



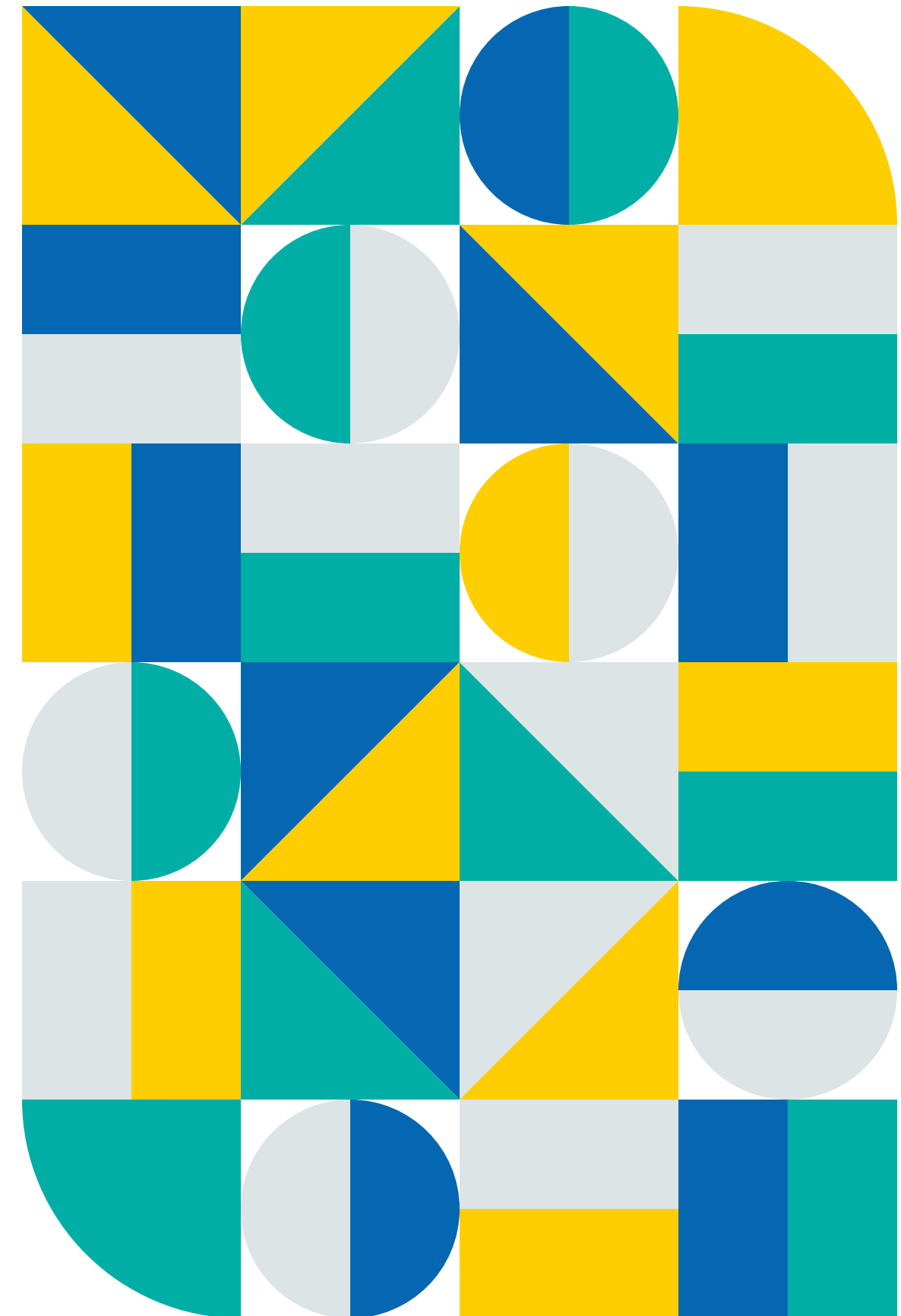
# The transformative impact of distributed technologies in public services

Easing the adoption of Decentralised Ledger Technologies (DLTs) as drivers for far more open, transparent, trusted and efficient public services

[#trustworthiness](#) [#transparency](#) [#privacy](#) [#efficiency](#)

[🌐 Token Website](#)

[🌐 DLT4Gov Community](#)





We envision **Blockchain** and **Distributed Ledger Technologies** as the cornerstone of future innovation, enabling secure processes that will transform public services, and in turn, solve issues related to trust, transparency and privacy.

The Token ecosystem will ease the adoption of such technologies by providing public administrations with **"Public Service Ready"** components and prove its added value via replicable Pioneer Use Cases.

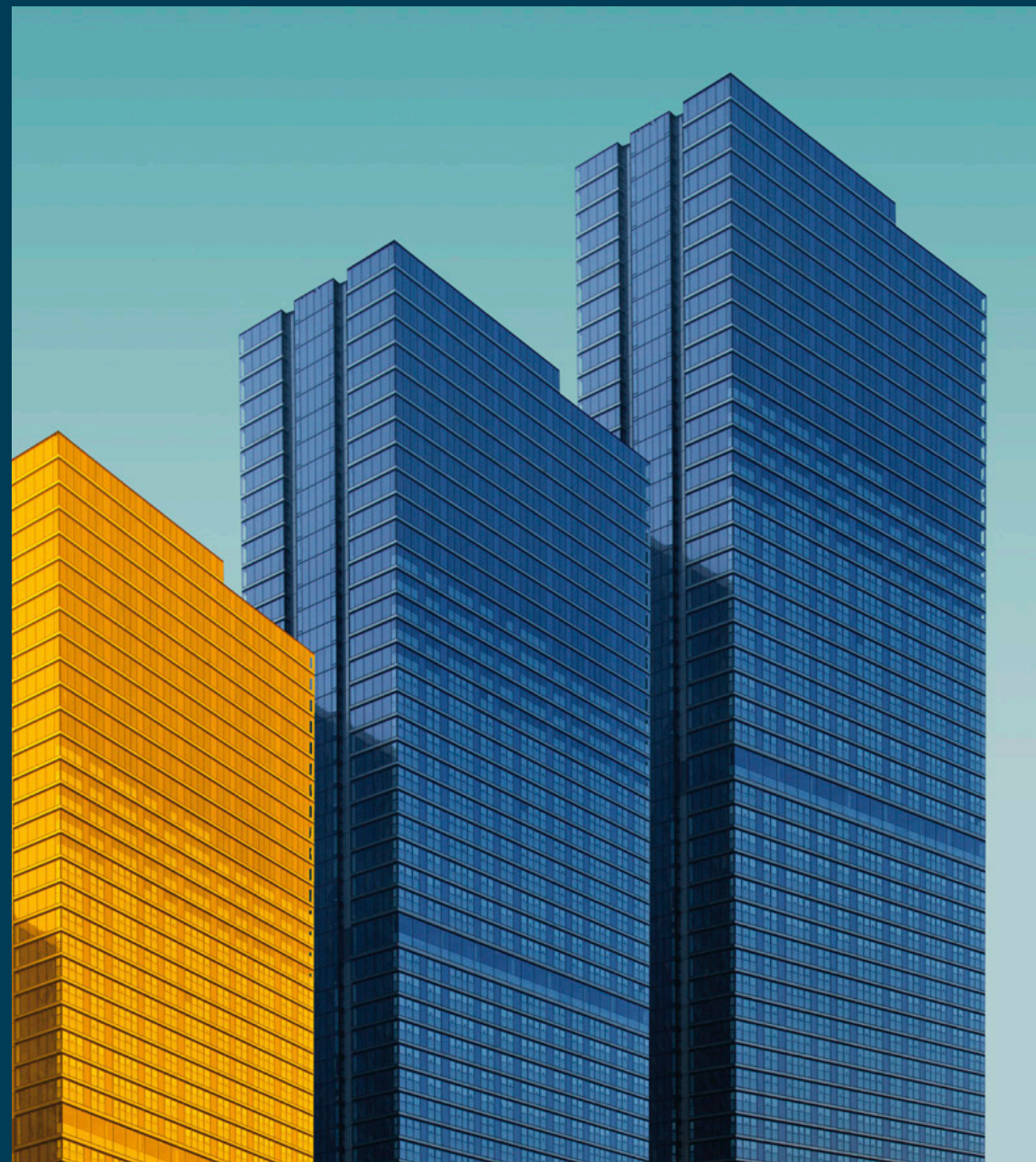






# Introduction

Public expenditure budgeting is a common concept, virtually present in most nations, regardless of their government form or state of development. All in all, it is not without its constraints as citizens often have divided ideas on how the taxpayers' money should be spent. When combined with the rapid transformation of our society and the current digital revolution, budgetary pressures further pose challenges for governments and the future of public services. The transformation into a more open, transparent and collaborative environment comes with many challenges, from a technical, political, legal, organizational and cultural standpoint. But things are gradually changing. We are now facing a paradigm shift that implies a change in both government and institutional culture. Public administrations need to adjust their internal processes, empower their civil servants and



facilitate approaches to co-creation. In order to make the effort worthwhile, they need to ensure that all actors are embracing the changing process.

There is no doubt that Distributed Ledger Technologies can transform the value chain and the relationship between actors, delivering new solutions to the complex problems that governments are facing. In order to succeed in the adoption of disruptive technologies, public administrations need support and guidance to better understand the gains and constraints that such technologies may bring. They also need access to critical skills and sandbox environments that may help them to assess the value proposition and the potential impact of the technology uptake. Moreover, the budgetary pressure also requires a low-cost approach in the experimentation phase.





# Mission

## Easing the adoption of Decentralised Ledger Technologies

Token will provide **Open Source enablers** and **cloud service infrastructure** to facilitate the use of **DLTs** and hence, transform public services into an **open and collaborative government model approach**.



### Human-centric and cost-effective

The **Token ecosystem** will allow proofs of concept exploiting DLTs, understanding users' needs, testing and sharing the results and jointly evaluating their impact in a cost-effective manner.



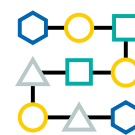
This will help public administrations to cope with the **challenges imposed by the digital transformation**, enhance the knowledge available on digital democracy, develop new ways of providing public services as well as ensuring public governance and public engagement.





## Decentralised architecture

Connect with any blockchain or DLT infrastructure, with the **European Blockchain Service Infrastructure (EBSI)** as the main reference.



## An experimental ecosystem

Delivering public value via highly replicable use cases that will demonstrate the ability of different actors to **share, interact and collaborate with one another**.



## Public service sandbox infrastructure

Public authorities can then test new processes and approaches that are required for a decentralized, cross government and multi-actor architecture, combining the best of Distributed Ledger Technologies with **IoT (Internet of Things), big data and cloud technologies**, whilst also addressing **security, privacy and data protection requirements**.



## Toolkit for policymakers

**Ready-to-use guidelines** and recommendations highlighting some of the technical, cultural, socio-economic and legal challenges that can arise when using and adopting DLTs.



## Bottom-up approach

- **Impact assessment:** gathering users' needs when designing infrastructure, use cases and pathways for sustainability.
- **Inclusive distributed governance model:** a new democratic method of managing digital infrastructures, taking into account users/citizens' views when setting out the rules for the technical evolution and maintenance of the Token Platform.
- **Pioneer use cases:** demonstrating new ways of providing public services through the adoption of DLTs to encourage interaction, experimentation and cross-learning, which, in turn, increase citizens' awareness and public engagement.





# Project Roadmap

## PHASE 1

### Technology readiness

This phase will deliver tools, based on decentralized and distributed technologies as well as free, Open Source components that will leverage state-of-the-art cryptographic techniques such as Distributed Ledger and Attribute Based Credentials. This phase will also focus on secure data storage, control and transparency with regards to data sharing.

## PHASE 2

### Effectiveness and impact assessment

Four pioneer use cases on public funding distribution, public accounts management, urban logistics and data valorisation.

## PHASE 3

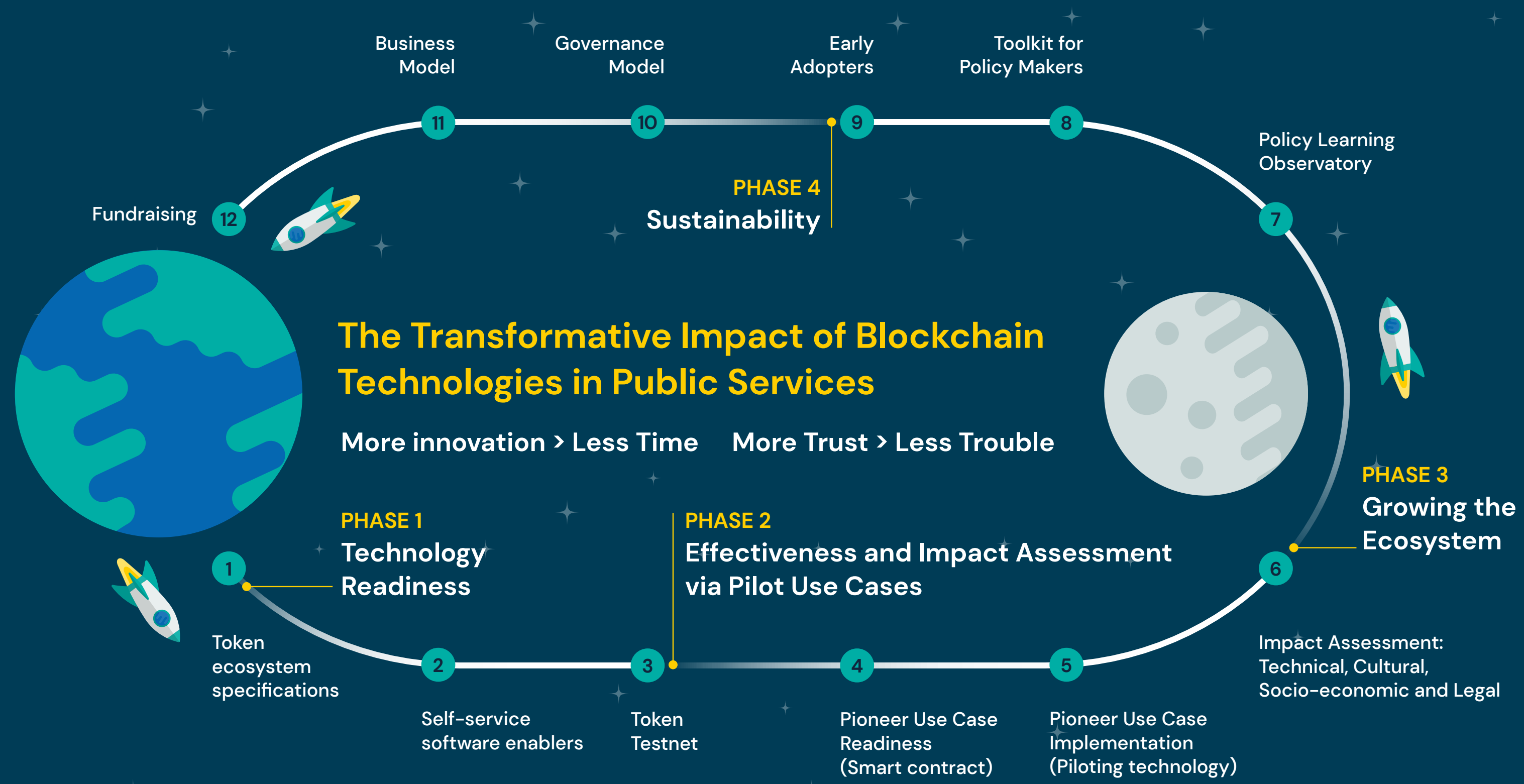
### Growing the ecosystem

This phase will gather a pan-European wide community of early adopters to examine the impact of adopting DLT in the public sector. It will include researchers, policymakers, technologists, developers, civil servants, and hi-tech entrepreneurs who are experts in the field of 'Tokenization of the Public Services'.

## PHASE 4

### Sustainability

The sustainability of the Token Platform will be ensured by the creation of an open commons business model and a governance model.







# Benefits

## EFFICIENT



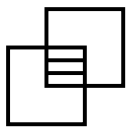
Free/Open Source modules  
DLT & Blockchain agnostic  
Added value through Pioneer Use Cases  
EBSI principles

## TRUSTWORTHINESS



Human-centric  
Next Generation Internet (NGI) values  
Privacy by design

## TRANSPARENCY



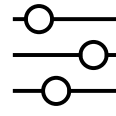
Open and collaborative  
government model  
Decentralised & P2P accessibility  
Token Data Broker

## PRIVACY



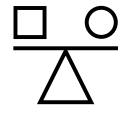
Privacy by design  
GDPR, KYC and AML compliant  
Self-sovereign principles

## FLEXIBLE



Modular, interoperable  
and transversal  
Decentralised and federated  
Bottom-up approach

## SUSTAINABLE & COST SAVVY



Open commons approach  
Avoiding vendor lock-in scenarios





# Use Cases

## Pioneer Use Cases

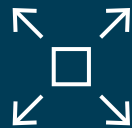
The Token bottom-up approach includes the implementation of four specific cases of public service transformation via the adoption of DLTs to stimulate **interaction, experimentation and cross-learning**.

DLTs have the potential to allow public service to improve effectiveness; reduce friction between agencies; reduce bureaucratic barriers; boost public engagement; enhance digital democracy and transparency; improve knowledge sharing; and foster automation through smart contracts.

PUCs (Pioneer Use Cases) will streamline bureaucratic and procurement processes, and increase transparency by creating interoperable public services in which citizens regain control of their data. Value will be ingrained in adaptable technologies, accounting for self-sovereignty, interoperability and modularity for services such as public funding distribution, transparent management of public accounts, last mile logistics in Smart Cities and market valorisation of data generated in the public domain.



# The Impact of the Use Cases



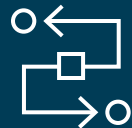
Potential for scalability and replicability in public agencies across Europe.



Addressing the legal and regulatory aspects related to data sharing and privacy.



Technology standardization and orchestration by building upon IoT, and big data standards for Smart Cities such as FIWARE.



Better understanding of how public services are delivered, and the implications of DLT adoption when public value is provided through PPP (public-private partnership), local and regional governments.



Connection to a wide range of public services' user groups and stakeholders such as: civil servants, researchers, entrepreneurs, citizens, service/logistic operators and policymakers.



## Public Funding Distribution



## Public Accounts Management



## Urban Logistics



## Data valorisation services

### OBJECTIVE

Bringing experience in cascade funding projects.

### BENEFITS

Reduced administrative burden, increased transparency and complementarity.

### PUBLIC SERVICE

Grant distribution via competitive open calls.

### PROBLEMS TO BE SOLVED

Red-tape burden, lack of transparency and trust, data silos, double granting, biased distribution.

### SERVICE OPERATOR

Public Private Partnerships among EC and not-for-profit.

### EARLY ADOPTERS

The European Commission, Ministries and regions.

### OBJECTIVE

Incorporating blockchain into active Smart Cities projects in Central Macedonia: Municipality of Katerini (MUKA).

### BENEFITS

Saving costs and time, increased trust, real time expenditures, audit trials, blockchain-based E-voting system for citizens.

### PUBLIC SERVICE

Public procurement.

### PROBLEMS TO BE SOLVED

Red-tape burden, lack of transparency and trust, data silos, double granting, corruption.

### SERVICE OPERATOR

Katerini Municipality.

### EARLY ADOPTERS

Public authorities in general.

### OBJECTIVE

Assessing the specific value of DLTs for urban mobility.

### BENEFITS

DLTs and IoT for more efficient logistics service and pricing. Greater customer satisfaction; and less congestion for the city.

### PUBLIC SERVICE

Mail post / mobility.

### PROBLEMS TO BE SOLVED

Last mile logistics in Smart Cities, automation of delivery processes.

### SERVICE OPERATOR

Public Private Partnership among Ministry-city and business operators.

### EARLY ADOPTERS

Smart Cities.

### OBJECTIVE

Improving citizens' lives whilst also increasing urban services efficiency and exploring new economic models, based on data valorization.

### BENEFITS

A transparent solution to the evaluation and valorisation of the use of data by third-parties, regardless of who owns the data.

### PUBLIC SERVICE

Smart City services.

### PROBLEMS TO BE SOLVED

Market valorization of data sets generated by Smart City IoT Platforms.

### SERVICE OPERATOR

Santander Municipality (Spain).

### EARLY ADOPTERS

Smart Cities.





# Community

Token is also an innovation hub for those interested in how decentralised technologies impact and improve public organizations.

The Token Community, also called **DLT4Gov** (decentralised technologies for governments), is at the heart of the Token activities: Its purpose is to share knowledge and best practices among the Community members, guiding and connecting researchers, policymakers, technologists, developers, civil servants, and hi-tech entrepreneurs, who are experts in the field of “Tokenization of Public Services”.

Our Community members actively engage with one another and share activities and news, aimed at creating awareness about the vision and scope of the Token project.

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# Who should join and why

WHO	WHY	WHAT FOR
Developers and CTOs working in public agencies or for IT providers/operators of public services	To find out about the new ways of improving and innovating the services they are developing or already providing	Get inspired
European policymakers and regulators focusing on policies addressing the digitisation of the public sector, the potential of blockchain and digital sovereignty in general	To discover innovative approaches to overcome current barriers and obstacles for better services to citizens	Find solutions
Researchers working on the transformation of public services or in fields such as blockchain, digital sovereignty, Smart Cities	To explore wider ways of applications of their research	Find new application domains
Public services workforce (civil servants, external contractors/agencies and so on)	To share their experiences and perspectives	Help us to understand what the real needs are
Social representatives (e.g.: NGOs, citizens associations, political parties, etc.)	To have both a social and citizens' point of view taken into account	Get represented
Influencers (e.g. representatives of associations working towards digitalizing the public sector, think tanks, accelerators, incubators, etc.)	To expand their digital network/knowledge	Join a key topic
IT startups, developers and innovative SMEs	To get firsthand experiences that they can use in their product development	Bridge the gap between business and people
Anyone else who is keen to share information, network, research, and learn about the DLT4Gov	To stay updated about the latest in this topic and expand their network	Let's do it together!



Share your insights with us  
if you think you can contribute  
and help in any way!

Be part of the conversation and join the Community

JOIN DLT4GOV COMMUNITY







# Partners



FIWARE Foundation e.V.



FundingBox Accelerator  
SP Zoo



Interuniversity  
Microelectronics Centre



Vlaam Instituut Voor  
De Logistiek VZW



Information Technologies  
Institute



Demos Helsinki



Infrachain A.S.B.L.



Municipality  
of Santander



University  
of Cantabria



Municipality  
of Katerini



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Token has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement no 825268.