co3project

co-create · co-produce · co-manage

SHARING CITIES ACTION

CO3 Disruptive technologies for co-creating, co-producing, and managing public services openly with citizens

Co-Funded by the Horizon 2020 programme
of the European Union

UVIC UNIVERSITAT DE VIC

www. projectco3.eu

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CO3 (co-create, co-manage, co-produce)

A GRAPHIC INTERFACE FOR THE CITIZENS COOPERATION

OF THE EUROPEAN CALL

The challenge is to evaluate the potential benefits and risks of using disruptive technologies (such as blockchain, IoT, virtual reality, augmented reality and gamification) in public administrations to promote co-production, co-management of services. It also calls for assessing the social impact, on public employees, of their use in government processes (i.e., archives, taxes, decision chains, ...) as well as understanding how to overcome legal barriers.

ACTIVITIES

Create pilots with partners, stakeholders, and multidisciplinary users to examine how emerging technologies can affect the public sector. Evaluate the new interaction models in terms of:

1) social and cultural impact: behavior, application, change of relations with public employees;

2) economic: value of services / goods produced and exchanged, effects on jobs, consumption.

3) legal: legal implications for admin., privacy ...

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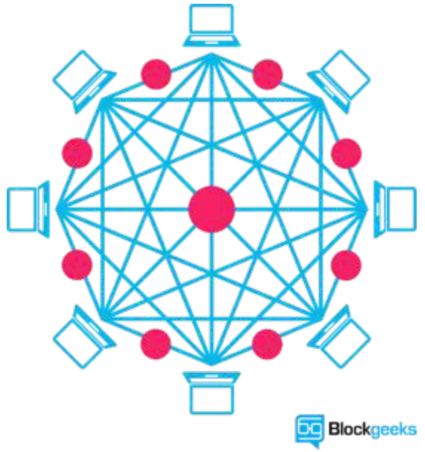
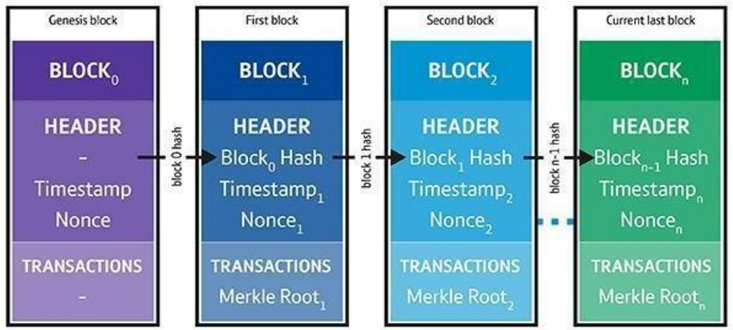
BLOCKCHAIN

The blockchain is a logging technology distributed/replicated between all nodes of a point-to-point network with the following works:

- **Decentralized**: each node has the same information
- **Resilient**: there is no point of vulnerability
- **Reliable by design**: Certification does not relies on an individual / person.
- **Immutable**: A block cannot be changed.
- **Transparent**: The information contained in each block is visible and verifiable from any node.





As its name indicates, it is a chain of blocks connected by a hash (cryptographic result) to the previous one. Thanks to this, to modify a block it is necessary to alter the previous ones of the chain, being practically impossible to alter them. How the hash is calculated and who adds the next block is decided by a consensus of all the subjects in the network. There are several methods of consensus, the most common being Proof-of-Work (Bitcoin, Ethereum), Proof-of-Stake (Peercoin, Nxt).

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BLOCKCHAIN

Examples

:

Bitcoin

Recipients: Individual users of a P2P network.
Used as: Virtual coin, as a store of value.
Purpose: Allow direct exchange of value between users without the need for a central body.
Pros: Decentralization, incensurability, no limitation.
Cons: Slowness, high power usage.

Application examples:
It can be used as a local financing instrument, for coupons for loyalty programs, or to participate in purchasing groups or crowdfunding.

Ethereum

Recipients : : Individual users of a P2P network.
Used as: Smart contracts, assets tokenization.
Purpose : It allows you to run generic applications in a distributed environment.
Pros: Wide range of applications, decentralization, incensurability, no limitations.
Cons: Complexity, scalability.

Application examples :
As a token can be used in fungible (combinable elements) or infungible applications where it symbolizes a single element. It can symbolize an asset such as a kW of energy, time, water, fuel, kg of drag as items like a book, right of access to a public space, a task.

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AUGMENTED REALITY

Augmented reality is a technology that enriches real-world perception with the inclusion of virtual information elements. Its pillars are two elements:

The devices: smartphones, tablets, Smartglasses

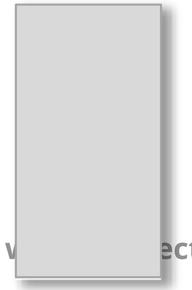


The technologies : Image recognition, patern recognition, markers, GEO localization.



In practice....

Mobile Device
f.e. Smartphone



Real-world anchors that connect to the virtual world.

Different methods depending on the context:

- With GPS: Visualization of monuments
- QR Codes: These tags allow visitors to access information about something with a simple gesture.
- Overlay of objects: with artificial vision, image recognition.

Content

It is necessary to provide specially designed content for AR technology. The content may be created by the service provider or from the users themselves.

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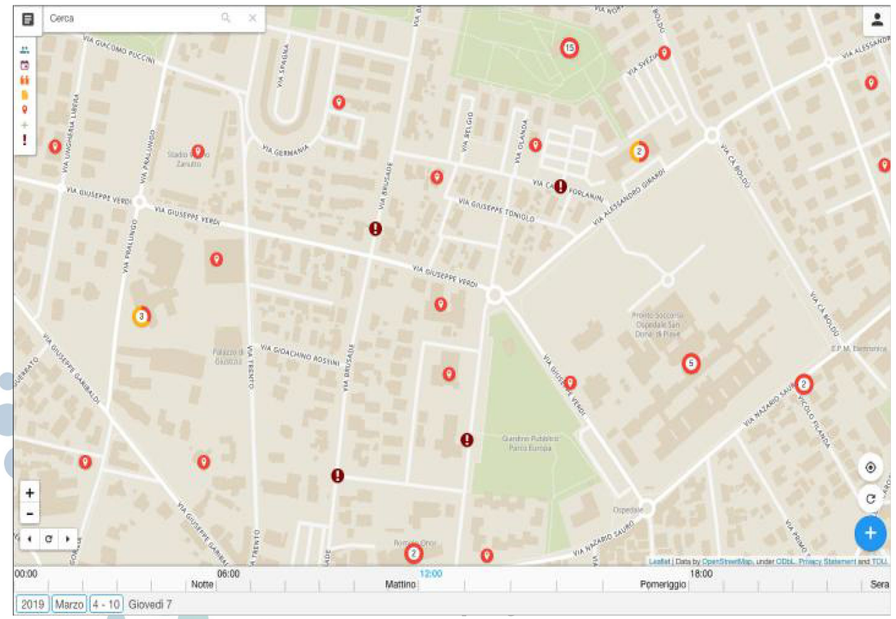
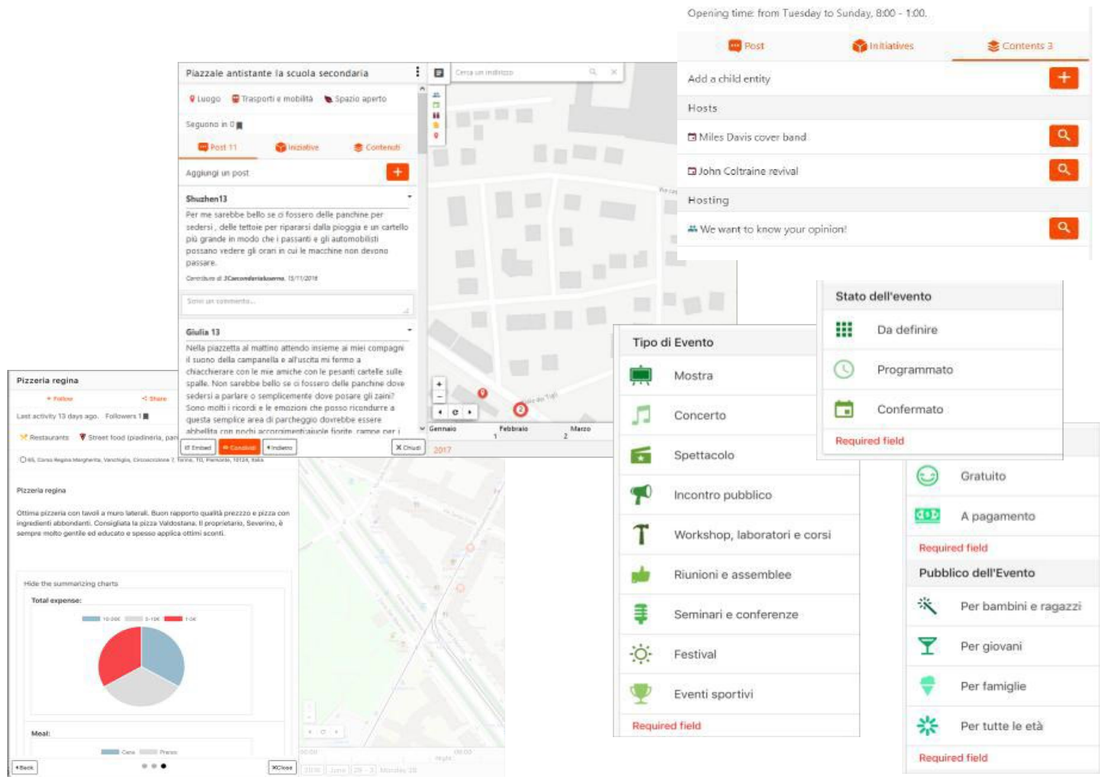
GEOLOCALIZED SOCIAL NETWORKS

FirstLife is a **social network** based on a **virtual map** for the inhabitants.

It is a virtual space that facilitates the coordination of cooperation. The main players involved are citizens and public administrators.





Each actor can define the initial attributes of the task/element/poi as the name, description, category, category, tags ... That can be enriched with comments, images, publications, surveys, and connections with other elements.

These elements can be associated with contacts or smart rewards when an objective is reached.

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LIQUID DEMOCRACY

LiquidFeedback is a platform that allows citizens to create, comment, and vote on a proposal to improve city life in a transparent and reliable process.

Support the (democratic) self-organization of a (potentially) unlimited number of participants without moderation mechanisms or central bodies.

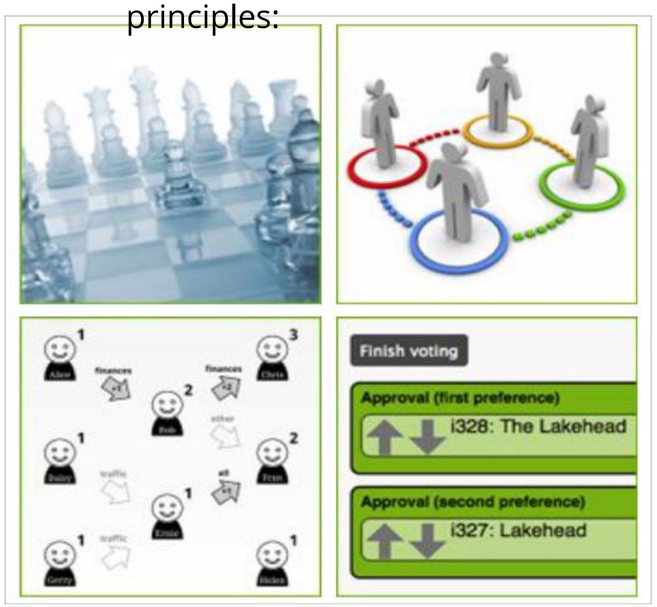
It enables the proposal of alternatives protecting minority ideas. The preferential voting system allows the citizen to consider the advantages and disadvantages of the different competing initiatives before the vote.

It consists of **four** phases: **Admission** where minimum support must be reached. A **discussion** where initiatives are continuously improved to gain support. **Verification** where initiatives become immutable and finally **voting** where initiatives are voted preferentially and where the vote is allowed to be delegated.

LiquidFeedback

It is supported on 4 principles:

Transparency, Reliability



Collective moderation

Delegation of the vote

Preferential vote

Structured deliberation process

a) Creation of a proposal
b) Consider the pros and cons, suggesting possible improvements
c) Develop alternative proposals

Collective preference by voting

a) Voting options are decided during the deliberation phase
b) Minimization of the "instrumental" vote
c) Preferential vote

Time

admission eg. 4 weeks	discussion e.g. 8 weeks	verification e.g. 4 weeks	voting e.g. 4 weeks

search for the question, create set of answers (voting options)			decision
flow control	improvement	consolidation	voting

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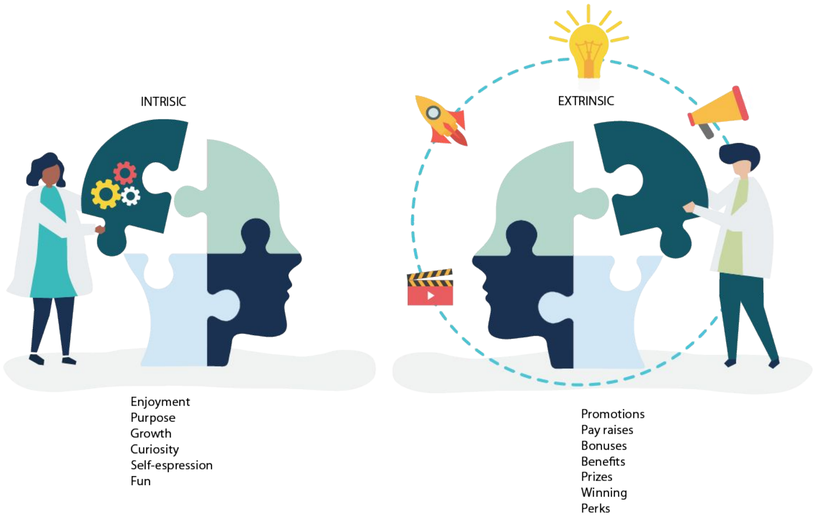
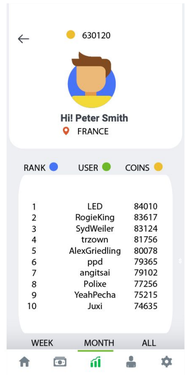
GAMIFICATION

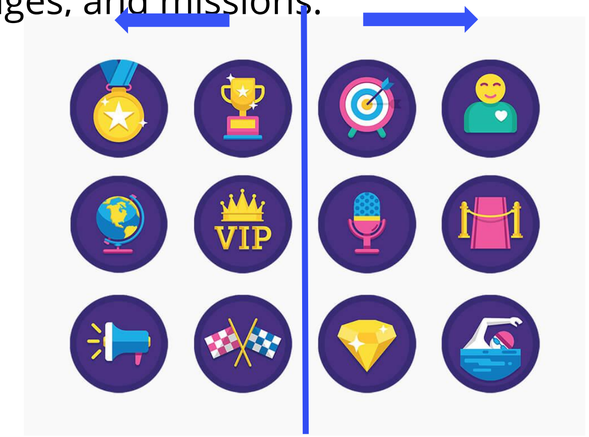
Gamification is the use of game elements in environments other than games to encourage participation and the desired behaviors of users. It is an additional level of service that reinforces an already defined process. It integrates mechanics such as; Challenges, Leaderboards, Unblocking Content.

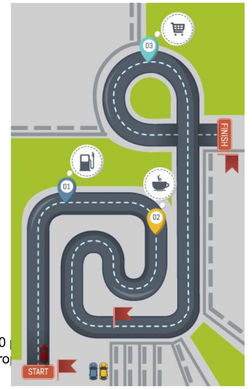


Gamification explores the principles of human motivation in **intrinsic** terms (a perception that is growing in abilities) and **extrinsic** (reward-based) motivation. Intrinsic motivation is the most difficult to manage because external rewards cannot augment it. Meanwhile, extrinsic motivation is easier to create but harder to maintain over time.

The gamification elements can be divided into two subcategories; Structural is the application of the game element without modifying the service process by only including points, badges, leaderboards. And content gamification that requires a profound service modification to incorporate stories, challenges, and missions.







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GAMIFICATION

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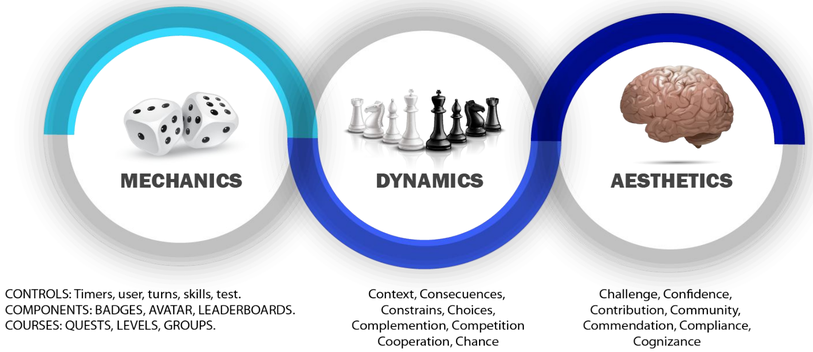
Gamification elements.

DESCRIPTION	MOTIVATIONAL FACTOR	DESCRIPTION	MOTIVATIONAL FACTOR
LIFETIME The contributions starts with a life that is being reduced over time and runs out of it if there is no activity.	Intrinsic: Learning	**PROFILE** Users can check their activity within the system: n° of published com-ments, classification, progress, etc.	Extrinsic: Reputation Institutional Personal
MISSIONS The tasks can be created by citizens or officials to get opinions on paticular topics.	Intrinsic: Learning Pleasure	**LEVELS** Users can progress according to their skills .	Intrinsic: Learning Extrinsic: Personal
METRICS Users receive point for the done activity (publish, comment). These points are measured to reflect the area of infuence you hace gained with your actions.	Intrinsic: Learning Pleasure Extrinsic: Reputation Institutional Personal	**SOCIAL INTERACTIONS** Comment contributions and reply to the other comments. Users have the opportunity to interact socially with others. Comments have an impact at the institutional level.	Intrinsic: Social Pleasure Learning Extrinsic: Instintutional
LEADERBOARD The users can compare their performance with other users at the leaderboard lists.	Extrinsic: Reputation Institutional Personal		

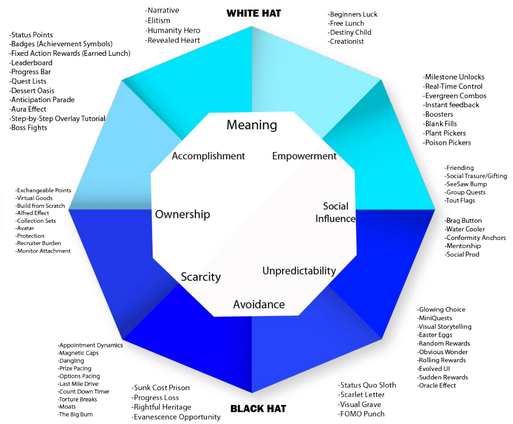
Frameworks: MDA, Octalysis, Six D's , Gamification model canvas



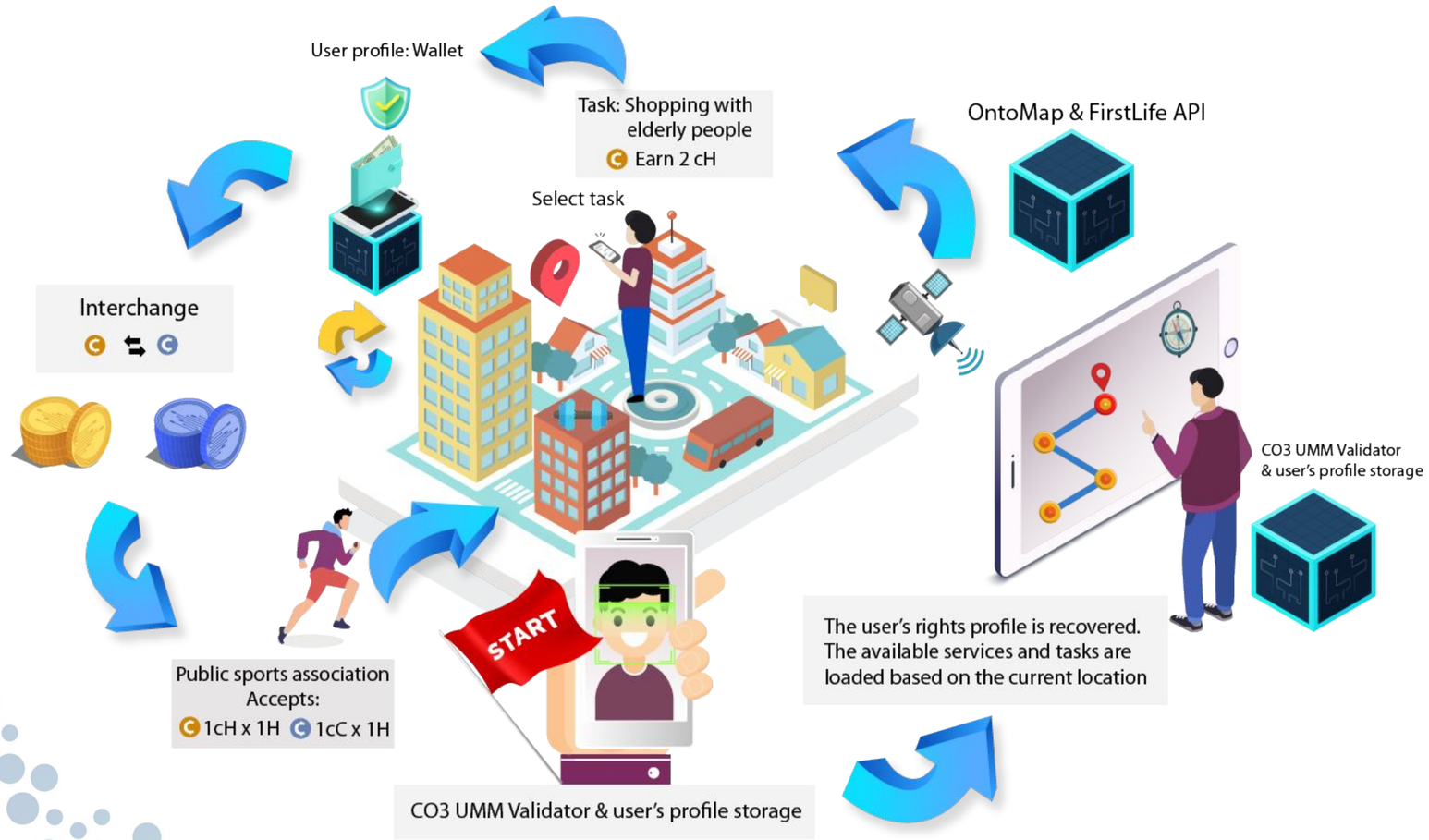
CONTROLS: Timers, user, turns, skills, test.
COMPONENTS: BADGES, AVATAR, LEADERBOARDS.
COURSES: QUESTS, LEVELS, GROUPS.

Context, Consecuences, Constrains, Choices, Complemention, Competition Cooperation, Chance

Challenge, Confidence, Contribution, Community, Commendation, Compliance, Cognizance



EXAMPLE: Application of AR + FirstLife



The user has to be authenticated **to download his personal data**. Once he is **geolocated**, with the phone's camera and by moving its position, the different available transactions can be seen **in real-time.**

Those are tasks for **time credit (cH), or credits (cC)** and services/shops that accept those credits. The **transactions are automatized** with the **smart contracts** once the conditions are met, like in this case, once the **service is done** the credits are **stored** automatically on the **user's wallet**.

Later the user uses his credits to enter a sports association spending 1H of time credit. There is the possibility to interchange between credits by 3rd persons.

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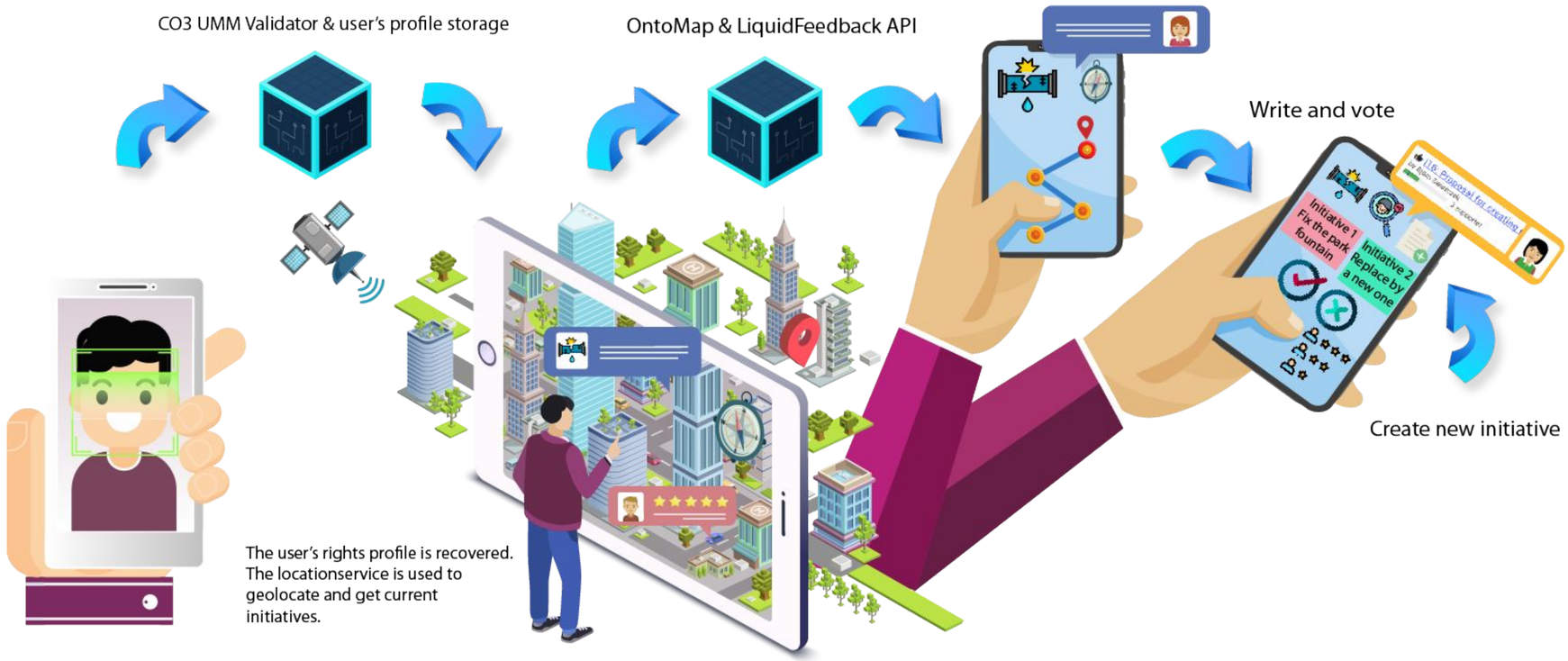
EXAMPLE: Application of AR + LiquidFeedback



The user has to be authenticated to **download his personal data**. Once he is **geolocated**, with the phone's camera and by moving its position, the different **available initiatives at his environment can be seen through the screen** of his/her phone with the Augmented Reality technology.

By touching one of these initiatives**, an immediately 2D environment is opened (LiquidFeedback)** to enable a user-friendly interface to write text and vote. If it is the case that the user wants to create a new initiative, is possible to create one by tagging its position and then filling the information on the LiquidFeedback interface.

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SCENARIOS

SOCIAL ECONOMY

WELFARE

CITY MAKING

PLACE CARING

ARTS & CULTURE

EDUCATIONAL

UNVEILED INFORMATION

CIVIL WORK

Local and informal jobs are out-of-the-regular-job-market activities which are not recognized by the law and social institutions albeit their importance for the social value created for a given community (i.e. street kitchen, street workshop).

This initiatives allow people to develop individual and collective capacities, to practice and evolve different types of knowledges (theoretical and practical), renewing the social and cultural life and diversity of the territory.

CIVIL WORK

1

How to **allow activities to ‘emerge’** on the base of practices, knowledge and collective capacities of the territory?

2

How to **facilitate the deliberation process** within the local community? How to highlight the relevance and impact on the inhabitants' quality of life and/or the territory's economy?

3

How does the **management process** of the activities, including the workers’ contributory income will work?

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SOCIAL WELFARE

https://altreconomia.it/torino-la-bancarella-del-mercato-riduce-lo-spreco-alimentare/

A social challenge that especially large metropolitan areas are tackling is about the possibility
to redistribute goods in surplus and to reply to the need of increasing indigent people.
Food, primary services, and other forms of mutual support can be a reply.

https://www.pata.org/food-waste/what-to-do-with-waste/34-frances-supermarket-food-waste/

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SOCIAL WELFARE

1

How to **map the available resources** (food, time, skills, primary objects, care, ...)?

2

How to **engage citizens** that can team up to spread awareness? How to **include other** underprivileged citizens are in need for decent meals on a daily basis?

3

How to **enhance the participation**, from the expression of interest and reply on ad-hoc and timely manner (request; availability of the good/resource; delivery), in consideration of the existing Municipal and/or NGO services?

4

Which incentive schemes can foster the process?

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CITY MAKING

The future of the city and urban and citizen practices under the effect of industrial, logistical and administrative transformations underway in “smart cities” is a complex challenge that involve a plethora of profiles: architects, urban planners, engineers, anthropologists and sociologists, associations, building and construction companies and, last but not least citizens.

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CITY MAKING

1

How to **identify the activities** on the base of practices, knowledge and collective capacities of the territory?

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How to **facilitate the deliberation process** within the local community?
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PLACE CARING

Public places can be location to take care of it in an active an collective way.
Citizens can exploit a capillary knowledge of the places where they live, work, commute, socialize. These places can be object of collective care, socialization and environmental valorisation as well.

http://www.ehabitat.it/wp-content/uploads/Hortus-Conclusus-Parco-Dora.jpg

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PLACE CARING

1

How to **map the neighbourhood/ city the public places to take care of**?

2

How to **engage local actors** and promote their **active participation** to the activity?

3

How to **support the collective management** of places and the process **sustainability?**

4

How to monitor the activities?

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ARTS&CULTURE

Commoners can propose cultural initiatives that foster the local schedule and engage inhabitants.

Quizzettone Letterario, Circolo Lettori Torino

Poetry Slam, hosted in a Turinyouth centre

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ARTS&CULTURE

1

Ho to collect proposals and **initiatives?**

2

How to **facilitate the deliberation process** within the local community? How to highlight the relevance and impact on the inhabitants' quality of life and/or the territory's economy?

3

Hot to **monitor and sustain management** of the initiative?

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EDUCATIONAL AND LOCAL EMPOWERMENT

Commoners can propose educational initiatives that foster the local schedule and engage inhabitants.



http://www.lacasadelquartiere.com/#!

http://www.retecasedelquartiere.org/piccolo-cantiere-dellarte-laboratori-aperti-ai-ragazzi-a-san-salvario-2/

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EDUCATIONAL AND LOCAL EMPOWERMENT

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UNVEILED INFORMATION

Information and data available and constantly produced are growing. Nevertheless is still a difficult task obtain the required information at the right time in the right place.

Infogiovani Torino, Via Garibaldi 25

http://www.univrmagazine.it/2017/09/27/trovano-alloggio-gli-studenti-dellunivr/

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UNVEILED INFORMATION

1

How to **enable and facilitate to search/receive contextual information** nowadays not accessible or not available?

2

How to enable the contextual information co-production and co management (Publish, share, amend, update?

3

How to **experience novel forms of information and contents** enabling positive relationship among people and with ‘places’?

4

How to **exploit the information** produced and data on its use to inspire decision/policy makers, enhance current services, enable future scenarios?

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CO3 Digital Disruptive Technologies to Co-create, Co-produce and Co-manage Open Public Services along with Citizens

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