Smart CITIES Data Management System

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Smart City Data & Characteristics

• Data Types:
  – City info., GPS, Traffic, Mobile, LBS, Environment and Climate data, Social activity, IoT, etc.

• Data Characteristics:
  – Heterogeneous data sources
  – Featured with big data:
    • Variety (varied/complex formats/types/meanings):
    • Volume: Very large data volumes
    • Velocity: Data arrives very fast (data streams)
  – Temporal-spatial data
  – Fine granularity
  – Multi-dimensions
CITIES Data Platform

• Data security assurance
  – Data anonymization (e.g., for sensitive data)
  – Secured data management (VM-based environment/private ownCloud)

• Quality assurance
  – Data cleansing/quality checking

• Data fusion
  – Open data platform
  – Linked data
CITIES Data Platform
Components of CITIES Data Platform

• Support for
  – Diverse data sources
  – Multiple processing systems
  – Different processing modules/algorithms

• Big data technologies, e.g., Spark/Hadoop/Hive

• Real-time and batch jobs
Components of CITIES Data Platform
CITIES Data Platform

(a) Administration interface
(b) Web-based data processing/algorithm implementations
(c) Analytics results visualization
(d) Embed charts in a web page