

Open APIs
for Open
Minds

Publishing context information as Open Data and supporting an Economy of Data

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#OpenData

#Economy_Of_Data

#Context

“Data is new oil for a digital era”

Neelie Kroes

Open Data definition

- *“A piece of data or content is open if **anyone is free to use, reuse, and redistribute** it — subject only, at most, to the requirement to attribute and/or share-alike.”*

[<http://opendefinition.org/#sthash.6ieidzit.dpuf>]

Open Data definition

- Desired attributes

- Accessibility to anyone
- Re-usage possibilities
- Updated
- Quality (of course)
- Linkable

- Open Data vs Public Sector Information

- Levels of openness of data [TBL 2010]

- **Online** but not re-usable on open licenses

- ★ Online and **open-licensed** but only human-readable

- ★★ Online, open-licensed and **structured**

- ★★★ Online, open-licensed and structured (**non-proprietary format**)

- ★★★★ All of above and identifiable with **URI**

- ★★★★★ All of above and **linkable** to get network-effect and added-value

Every public body, private Company or citizen should have equal rights to get the data [European directive on PSI, 2003]

Public data can be completely useful only if it has an ability to be linked with other data sets and create new social and economical value [Sashinskaya, M. 2014]

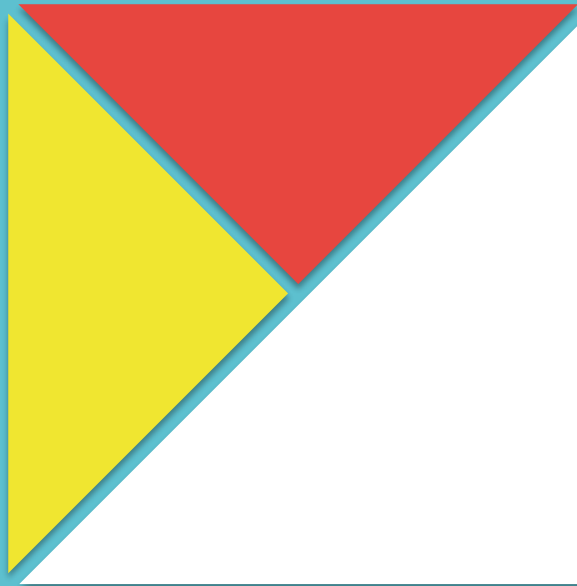
Types of Open Data



Open Data for Smart Cities

- Smart people are the most important component of a Smart city
 - User-oriented participation
 - Talent
 - Entrepreneurship
- City government may not need to produce the apps, but can provide the platform being a facilitator
- A modern city has many data generated and collected by citizens every day
 - This data can create added value (social and economical) specially if is linkable and combined with other public data

Publishing Open Data: CKAN






CKAN Open Data Platform

- De facto standard platform for Open Data in Europe and beyond
- Plenty of extensions: harvesting, geographical information, data visualization...
- Search & Discover Data:
 - Search by keywords
 - Browse by facets
 - Explore data with previews & visualization
 - REST/JSON APIs to access data and metadata
- Data Management for publishers
 - Easy store & update of metadata

FIWARE Data Market

- Integrated with FIWARE Lab IdM (OAuth2)
 - Users do not need to have different accounts
 - Same user than in the rest of FIWARE Portals
 - Users can access the portal without log in to read open data
- Ability to create private datasets
 - Accessible only by certain users
- Ability to publish datasets in the Business API Ecosystem
 - Manage the users that can access private datasets
 - Charge users for accessing your data
 - Ensure that users only access your data under some legal terms
 - ...
-  <https://data.lab.fiware.org>

NGSI and CKAN

CONTEXT

MATTERS

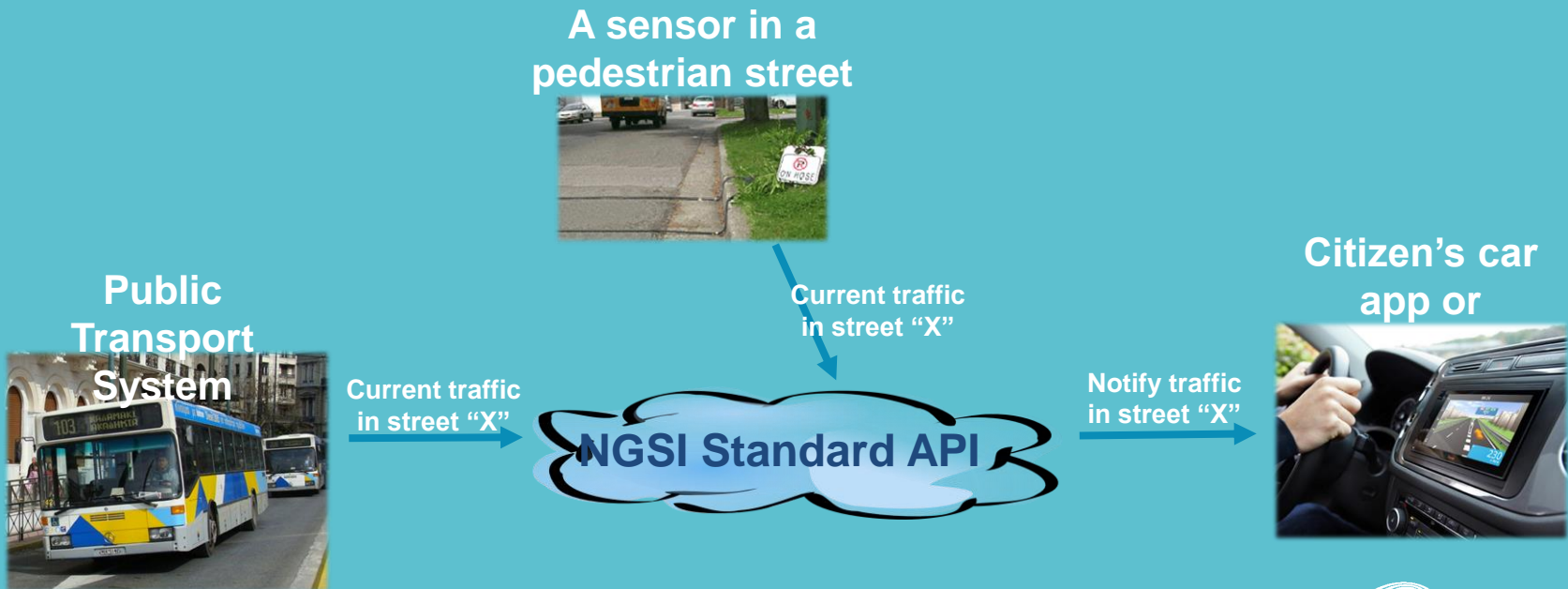
Shared context information would boost innovative services and the development of multi-side markets

THE DATA ECONOMY



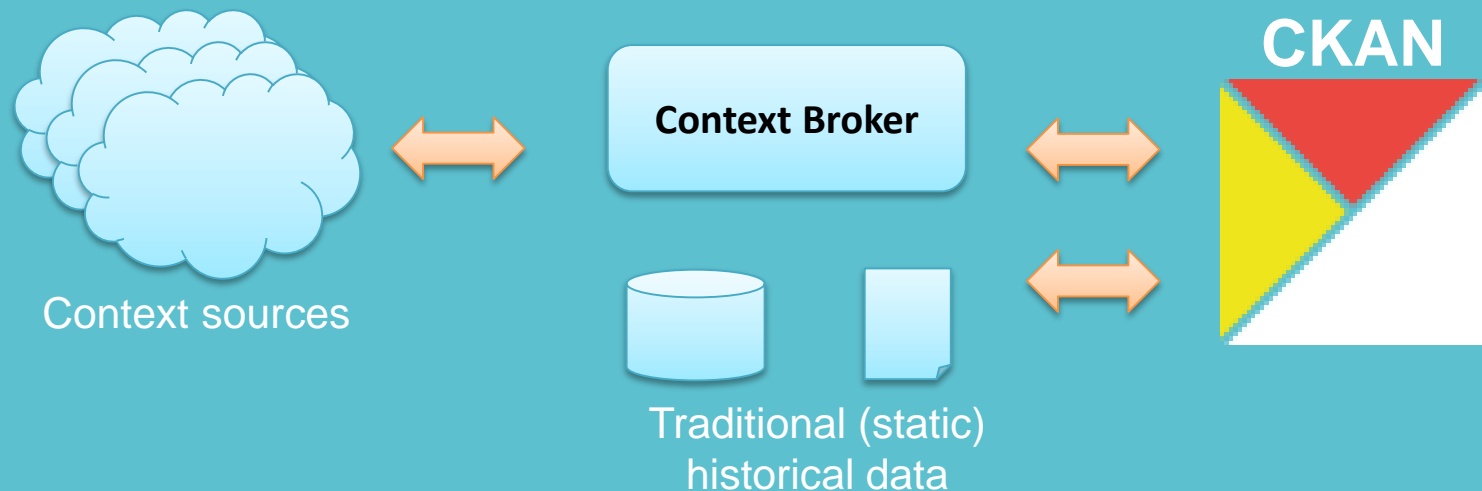
Different Sources of Context

- Context information may come from many sources which may vary over time:
 - Existing Systems** dealing with management of municipal services
 - Sensor networks (**Internet of Things**)
 - Third-party **smart city APPs**
- Source of information needs to be **transparent** to applications accessing **context information**



FIWARE NGSI components as live data sources

- Integration with any NGSI-enabled component in FIWARE
- Live-update of data (context information) for interactive applications
 - IoT



Once context information is gathered, other useful FIWARE enablers can be used

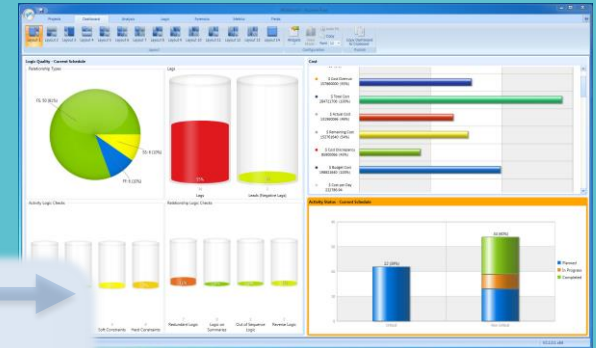
Advanced Web-based UI
(AR, 3D)



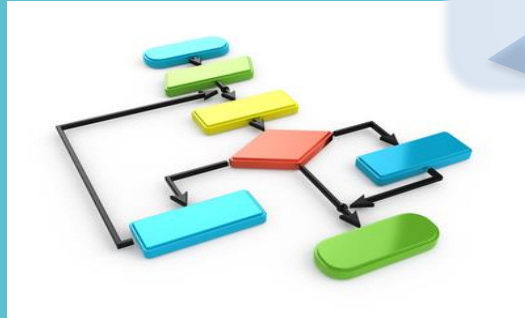
Open data publication



Data/Apps visualization



FIWARE NGSI API



Complex Event
Processing



Multimedia processing



Big Data Analysis

Towards an Economy of Data

Business API ecosystem RI

- Monetizing data
 - Or only “Terms of use”
- Not only data
 - Visualization
 - APIs
 - Applications
- Revenue sharing
- Value-chain (future)

Business API ecosystem RI

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Business API ecosystem RI

- Support for the management of catalogs, products, and offering
- Support for rich pricing models, including recurring payments, pay-per-use, etc.
- Support for accounting callbacks
- Support for billing and charging
- Integrated support for PayPal, including customer charges and seller payments
- Support for revenue sharing, including models with multiple stakeholders involved

Aligned with TM Forum



TM Forum & FIWARE APIs are part of a Business Framework that serves the emerging economy of data.

Benefits of using TMF Open APIs

FIWARE

- Standards for “Smart” Apps/Services
- NGSI API for context information

TMF Open APIs

- Rapid, repeatable, flexible integration among management systems
- End-to-end management capabilities

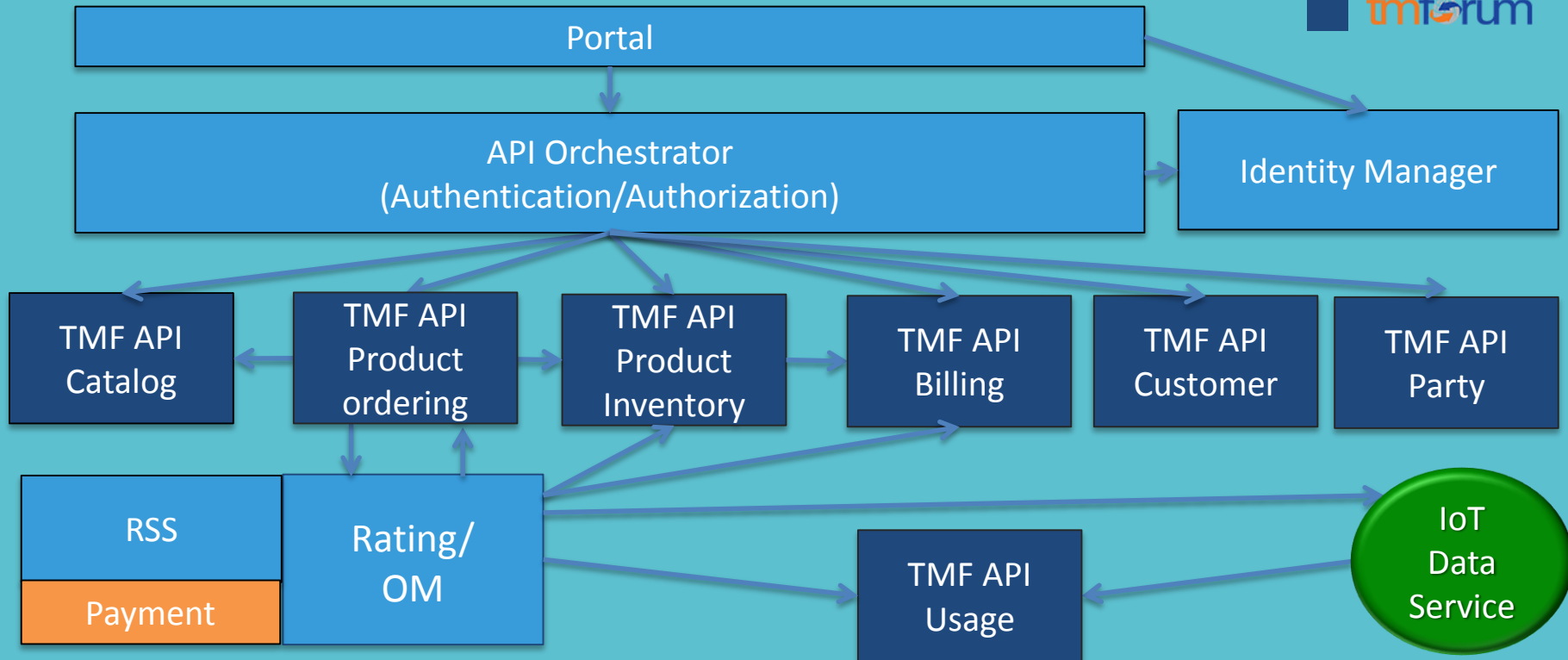
Standardized,
interoperable
platform for
DS
Management

TM Forum Ecosystem APIs


- REST based APIs that enable rapid, repeatable, and flexible integration among operations and management systems.
- Making it easier to create, build and operate complex innovative services.



Business API Ecosystem Architecture



Where to get more information?

- Technical documentation
 - <https://business-api-ecosystem.readthedocs.io/en/latest/>
- The fast way
 - <https://hub.docker.com/r/fiware/business-api-ecosystem/>
- Courses at  FIWARE Academy
 - <https://edu.fiware.org/course/view.php?id=150>
- Interesting Business API Ecosystem stuff during FIWARE Summit
 - **Wednesday 14th 15:00-15:45:** “How to use the FIWARE Business Framework for implementing the Economy of data concept”, Miguel Jiménez & Álvaro Arranz (Data Team)

| Thank you!

<http://fiware.org>

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