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NEWSLETTER

Why is Blockchain a disruptive technology?

Blockchain is a traceable and transparent distributed technology. Hybrid systems can combine public and private information to provide improvements for the co-production of public services.

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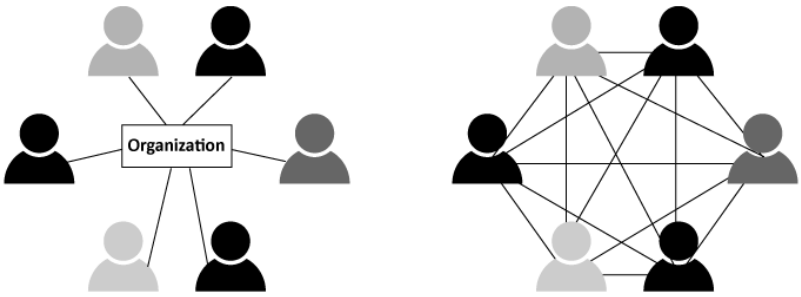
Why is Blockchain a disruptive technology?

Does the word Bitcoin ring a bell? And Blockchain? You probably first heard of Bitcoin, a cryptocurrency, but Blockchain is the Bitcoin underlying technology.

Blockchain is a distributed ledger technology that records, and tracks data based on a decentralised and transparent system. It is a chain of blocks that register and transfer information in a safe and auditable way, open to anyone. A system built on Blockchain does not have an institution or organisation as an intermediary such as a bank; the transactions occur directly peer-to-peer.



Centralised system Decentralised system

Bitcoin is a form of electronic cash, the most popular in the market, so using a bank transaction example will make it easier to understand how it works. Traditionally, in a

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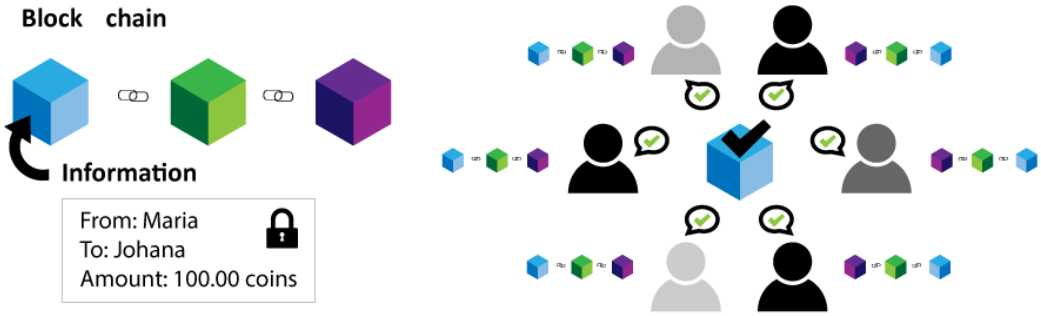
financial transaction, if someone wants to send money to another person, there will be a bank as an intermediary. The bank is the organisation responsible for making the transfer and guaranteeing it to both parts the sender and the recipient. Generally, as a bank service, it will be made based on the bank rules and fees, and the sender and recipient have neither control nor access to this information.

Otherwise, Blockchain allows every peer to access the information as a shared spreadsheet interacting, updating and validating a transaction. The data is recorded in blocks; each new information adds a new block in the chain in a chronological way where all further information is registered and never erased.

The Blockchain database is shared by all actors in the system, monitored by everybody and no one is the owner or controls it alone; each peer has a copy of the chain of blocks and a transaction will be completed only when everyone agrees on it. There is no need to trust other people because we will be relying on the system.



Blockchain has been considered a disruptive technology compared to the Internet, promising innovation in the financial and commercial area comparable to the impact that the Web had on communication. It stands to revolutionise the way we interact with each other based on three main concepts:

- Track and data store – the decentralised and distributed system across an extensive network of computers becomes a safe way to track data changes over time.

- Trust – it is the key concept. The system allows us to interact directly with our data in real-time and the network, all the computers verifies the changes in the transactions which creates trust in the data.

- Peer-to-peer transactions – in this system there is no more intermediaries. Instead of sharing our data with an intermediary such as a bank or a lawyer, we will share it directly with peers. It is a new way to access, verify and transact with each other.

Smart contracts are computers protocols based on Blockchain which aims to facilitate and verify deals going beyond buying and selling currency transactions. Its benefits include extensive instructions on agreements between two or more parties to complete or not complete a transaction, removing the need to trust the parties. In these contracts the "code is law", the established agreement will be done no matter what.

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The idea of transparency and peer-to-peer network control is easier to understand in a financial example, but it can be used for other transactions in other areas (health, property, vote) and with another currency trading. Anyone will be able to create tokens representing certificates, coupons, access rights, payments, or smart contracts that regulate the relationships between different actors in the legal and economic system.

The Blockchain is a promising technology for recording and tracking anything of value in a transparent, democratic and safe system. A completely public Blockchain allows everyone to view and access the data. A private system can select a group of users from an institution or organisation to view and/or edit data. And in a hybrid system, some peers can see all the data while others can see only selections; or all can see all the data, but only some can add new data.

Let's take a look at a final example. Registering land and property gives people proof of ownership, helps protect owner land from fraud and makes it easier to change, sell or give property or land away in the future. Usually, individuals can register a property themselves or get a solicitor or conveyancer to do it.

Now, imagine the government decide to implement Blockchain to record land and property data and transactions. It could be a hybrid system that combines two networks. One public network, where any citizen can see the boundaries of property information. The other network would contain the private information that is only accessible by a closed group like government administrators.

In the case of buying or selling a property using smart contracts (simpler, faster and cheaper) there will be no need to get an intermediary or a solicitor or conveyancer to register your property. Once the seller gets all the payments, or what is pre-established on a smart contract, the property registration could be transferred to the new owner. Technically, a new block with further information would be recorded on the chain of blocks keeping all the previous data on the land or property.

As you can see, it is just the beginning. There is a lack of opportunity to explore, experiment and build system using Blockchain. The benefit of implementing Blockchain methodology into the Public Administrations, is to enable the co-production on public services such as health, education, social welfare, and mobility.

Tags: CO3 project - Disruptive technology - Blockchain – Smart contracts - P2P

CONSORTIUM

Ten partners and five countries are working together

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Who?

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CO3 project is a European funded project in which 10 partners in 5 countries are working together.
CO3 is a participative and interdisciplinary project proposal that involves in its consortium: University of Torino (IT), LINKS Foundation (IT), Municipality of Torino (IT), Fundación Universitaria Balmes (ES), Institut de Recherche et d'Innovation (FR), OpenLab Athens (EL), City of Athens via DAEM (EL), Geomotion (ES) and FlexiGuided GmbH (DE).

PROJECT

CO3 project, Digital disruptive technologies to co-create, co-produce and co-manage public services along with citizens #H2020

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CO3, Digital Disruptive Technologies to Co-create, Co-produce and Co-manage Open Public Services along with Citizens, aims at assessing the benefits and risks of disruptive technologies, namely: blockchain, augmented reality, geolocated social network, liquid democracy tools and gamification, in the co-creation, co-production and co-management of public services with citizens as PAs partners. Augmented Reality becomes a single shared layer on the urban paysage and part of citizen's public life, AR enables manipulation of financial objects built on blockchains, information sharing on a map, online deliberations and so constitutes an infrastructure for service co-production by citizens. CO3 pilots the technologies' ecosystem of in three sites: Paris, Turin and Athens. It evaluates the outcomes of the new interaction model between PA and citizens under a set of metrics in three dimensions:
-Social and cultural: citizen engagement, change in relationship with public servants.
-Economic: value of services produced, effects on workplaces, consumptions and economic sustainability
-Legal: legal implications for PA including privacy and data protection.
CO3 will devise a business plan ensuring long term sustainability for the PAs on the basis of the metrics applied on the pilots' data.

Impacts
Enable Public authorities to develop pathways for the introduction of disruptive technologies while addressing societal challenges raised by such technologies.
Enhance knowledge on digital democracy based on a thorough understanding of users' needs and develop new ways of providing public services, of ensuring public governance and of boosting public engagement with the help of disruptive technologies.
Contribute to developing new practices, to optimize work processes and to integrating evidence-based decision-making processes in public services and in services such as health, education, social welfare and mobility.
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EUR 3.281,712
Duration: 3 years

State of the project

The CO3 consortium is currently working on two basic tasks: developing a platform and defining a strategy for engaging stakeholders. The CO3 project will take into account different users' perspectives and users' diversity by adopting a usercentred design approach. Workshops, focus groups or interviews, will help develop scenarios and revealing users requirements.

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State of the project

The three pilot sites in Turin, Athens and Paris will test the platform's expected outcomes (e.g. when it comes to the utility, usability, inclusiveness and reliability of individual features). Pilot site selection CO3 trials sites have been selected to reflect different contexts: each site starts its journey towards a more participatory economic model from a different departure point. This enables validating CO3 solutions with Public Administrations and stakeholders that have hitherto operated under different technological, administrative and political circumstances (e.g. ICT solutions already put in place). This will enable evidence-based learning about conditions for successful upscaling of the assessed technology ecosystem, which will again ultimately help in gaining a better – and context sensitive – understanding.

In the pilots, we will ensure the promotion of equality, diversity and inclusion towards the development of a socially just and sustainable ecosystem of service co-creation and co-production.

TURIN (IT)

Turin is a North Western Italian city, with a population of about 900,000 inhabitants, and 1.7 million people in the metropolitan area. For decades Turin had been an industrial city whose main production was cars around the internationally known factory FIAT. Since the nineties Turin has started a deep transformation from the industrial city toward a creative and smart city. The risk of protests against urban policies is becoming more urgent, and setting up procedures for new form of inclusive and participative welfare could be a valuable way to reduce that risk. The concept of urban regeneration adopted by the city of Torino thus implies not only urban planning and social, economic, environmental, cultural issues but also a greater participation by stakeholders in the decision-making policies, and active involvement of citizens and system that has always been a distinctive character of the area.

Turin is pursuing several initiatives and projects fostering a sustainable, intelligent and inclusive urban growth. To achieve this objective an integrated approach is crucial as well as a deep understanding of citizens needs and requests in order to address the urban development through a constant dialogue between citizens and institutions. Examples of the city's initiatives are the SMILE master plan for the Smart City, Torino Social Innovation, a public program with the overall objective of investing in young social innovators.

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Co-city project on urban commons, will constitute the background on top of which CO3 will be developed. It aims at the development of at least 25 commons in the peripheral areas of Turin. For 1 of them the project will identify a number of unused buildings with no market value and will restructure them. For 10 other commons the Municipality will put at disposal of commoners underused public services such as schools in the afternoon. Finally, citizens can propose other places to be used to create commons. Differently from traditional public tenders the public spaces will not be assigned to commoners on the basis of a competitive selection.

CO3 will provide its app to the commons developed in the Co-city project, to scale up their activities. The engagement activities will be carried out by the Network of Neighbourhood Houses (third party of CTO). The 9 Neighbourhood Houses in Torino are the instruments of the Municipality for promoting new welfare policies, experiment new form of direct democracy, improving social cohesion, and meeting citizens' availability to participate.

In CO3 the Neighbourhood Houses will continue the work of Co-city on the commons and will experiment the CO3 Prototype also on themselves coherently with their mission of experimenting new models of community welfare based on reciprocity and active participation of citizens in a horizon of social and solidal economy. The 8 Neighbourhood Houses engage around 400,000 participants each year, organize 420 events and collaborate with 150 associations and groups, thus ensuring a large participation to CO3.

Open Incet (Open Innovation Centre Torino) mission is to accelerate the local innovation ecosystem of the City, by engaging the stakeholders (public, business, academia and third sector/citizens) in the generation of innovative solutions. Open Incet is a public-private partnership: the local PA and eight private organizations manages the spaces, a former power cables factory revitalized.

The Open Incet pilot in particular will be based on its Crowdfunding services initiative addressing SMEs and citizens' projects: an augmented showroom will be provide evidence about the potential of Augmented Reality in creating awareness and enhance creative entrepreneurship in the field of Blockchain powered local economies.

Informagiovani is the public service of the City of Turin providing information and to youth as regards study and training opportunities, job placements, cultura events in the City, health, volunteering, international youth exchanges.

The University of Turin, as aforementioned in the "Colonization game" box, will provide other experimental sites starting from the Campus Luigi Einaudi.

ATHENS, (EL)

The economic crisis precipitated a drastic change in the stratification of Greek society, intensifying social inequality, exacerbating the threat of poverty and creating a new underclass of outcasts in large urban centers. The cumulative shrinkage of GDP by 25% from 2008 to the end of 2013 led to a dramatic spike in unemployment. The protests of 2008 in response to the imminent global financial crisis and to the privatisation of public spaces in Greece gave rise to the Greek solidarity movement (SM) in its current form. During that period a civic drive towards self-organisation, self-management and self-empowerment

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emerged with the (informal) establishment of several self-managed spaces, social centres and local citizen initiatives.

At this time, various sources suggest the existence of around 400 SMs: 40 solidarity clinics in Greece, with an average of 46 volunteers per clinic, and receiving regularly around 2000 visits per clinic per month; 47 food solidarity structures and 21 solidarity kitchens with around 56 volunteers per group, which for example, in 2014 distributed 4318 parcels of food fortnightly; 45 without middlemen goods distribution groups with more than 5000 tons of distributed products for the years 2012-2014. The operation of these informal urban movements in addition to the emergence of a new cooperative movement and the passing of new legislation for social enterprises in Greece, have created fertile grounds for experimenting with new forms of urban and digital commoning practices and the establishment of social and solidarity economy initiatives.

The use case scenario for the City of Athens focuses on "ad hoc / on demand" delivery of daily hot meals to people in need. The scenario aims to motivate the complete ecosystem of the city, namely households, public administration bodies, local groups of citizens and other solidarity initiative organizations, to respond to the challenge of delivering their daily food surplus, to residents of the city affected by the socio-economic and/or migration crisis. The pilot scenario shall be based on a "supply - demand" model, where the food availability (quantity) will correlate to the overall food delivery experience (quality). The state-of-the-art in Athens includes initiatives such as food-sharing by individual citizens and organized meals offering by diverse organizations to specific social groups (homeless groups, indigent groups, etc.). We will experiment the viability of CO3 technological implementation and evaluate its social acceptance and impact.

The process of the Athens pilot is launched at the moment that an active citizens/group of citizens share their excess food and place it in a specific location within the city. The AR interface of CO3 will allow end-users to insert the location trace in the interactive map, as well as to monitor similar food-sharing activities that take place in other locations around the city. For future activities, active citizens will be informed by the notification feature. In parallel, the citizens/group of citizens that are under nutrition needs can be notified in real time through the interactive map for ad-hoc food supply. In case of residents that don't acquire sufficient technology/devices a mediator by NGOs or municipal organizations will be in charge to inform the aforementioned group of citizens. An interactive map of food-supply points will be the outcome ensuring anonymity of the user that provides the meal as well as the user that consumes it. In case of end-users that don't acquire a smartphone to monitor the interactive map, a municipal service will be implemented as a food-supply info-point with screens that display the information.

PARIS. Etablissement Public Territorial Plaine Commune (FR)

The Etablissement Public Territorial (EPT) Plaine Commune is a French intercommunal public structure, with 9 cities, created in January 2016 as part of the Greater Paris and located in the district of Seine-Saint-Denis in the Île-de-France region. EPT Plaine Commune provides services to 408,000 citizens from more than 140 nationalities: urban planning, environment, housing, transport, economic development, employment, research and education, tourism, sports facilities, libraries.

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The CO3 Pilot will be inserted in IRI – Centre Pompidou's research programme "Contributive Learning Territory" created by ETP Plaine Commune, IRI (Centre Pompidou, Paris) and MSH Paris Nord. The project aims to involve researchers from different disciplines: lawyers, economists, mathematicians, biologists, engineers, sociologists, psychologists, philosophers, computer scientists, etc. They have the mission to deploy contributing workshops on the territory, by mobilizing different actors around common issues in order to develop and experiment new models of development centered on the notion of contributive economy: the model proposes to cope with the gradual automation of jobs by redistributing to the citizens the time saved, so that this time is put at the service of the development of their capacities and the sharing of their knowledge, in the framework of urban commons, collective projects, ecologically, socially and economically sustainable for the territories. A structure can be labeled as negentropic if it contributes to the implementation of a sustainable profit (social, environmental, economic) for the territory and if the jobs it proposes are an enabling activity mobilizing the practice of knowledge.

The goal of the project is, first, the formation of a local collective intelligence, by articulating the research activities with the administrative, economic and citizen life of the territory, using new types of social networks and new digital features promoting the participation of inhabitants in the research and circulation of knowledge, and facilitating the discussion and public debate of a large number of individuals and groups. Second, the development of processes of empowerment in the area, likely to give citizens the means to develop individual and collective knowledge.

The experimentations planned for the project pertain to the following fields:

Capacitation/Education: this experimentation brings together academics, parents' associations, national education officials, education professionals and digital platform designers.

Digital urbanity: in partnership with Orange, Dassault Systems and the Public French Bank Caisse des Dépôts, this experiment will involve architects and urban planners, engineers, anthropologists and sociologists, associations of co-construction and contributing housing, building and construction companies such as VINCI.

Local and informal jobs: this experimentation brings together sociologists, economists, companies, associations, third-places, workshops and "fab-lab" of the territory and inhabitants.

Finance and accounting: in partnership with Bank Société Générale, this experiment aims to reflect on new modes of financing, investment and credit allowing the implementation of a contributive economy, which presupposesnew criteria and measurement indicators and new models for calculating value, making it possible to take into account the negentropic/contributive potentials of companies for the territory, by measuring in particular the production of societal value and the sustainability of the economic activities implemented.

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CO3 WORKSHOPS

CO3 project - gamification workshop

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Gamification is one of the disruptive innovations that the CO3 project addresses. In order to collect inputs and ideas and to map them on the City of Turin territory, a workshop on Gamification has been hosted by the School of Management and Economics of the University of Turin, co-organized with LINKS Foundation. The "Gamestorming" workshop has involved about 100 students of Sociology of Economics, that have been introduced to the Gamification basics and invited to design innovative gamified services. Divided in 10 groups, the students have worked in a hands-on modality to develop the core components of gamified services starting from the scenarios of CO3 project: Social Welfare, Civil work, City making, Place caring and information, education and cultural innovations.
Città di Torino, partner of the CO3 project has been invited and participated to the final presentation of the 10 resulting concepts, that will inspire further analysis and integrations of the CO3 project.
The activity has been possible thanks to the invitation of Prof. Giorgino of the University of Turin and the collaboration of the students.

EVENTS

Discover events like conferences and workshops related to disruptive technologies 2019/2020

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The CO3 project is meant to work with Citizens and Open Public services. The partners will hold a series of thematic workshops as well as other events intended to facilitate healthy debate and the exchange of ideas, in Paris, Turing and Athens. The agenda is under preparation; meanwhile you can find conferences, journal calls, networking and other workshops relates to disruptive technologies on the CO3 project website.

Join the community at one of the upcoming events.

BLOG

Debates at the Blockchain workshop
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Media coverage of the different debates at the “Reconsidering Blockchain” workshop

Introduction
Vicent Puig introduces the different invited speakers of the workshop. Guido Boella introduces the objectives of the CO3 project.

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Video

From redistributive urban commons to cosmo-local production commons
Michel Bauwens (P2P Foundation / Smart.coop) speaks about urban commons, also linked to the blockchain: "From redistributive urban commons to cosmo-local production commons".

Video

Big Data and Blockchain
Armen Khatchatourov speaks about Big Data and the Blockchain.

Video

Key concepts summary
Bernard Stiegler sums up the key concepts emerged during the morning presentations linking them to the objectives of the Plaine Commune and CO3 projects

Video

Presentation of the CO3 Project
Guido Boella (University of Turin) presents the project and the technologies that will be developed and tested on the Plaine Commune territory, within the CO3 project.

Video

The real virtuality panacea
Diego Di Caro speaks about the Blockchain technology and the political and economical potentialities enabled by this ontological breakthrough in the history of writing.

Video

The Regen Network
Will Szal speaks about the Regen Network project (https://www.regen.network/). He proposes a remedy to ecological degradation and climate change, using the Blockchain to create a systemic multi-stakeholder, market-driven solution to facilitate verifiable ecological outcomes, creating a trusted infrastructure for an ecological accounting ledger capable of rewarding ecological regeneration through smart contracts.

Video

Addressing relational work in co-designing collaborative and commons-based ecosystems with the Blockchain
Prof. Vincenzo Giorgino (Un. of Torino) speaks about "Addressing relational work in co-designing collaborative and commons-based ecosystems with distributed ledger technologies".

Video

Blockchain technology: environmental (applications and) implications

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Jean-Claude Englebert focuses on the Blockchain technology from an environmental point of view, stressing out the importance of a non-ideological (technophile or technophobie) analysis of this new technology.

Video

Final discussion
Final discussions of the assistant's, different synergies emerge, and also evident collaborations between partners are seen.

Video

YouTube – discover CO3 project channel