



Comune di
Milano

Interoperability platform of the municipality of Milan: An overview on a Urban data platform

Making Smart Cities Sustainable
9th October 2018





The Municipality of Milan

Our city

- ✓ Second **largest city** in Italy
- ✓ More than **1,3 millions** citizens
- ✓ Largest Italian metropolitan area
- ✓ Main city of Lombardy

- ✓ Very **complex administrative structure**
 - ✓ different departments
 - ✓ many external service providers

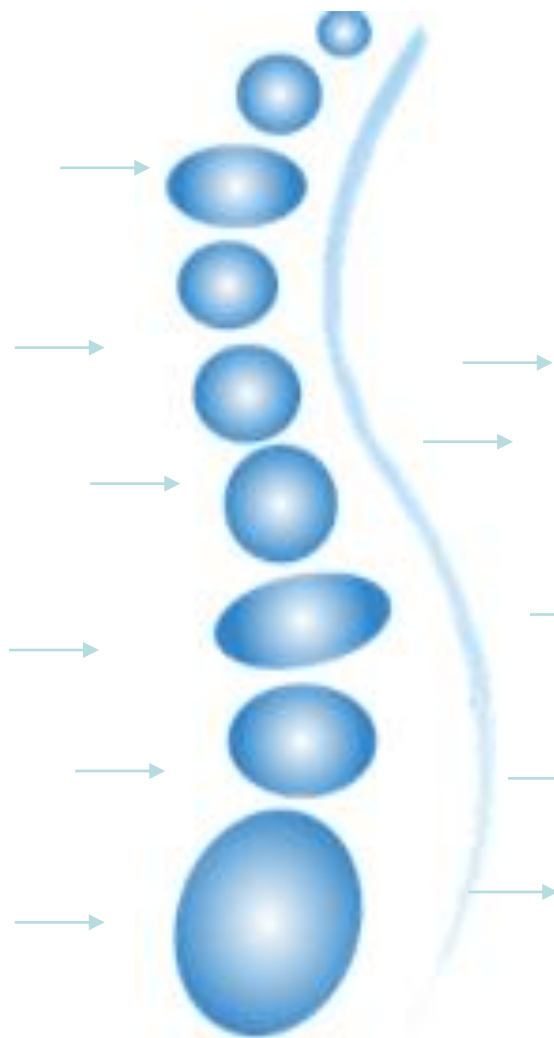


4 years ago the city has implemented an interoperability platform and the city is working to pass from a vertical to an horizontal approach to data and services



Interoperability as a backbone

From data



To services for the citizens

Reuse in Venice

The starting point

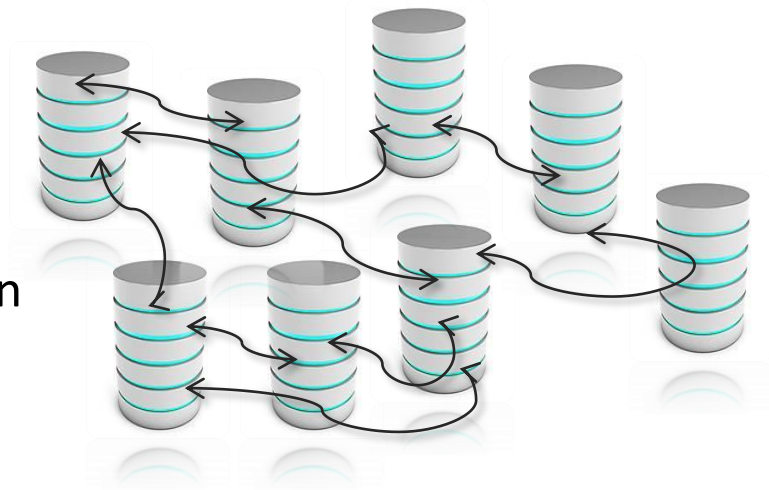
Where we started from

Results of the **2014 census and assessment** of the existing software and db and their relationships:

- about 200 applications and databases
- > 75% of manual data exchange
- no governance on exchange
- huge manual work for data correlation and analysis

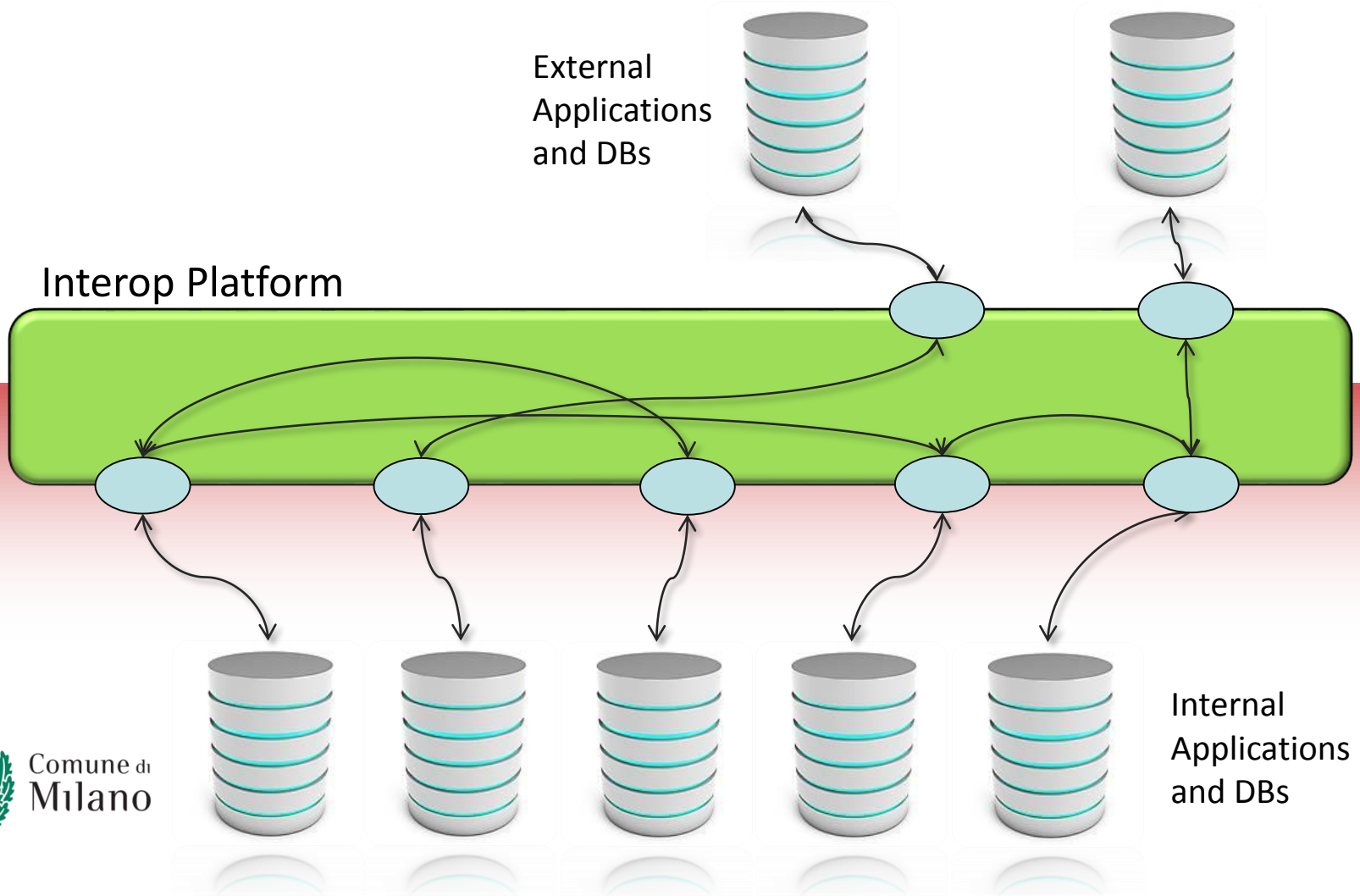


The problem: a ***“spaghetti”*** configuration



One platform to rule them all

What we want to accomplish

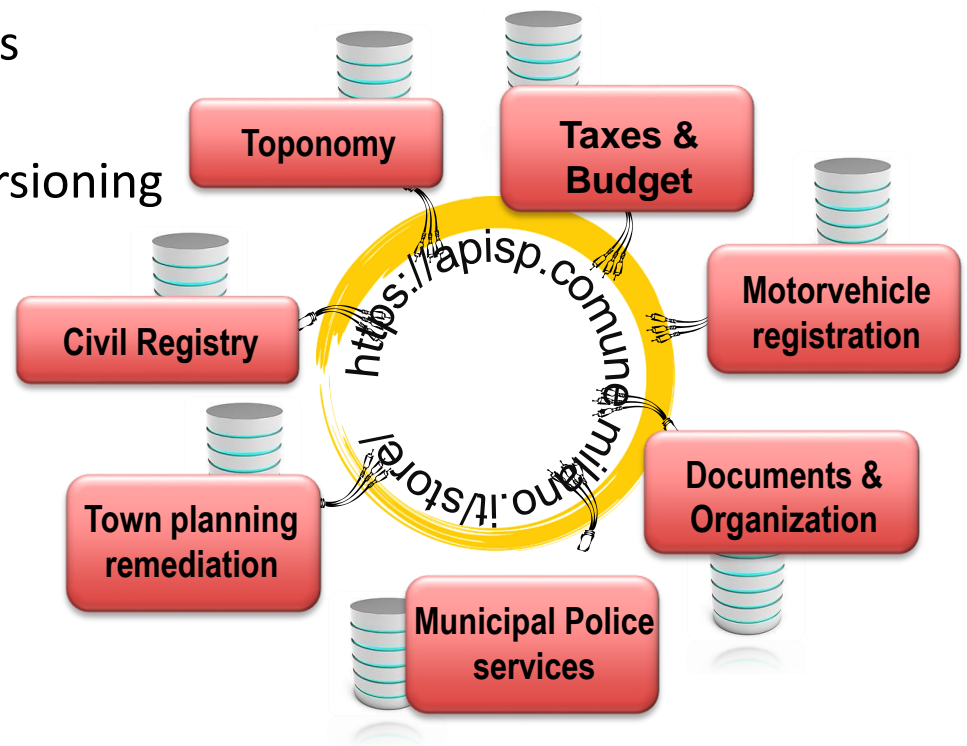


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Goals of the platform

What we want to accomplish

- ✓ Decoupling data from technologies
- ✓ **Governing** maintenance and versioning
- ✓ Single point of documentation
- ✓ Improving **security**

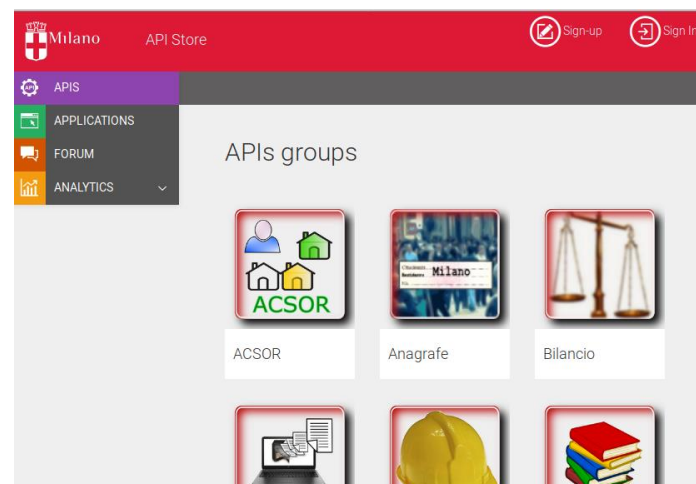


It is a long journey

But we've gone a long way

- ✓ Interoperability platform - in production
 - ✓ About **120 APIs** available to access data of the municipality
 - ✓ Strong and secure authentication to access data

Have a look at our API store with catalog:



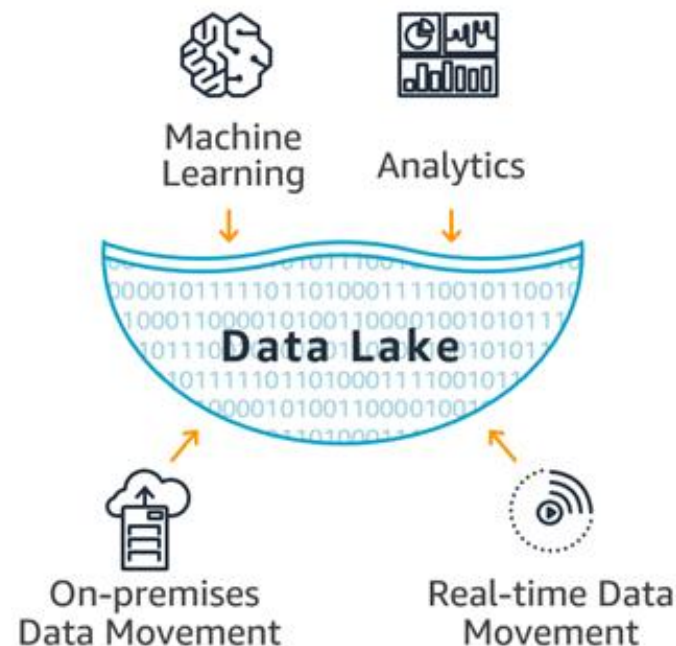
<https://apisp.comune.milano.it>

It's not just about APIs

Sometimes data is “trapped” inside legacy applications that did not provide APIs.
Sometimes data is not structured.

That's why we are deploying a
Data lake infrastructure:

- Make unstructured data accessible
- Single point of access to ***Master Data***
- Historical search
- Reduce workload for vertical databases
- Also for external entities



Currently test environment deployed
Production scheduled 1Q2019



Business Intelligence

From data to decisions



Making data accessible is not enough!

- ✓ Big volume of data
- ✓ Difficult to study
- ✓ Difficult to “integrate” from different sources

We want to go from **data availability** to **decision making** based on the data

One example of usage of our platform

A Digital Record for the citizens, who will thus find in a **single point** all **their** information and **their data** stored in the registry systems of the City of Milan.

- Details of the family unit
- Registration to the school services
- Payments and deadlines for taxes and fines
- Appointments to municipal offices
- Print of a registry certificate with legal value

Il Fascicolo digitale del cittadino contiene le informazioni anagrafiche del nucleo familiare, le informazioni relative alle iscrizioni ai servizi per l'educazione e scuola dell'obbligo, i documenti tributari e il collegamento ai servizi online della mobilità.

Per accedere al servizio devi essere registrato al portale con Profilo Completo oppure avere una identità digitale SPID.



I miei dati

Visualizza i dati del tuo nucleo familiare (carta di identità, permesso di soggiorno, dati elettorali e dati sull'educazione e istruzione dei figli). Richiedi direttamente online i certificati anagrafici.



I miei appuntamenti in Comune

Monitora l'agenda degli appuntamenti in Comune presi con il servizio Prenotami.



Servizi di riscossione

Visualizza pagamenti e scadenze per Tares, Tari e invia richieste di autotutela e di rimborso. Il servizio è in fase di collaudo.



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Permessi per la mobilità

In questa sezione puoi visualizzare i tuoi permessi



Le mie denunce

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Coming soon

- Sanitation taxes for businesses
- Expiration of IDs
- Expiration date for library loans

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Le mie denunce

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Innovative projects in Milan

BOOSTING
SOCIAL INNOVATION
Boosting Social Innovation

DYNAMAP
DYNAMIC ACOUSTIC MAPPING
Dynamap
Mappatura dinamica del rumore

EUGUGLE
EUGUGLE

hacca
NEW APPROACHES IN THE CONSERVATION OF CONTEMPORARY ART
Nacca
New Approaches in Conservation

UIA URBAN INNOVATIVE ACTIONS
OpenAgri Uia
New Skills for New Jobs in Periurban Agriculture

#OpenCare
OpenCare
Open Participatory Engagement in Collective Awareness for REdesign of Care Services

FIT4FOOD2030
Fostering Integration and Transformation for FOOD 2030
Fostering Integration and Transformation for FOOD 2030

Food Smart Cities For Development
FSC4D
Food Smart Cities for Development

Fr-Evue
Validating Freight Electric Vehicles In Urban Europe

prepAIR
The Regions Engaged to Policies of Air
Prepair
Miglioramento della qualità dell'aria in accordo con la strategia europea "Aria pulita per l'Europa".

SHARINGCITIES
Sharing Cities

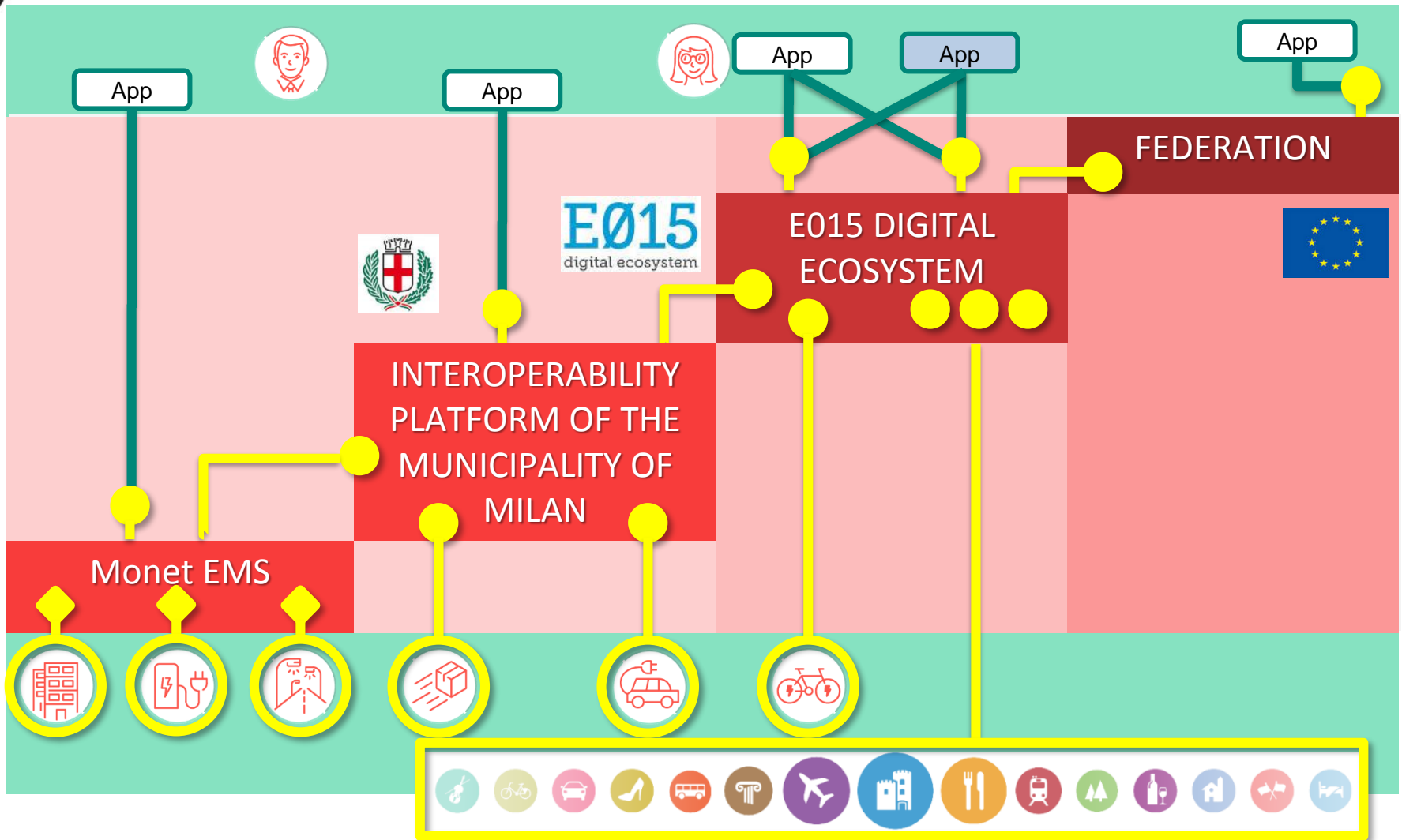
SYNCHRONICITY
Synchronicity
Sperimentazione su larga scala servizi IoT

TRIFOCAL
Transforming City Food Habits for Life

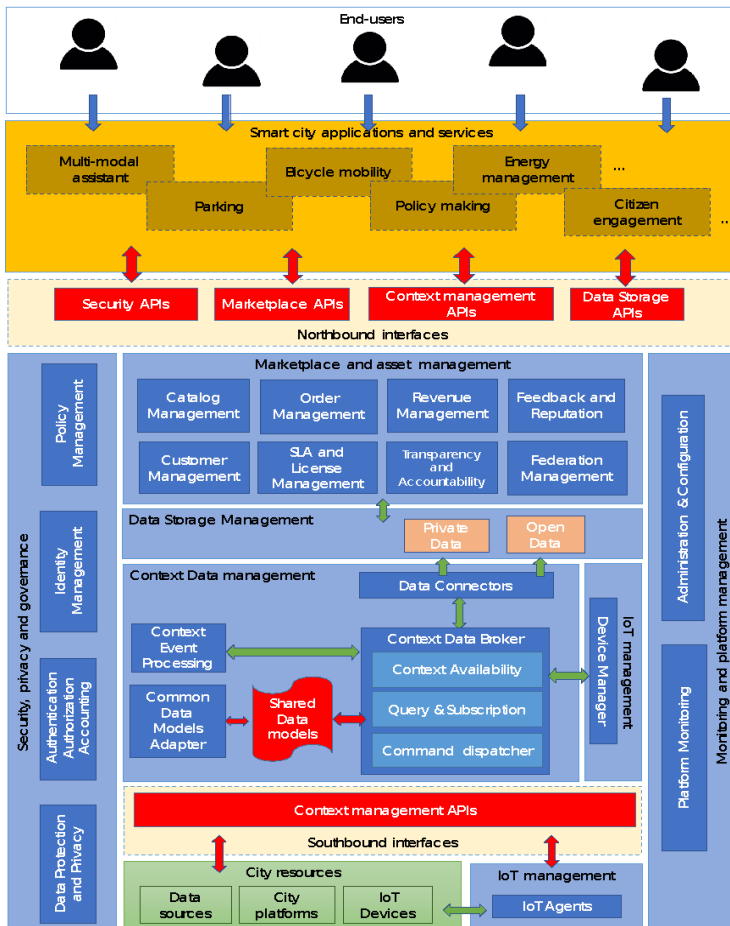
URBACT
Driving change for better cities
URBACT
Food for Cities

progetto CAMPUS
Centro Servizi di Polizia Urbana in Area Metropolitana

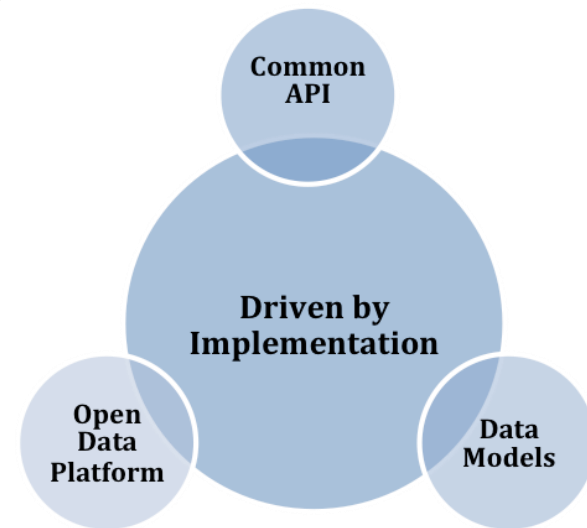
Urban Sharing Platform



Standardization Issue



SynchroniCity opens up a global IoT market where **cities and businesses** develop **shared digital services** to improve the lives of citizen and grow local economies, based on the principles of the Open & Agile Smart Cities (**OASC**) network.





Interoperability isn't "sexy"

a.k.a. the reason why is difficult to make data flow

«Another bargain to be added to projects»

«Added cost»

«My data, my precious»

«What is the advantage?»

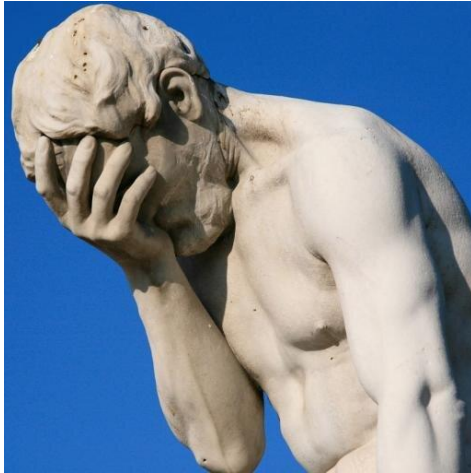
«Let the other systems abide to my design»

«Nobody will see this»

«Not expendable on a "marketing" level»

Barriers

Some considerations on the work done



Some of the biggest barriers we met when building and operating the platform

- **Opposition** to changes
- **Fear** to lose control over data
- **Fear** of violating GDPR
- **Lack** of consideration for interoperability in design process



Opposition to change

No matter what

Humans and human organizations are lazy: they must foresee the advantages of something to invest work and effort into it.

We had to battle against “the way things were always done”

“Why should I bother?”

“We’ll miss the deadline for that!”





Fears

Data only for myself



Fear of losing control over **who and how** access the data is common.

Also, with the new GDPR, when working with sensitive data the concept of “security through obscurity” sounds better than “control over data circulation”.

- **GDPR can feed fears** about sharing data

*“I would share my data,
if I could”*



Data Sharing by Design?

When designing a new system, considering an interoperable paradigm that can expose data in a secure way requires a **bigger effort** in terms of time and money to be designed.

Also

- Harder to mask bad design habits
- Requires to think about the data
- “Data first” thinking not yet common

But

- Systems are easier to maintain
- Forces to follow standards for data exchange
- Difficult to create lock-ins





Opposition to change

How do we fix it?

- **Clear idea** of where you are going and what you want to accomplish
- **Small steps** to the goal
 - You should start with easy challenges
 - Then move on to tougher steps
- Always check that **all parties understand the advantages**
- Try to instill the idea that openness of data and data exchange **are here to stay**, so better lead the change than suffer it.

Tech, marketing and diplomacy



Fear

How do we fix it?

- Leave **control** over data to the owner
 - Make clear statement about **who** can access data and **for what**
 - Provide **information** to the owner of the data
 - Let him **be a part** of the approvation process to access data
- Provide a **safe** software **environment** to govern data
- Explain that more data is available, more data can be accessed

Be clear and transparent



Interoperable Design

How do we fix it?

- Sometime the problem solves itself when a system is deprecated
 - Pay attention that the new one must be interoperable!
- Encourage **data-driven design**
- Give tools to facilitate the governance of applications
- Enforce interoperability; procurement must include data sharing aspects
- Beware of “**Black boxes**” !

Strong management committing



Should we stop fighting?



Let's keep in touch!

How can you find me?



My office mail:

marco.minelli@comune.milano.it

Team mail:

siad.uffinteroperabilita@comune.milano.it

Skype: [marco.minelli@comune.milano.it](https://www.skype.com/people/marco.minelli@comune.milano.it)



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Thanks for your attention!

Q&A Time!