

# Smart City Architectural Metamodel



Viviana Bastidas, Dr. Markus Helfert, Dr. Marija Bezbradica

Viviana.BastidasMelo@lero.ie, Markus.Helfert@lero.ie, Marija.Bezbradica@lero.ie

## 1 Motivation and Objectives

- Which are the elements of **smart services**?
- Which are the **Archimate** components related to smart services features?
- How to measure the **alignment** between smart services and **information** elements?

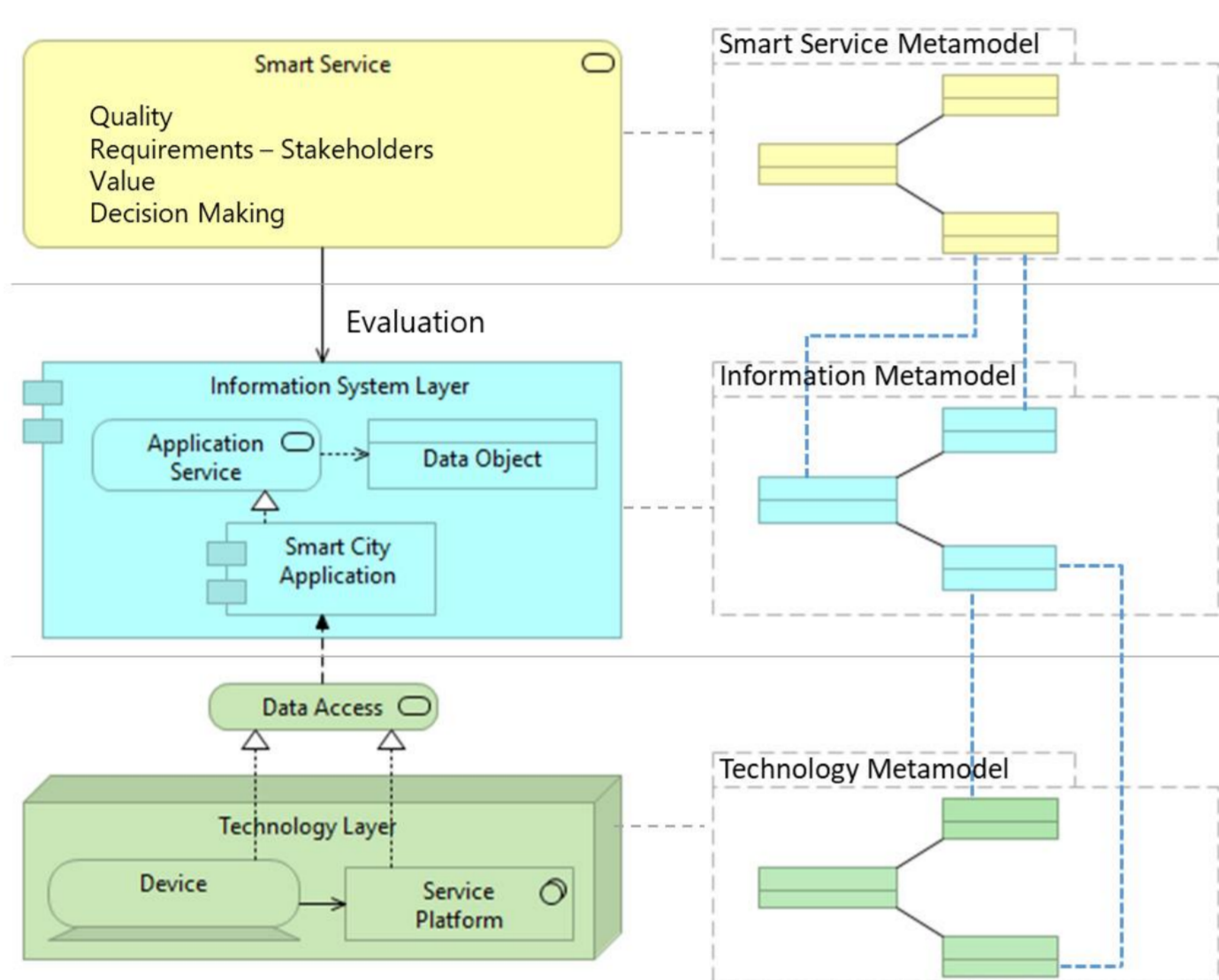


Fig 1: Smart Service Elements - Metamodel

- Model architectural views using Archimate

## 2 Results and Impact

- Design of architectural diagrams of smart services in Limerick City & County Council

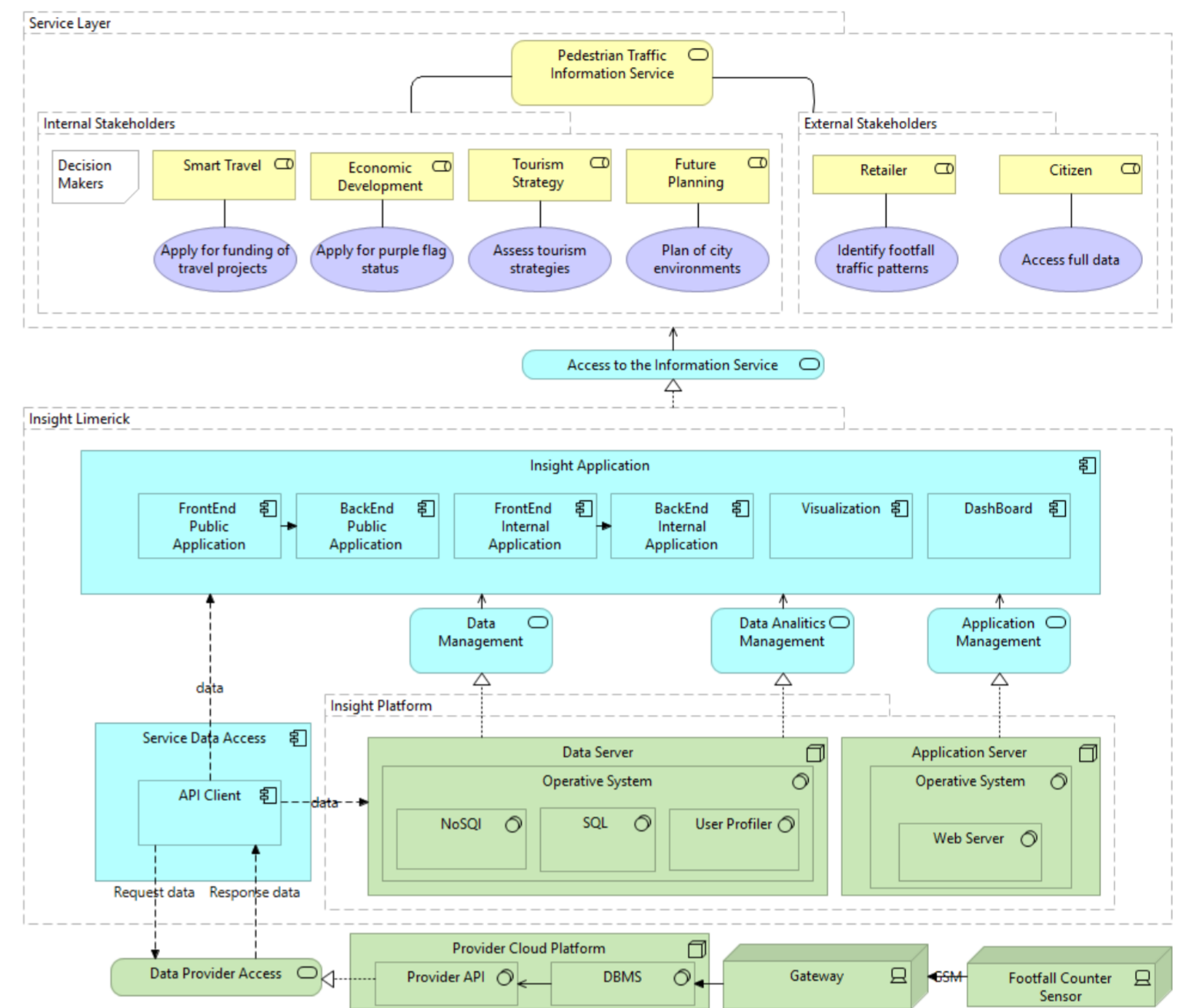


Fig 2: Service Architecture - Example

- A comparison of Smart City Frameworks and Archimate **Metamodel**
- A **requirements** framework for the **design** of smart city reference architectures

## 3 Methodology and Evaluation

- Case study (Limerick City & County Council) to explore and identify the connection between service, information and technology layers

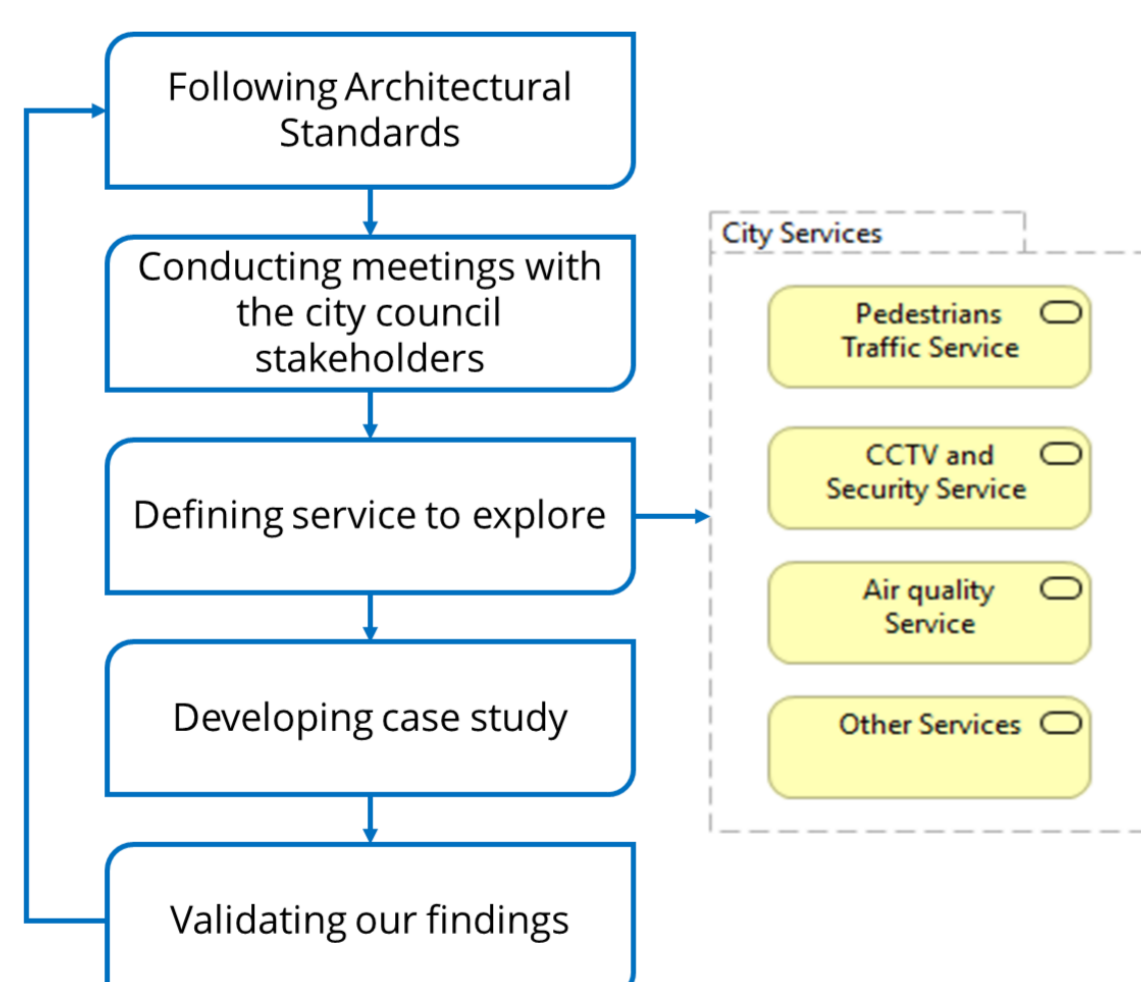


Fig 3: Methodology and Evaluation

### Architectural Standards

- Include aspects from Architecture standards such as **IEEE (1471)**, **ISO/IEC (42010)** and Enterprise Architecture

## 4 Future Work

- Defining relations between **services** and **information**. (Metamodel elements)

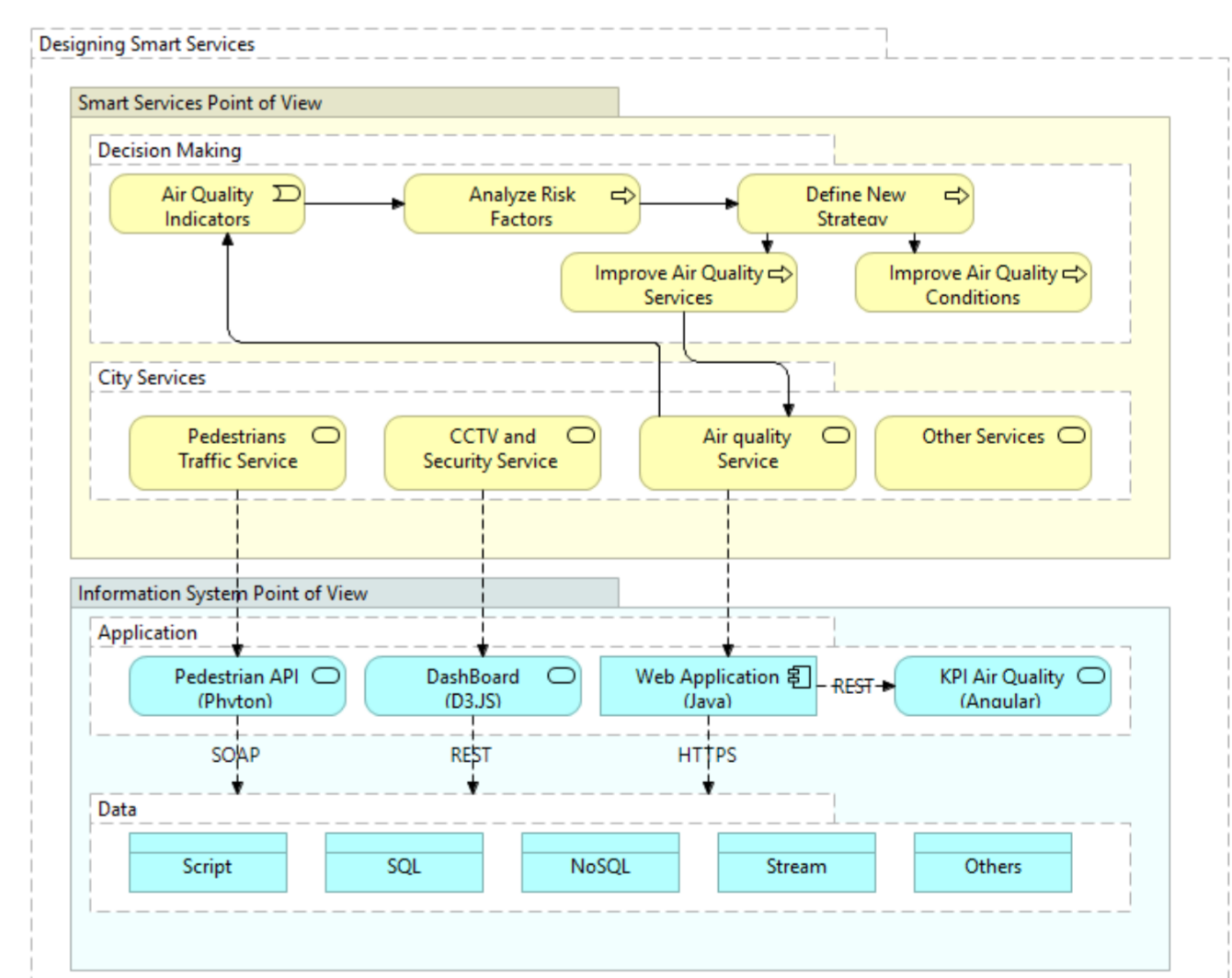


Fig 4: Smart Services and Information Layer - Example

- Analyzing the design approaches of smart city reference architectures.

### References

Bastidas, Viviana, Marija Bezbradica, and Markus Helfert. "Cities as Enterprises: A Comparison of Smart City Frameworks Based on Enterprise Architecture Requirements." International Conference on Smart Cities. Springer, Cham, 2017.  
 Mamkaitis, Aleksas, Marija Bezbradica, and Markus Helfert. "Urban enterprise: a review of smart city frameworks from an Enterprise Architecture perspective." Smart Cities Conference (ISC2), 2016 IEEE International. IEEE, 2016.