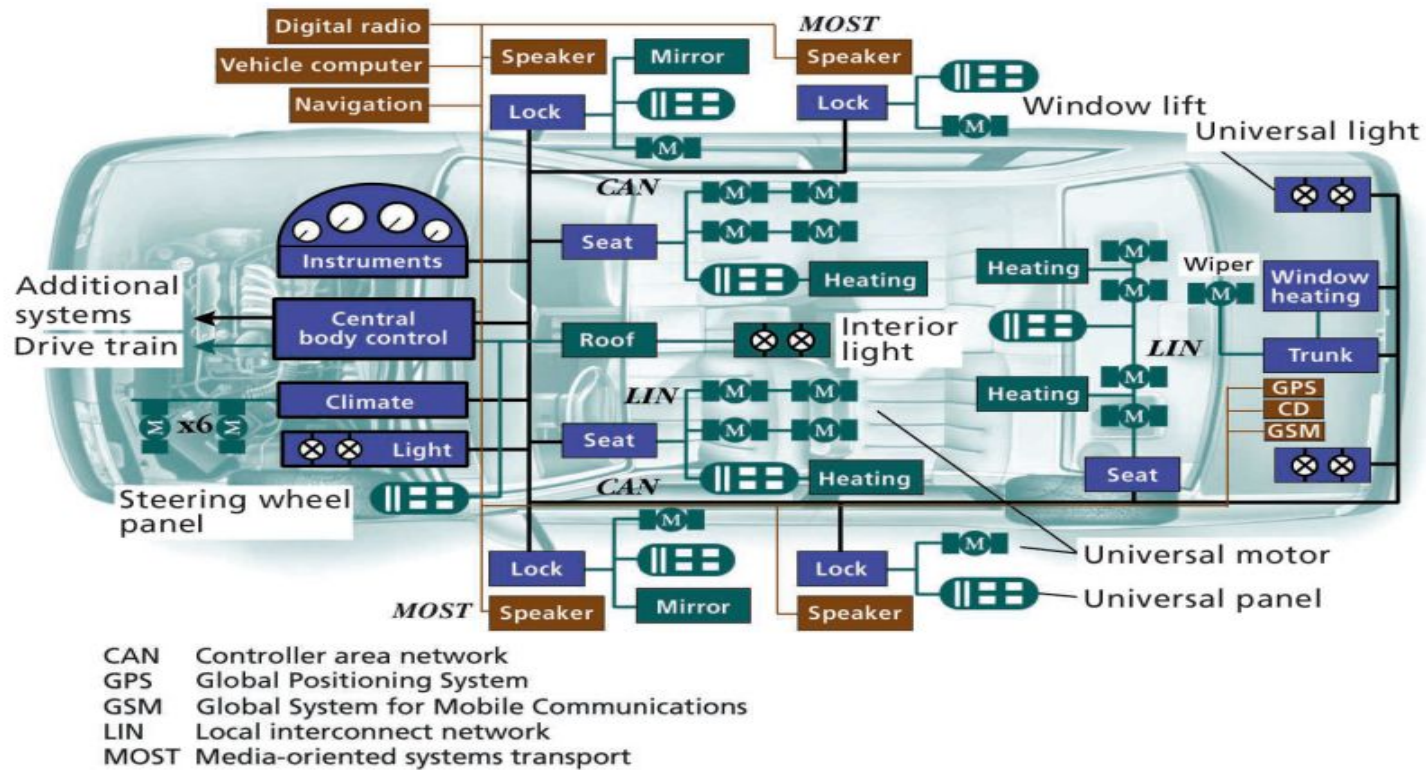


# IoT - IoE



# Li-Fi





## Design of a modern and Intelligence future vehicle

# Sécurité routière 2.0 Project

- VC promises safer roads,



The applications are countless , for example it can contribute to reduce car crashes



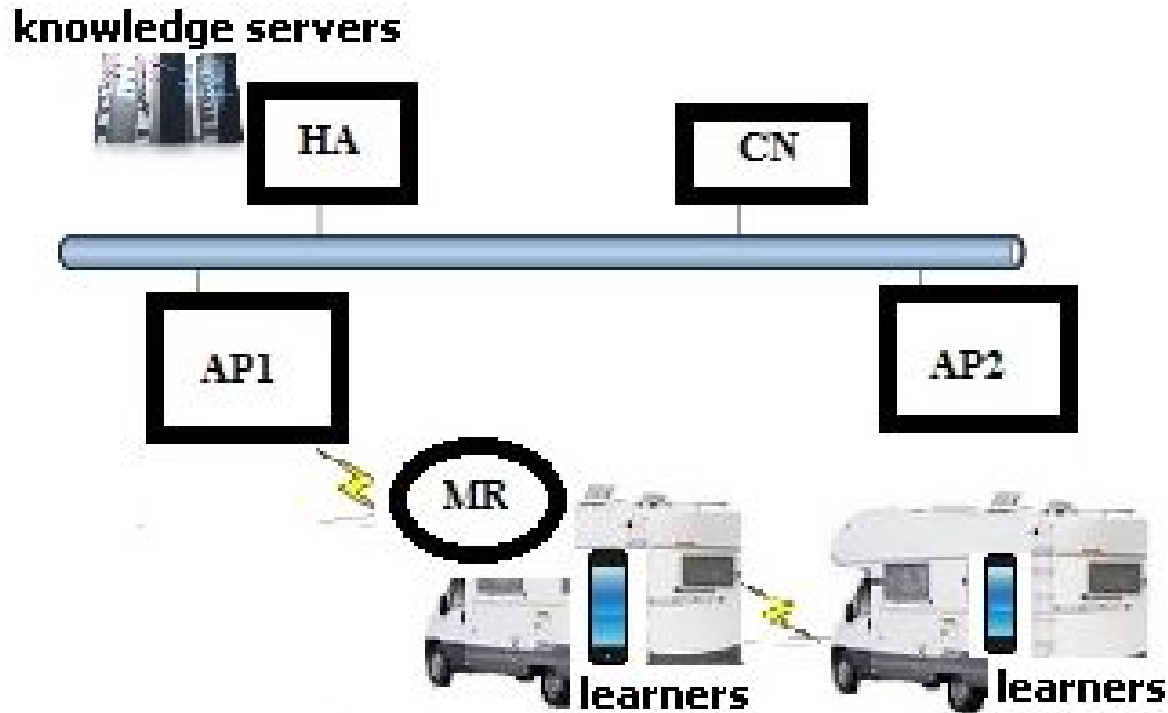
## Intelligent Transport Systems (ITS)

# Aquaculture



**Zigbee UWSN**

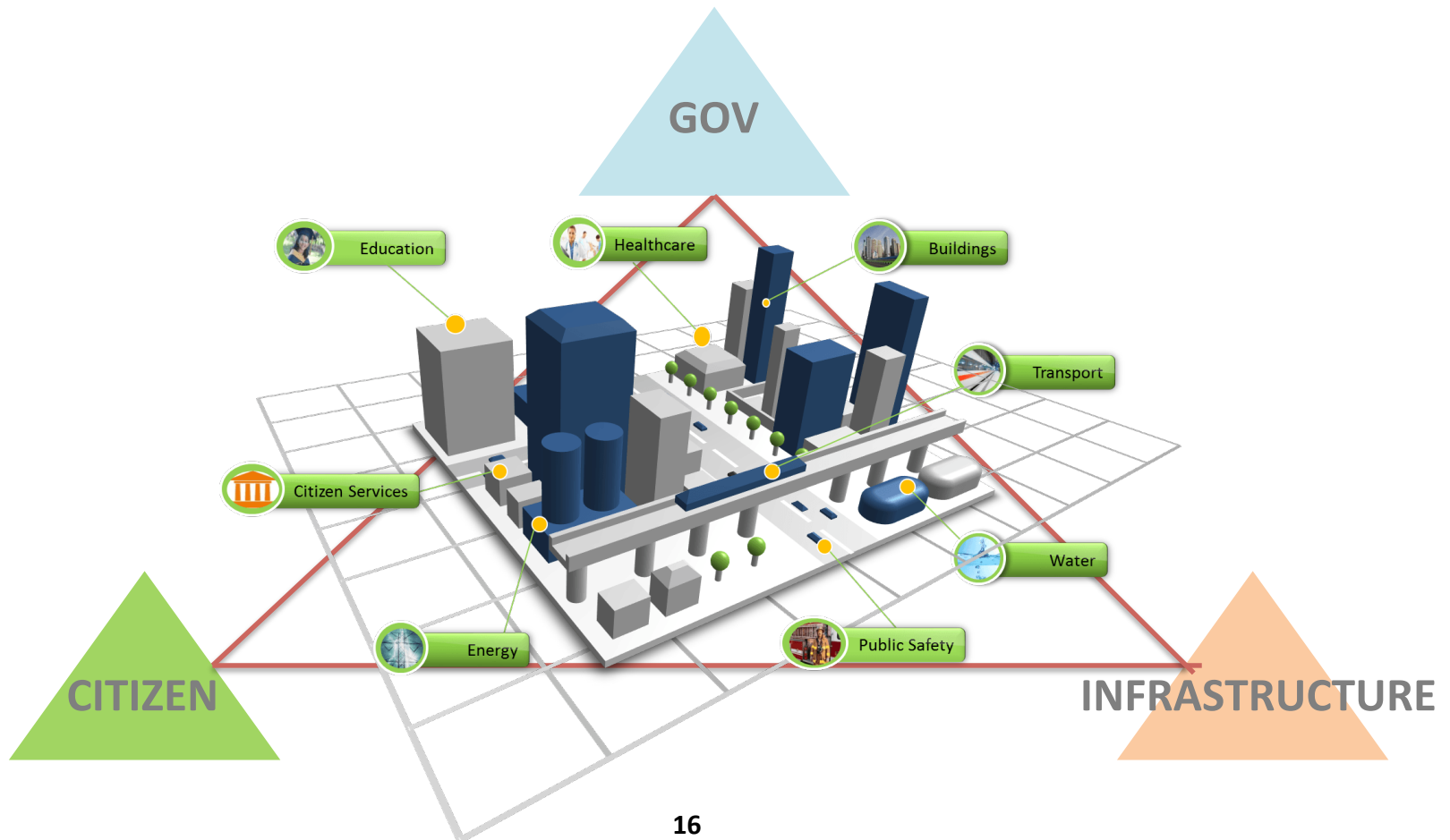
# V-learning



"V-Learning: Vanets for Social and Mobile Learning", The International Conference on Advanced Wireless, Information, and Communication Technologies (AWICT 2015), Elsevier.

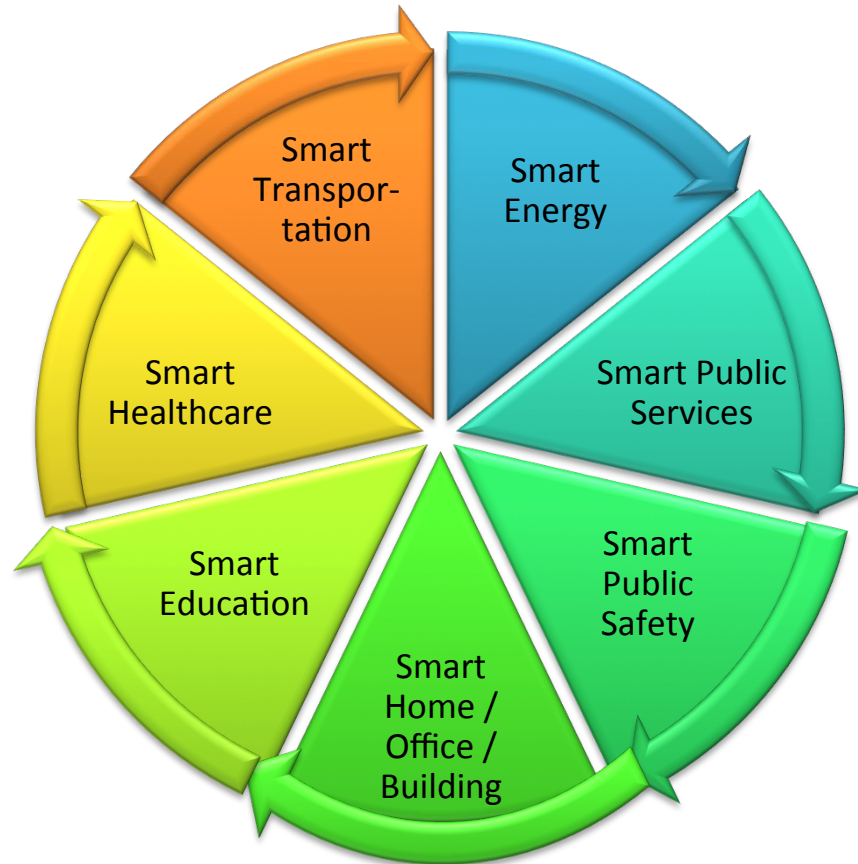
# Transformation of Cities

Transformation is possible by harmonic integration of «infrastructure», «citizen» and «administration»





# Smart City



touches and transforms our cities from end to end

Questions?

*“Questions are guaranteed  
in life; answers aren't”*

# References

**[Ref 1]**

**<http://www.enterrasolutions.com/2015/09/smart-cities-begin-with-connectivity.html>**

**[Ref 2]**

**Amado de Jesus, “Connectivity the secret of smart cities,” Inquirer.net, 8 August 2015.**

**[Ref 3]**

**[http://newsroom.cisco.com/dlls/2008/ekits/or\\_Executive\\_Summary\\_CUD.pdf?...](http://newsroom.cisco.com/dlls/2008/ekits/or_Executive_Summary_CUD.pdf?...)**

**[Ref 4]**

**[https://www.cisco.com/web/strategy/docs/scc/  
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