
An infrastructure model for smart cities based on big data

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Abstract:

Keywords:

Reference

Int. J. Grid and Utility Computing

Biographical notes:

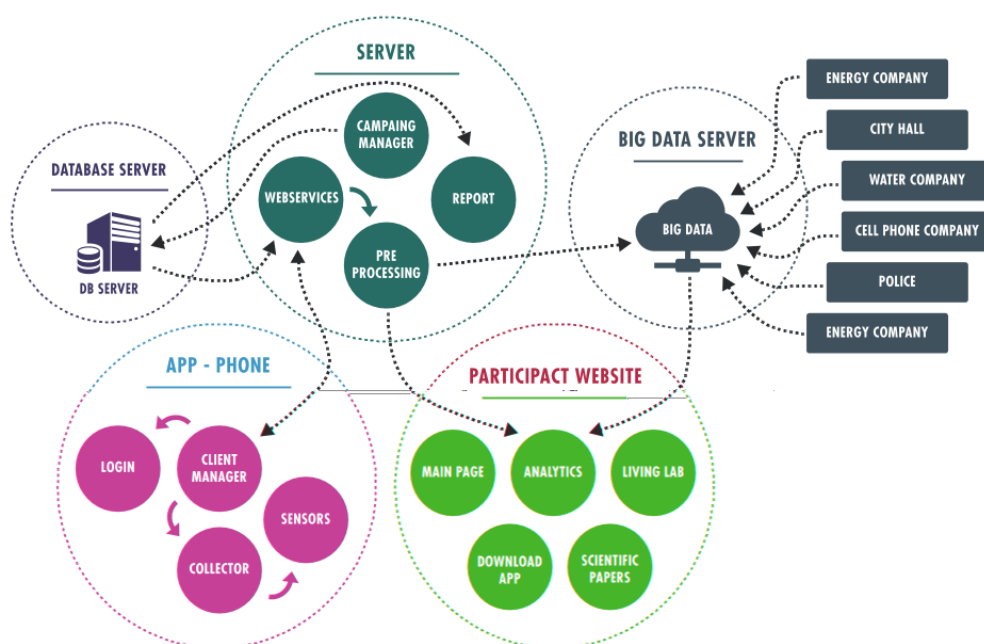
This paper is a revised and expanded version of a paper entitled 'Towards an Infrastructure to Support Big Data for a Smart City Project' presented at the '25th IEEE International Conference on Enabling Technologies: Infrastructure for Collaborative Enterprises', Paris, June 2016.

1 Introduction

2.1 ParticipACT Brazil

2 ParticipACT project

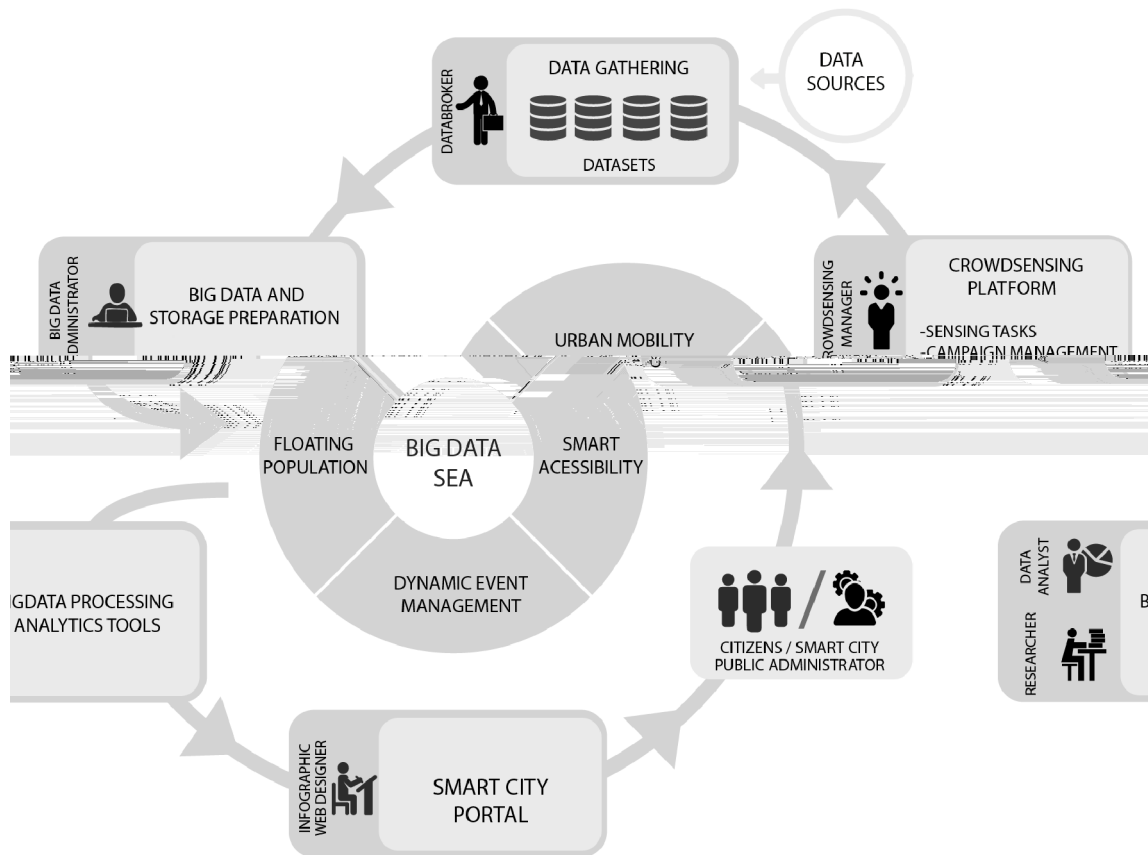
Figure 1



An infrastructure model for smart cities based on big data

- *Big Data*
- *Crowdsensing*
- *Website*

Figure 2



3 Related works

- *Big Data Administrator*
- *Data Analyst*
- *Researcher*
- *Web Designer*
- *Citizens*
- *Public Administrator*
- *Crowdsensing Manager*
- *Urban Mobility*
- *Floating Population*
- *Dynamic Event Management*
- *Smart Accessibility*

Data Source

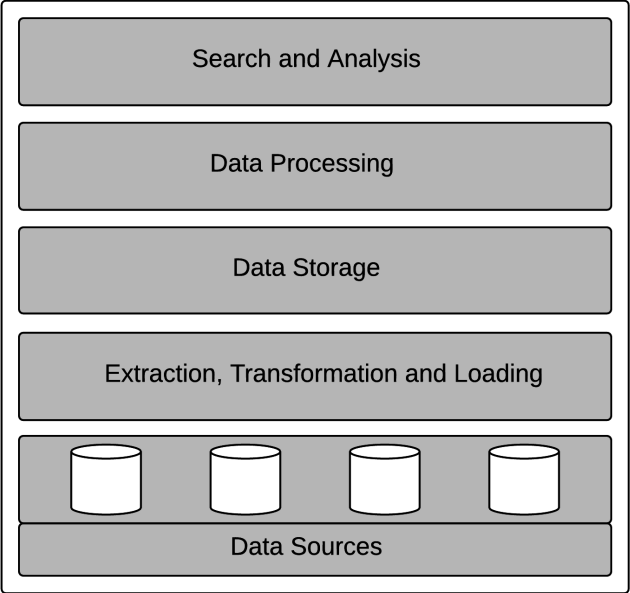
Data Warehouse

OLAP Server

Tools

Analysis

Figure 3

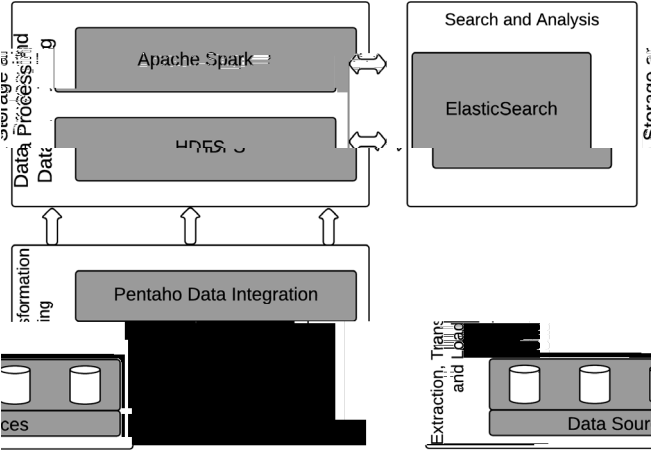


4 Proposed model

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-
-
-
-

5 Elements of the architecture

Figure 4

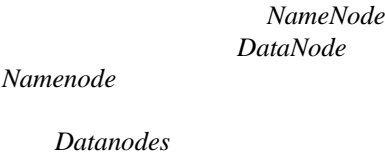


- Pentaho Data Integration

6 Experimental results

6.1 Case study

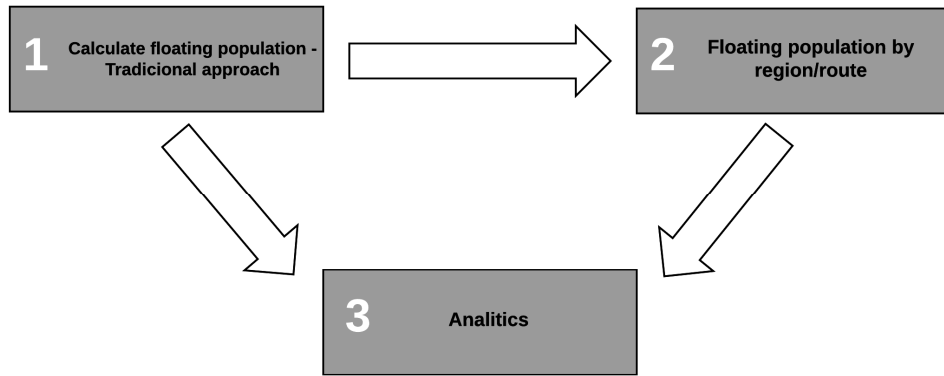
- HDFS



- Apache Spark

- Elasticsearch

Figure 5

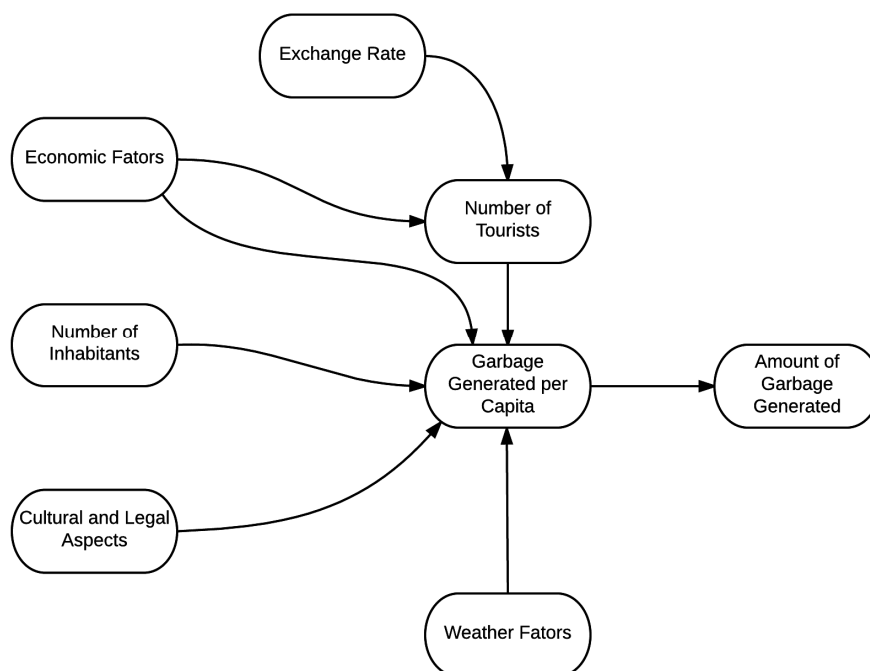


- *Traditional analyses*

- *Analyses using big data correlations*

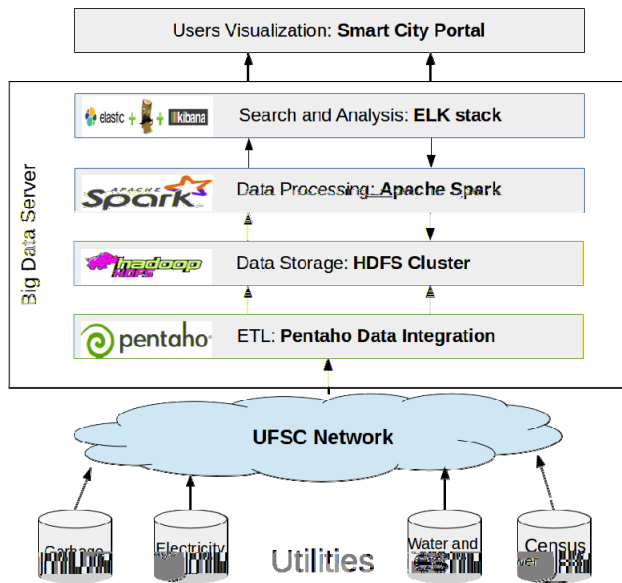
- *Population by region/route*

Figure 6



6.2 Implementation

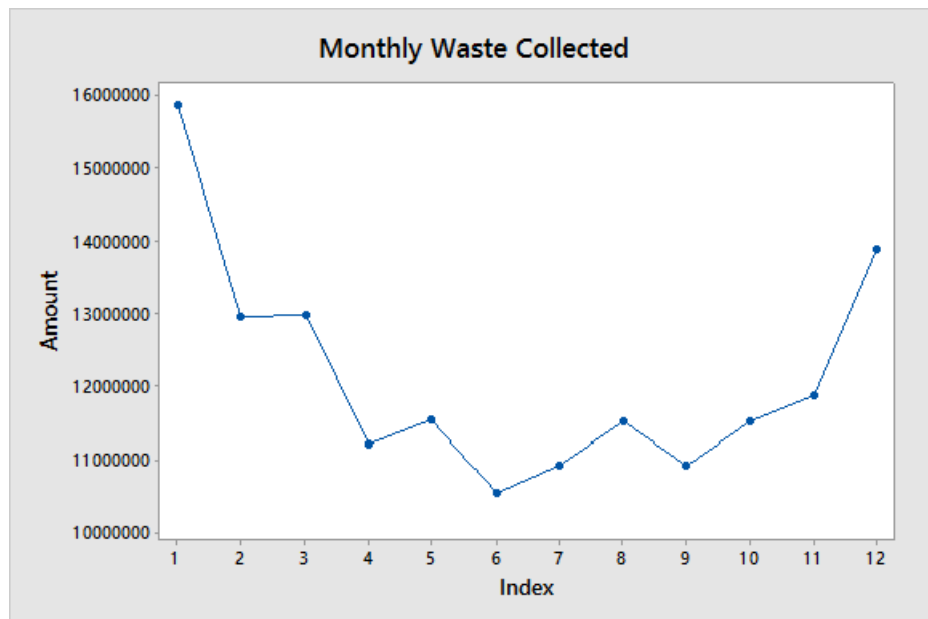
Figure 7



6.3 Experience and lessons learned

- *Hardware Cost*
- *Data Acquisition*
- *Integration Tools*

Figure 8



7 Conclusions and future works

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*Pentaho data integration and business analytics
platform*

Apache spark

*Global Journal of Computer Science and
Technology*

*IEEE International Conference on Smart Cities
Conference*