Whitepaper

Hyperledger Public Sector White Paper

7. Glossary

7. Acknowledgement

1. Introduction

Purpose of This Paper

Government has served an important function, to maintain trusted information for member of its society. Blockchain technology can revolutions how agents collect and process information. We believe the future will involve a world with many interconnected distributed databases and blockchains, each of which will be specialized to suit the purposes of its users, In this interconnected world, it is the role of the Public Sector to define and facilitate these relationships.

The purpose of this paper is to derive pathways for the Public Sector when discovering the benefits of Blockchain Technology When discussing Blockchain thru a Public Sector lens, (3) important segments need addressing: (1) Identity Management for Public Sector

(2) Compliance, as seen though government transaction ,and/or viewed thru the Highly regulated transaction, and (3) Governance . These areas we see the most benefits blockchain can effect.

We will describe Use cases to show how blockchains are being utilized to improve the public sector. How tools can help across governments World wide efforts . This whitepaper will tackle the issues by looking at the problem facing the Public Sector and what is being done today and what will our recommendation for government when adopting blockchain in the public sector.

Intended Audience

Across Governments [state the intended audience as precisely as possible. For most white papers, this will be a technical audience, not a business audience. Does their level of technical understanding matter? Are there some matters they should already understand before they can get anything from the current document? Can we point them to this kind of prerequisite information? Does it matter which framework(s) they are using: Fabric, Indy, Sawtooth, etc? Does it matter what issue they are trying to understand: security, interoperability, etc?]

1.1 What is Hyperledger

Background

Blockchain is an emerging technology pattern that we believe can radically improve banking, supply-chain, and other transaction networks, creating new opportunities for innovation and growth while reducing the cost and risk of related business operations. With the rapid emergence of Bitcoin in the transactions domain since 2009, many businesses and industries have invested significant resources in investigating the underlying technology that powers the popular, yet controversial, cryptocurrency.

Blockchain is a peer-to-peer distributed ledger technology that first gained traction in the financial industry because of its capacity to issue, trade, manage, and service assets efficiently and securely. The distributed ledger makes it easy to create cost-efficient business networks without requiring a central point of control, in marked contrast to the world of SoR (System of Records), where every member in the ecosystem needs to maintain its own ledger system and reconcile transaction updates with one another in inefficient, expensive, and often non-standardized inter-organizational operation flows.

As the shared ledger concept gains traction in the business world, blockchain smart contracts are also getting a lot of attention from industry. A smart contract is a collection of business rules which are deployed on a blockchain, and shared and validated collectively by a group of stakeholders. A smart contract can automate business processes in a trusted way by allowing all stakeholders to process and validate contractual rules as a group.

Bitcoin and other cryptocurrencies were designed to be completely open, decentralized, and permissionless: anyone can participate without establishing an identity; one only has to contribute by spending computation cycles. Under the Bitcoin model of blockchain, there is no central authority that controls admission; these networks have been called permissionless. Bitcoin is costly to operate because it requires innumerable proof-of-work computations.

Hyperledger takes a much more flexible approach to consensus than the traditional blockchain model. We expect most--but not necessarily all--of our use cases to require permissioned blockchains, something that cryptocurrencies do not directly support. However, we expect that even some of the use cases of permissioned blockchains will require different consensus algorithms. For instance, round-robin consensus may be sufficient for certain small, highly trusted blockchains, while other blockchains may require Paxos or PBFT variants. For this reason, Hyperledger includes support for modular, plug-and-play consensus. This modularity gives Hyperledger the potential to save computation cycles, scale efficiently, and respond to the multitude of enterprise use case requirements by providing a secure, robust model for identity, auditability, and privacy.

What is Hyperledger

Hyperledger is an open source collaborative effort created to advance cross-industry blockchain technologies. It is a global collaboration, hosted by The Linux Foundation, including leaders in finance, banking, Internet of Things, supply chains, manufacturing and technology. Hyperledger, as part of the Linux Foundation, provides technology leaders a uniquely open and collaborative international community from which to develop, validate, and field enterprise-grade blockchain technology solutions.

FIGURE 1: THE HYPERLEDGER GREENHOUSE STRUCTURE

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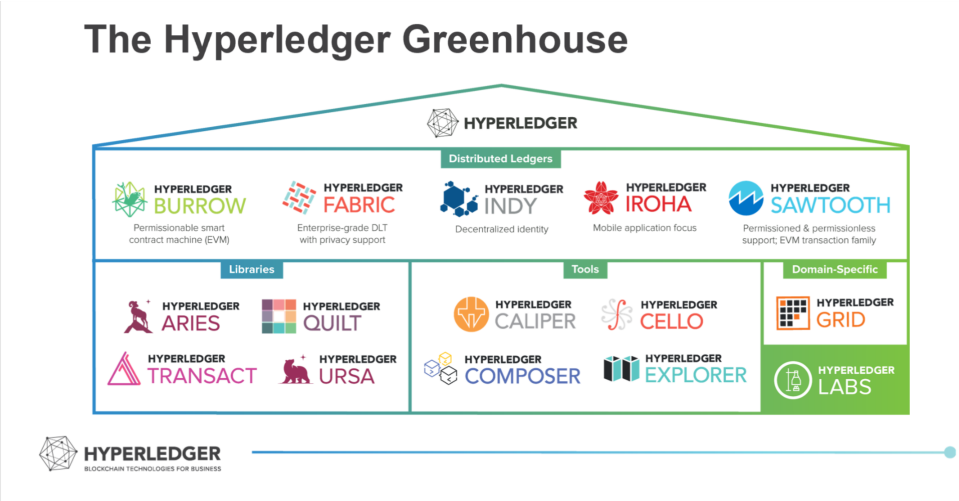


Table 1: Summary of Hyperledger Frameworks:

FRAMEWORK	BRIEF DESCRIPTION
HYPERLEDGER FABRIC	A platform for building distributed ledger solutions with a modular architecture that delivers a high degree of confidentiality, flexibility, resiliency, and scalability. This enables solutions developed with HyperledgerFabric to be adapted for any industry.
HYPERLEDGER SAWTOOTH	A modular platform for building, deploying, and running distributed ledgers. Sawtooth features a new type of consensus, proof of elapsed time (PoET) which consumes far fewer resources than proof of work (PoW).

1.2 Public Sector:

Public Sector

Definitions

Public sector organisations are businesses set up with the **aim** of providing a **public** service rather than making a profit., existing in all three layers of government (Federal. State Local)

Public Sector is usually comprised of organizations that are owned and operated by the government and exist to provide services for its citizens, instead of working toward the goal of collecting a profit, public sector entities seek to provide services, regulate activities and enforce laws.

1. Funding for public services are usually raised through a variety of methods, including taxes, fees, and through financial transfers from other levels of government
    a. Examples of organizations in the public sector include:
        - Education (Schools, Libraries)
        - Electricity
        - Emergency Services
        - Fire Service
        - Gas and Oil
        - Healthcare
        - Infrastructure
        - Law Enforcement
        - Police Services
        - Postal Service
        - Public Transit
        - Social Services
        - Waste Management
    b. .

1.3 IMPACT STATEMENT:

IMPACT STATEMENT:

Blockchain technology is relatively new technology and is in its very early stages of adoption. Questions need to be answered as to how the Public Sector and related industries can leverage blockchain technology in various verticals. While there is a great hype and interest in the technology it is critical to ensure that initial deployments consider right use cases to demonstrate the effective use of technology.

The intent of this document is to help shape the role blockchain technology can have in optimizing what government can do for its citizens. By delving into three areas (Identity, Compliance issues and Governance) we will draw conclusions as to how to structure blockchains, develop programs, and run these new system to best aid citizens the derive the optimal success. If we understand how current use cases are leveraging this technology we can devise standards and guidelines for governments on all levels to implement.

1 Identity Management in Government

2. Interactions

3. Compliance

4. Governance

2. Public Sector Environment

2.1 Identity management for Governments

2.1 What is Identity Management in dealing with the Public Sector

Conclusions From SOVRIN FOUNDATION presentation

CROSS BORDER ID credentials.

No personal information interoperability and privacy management DID .

Information should not leave the boundaries (geo fencing) Cross countries boundaries.

Interoperability and privacy [If you need to list several points, consider using a set of bullets:

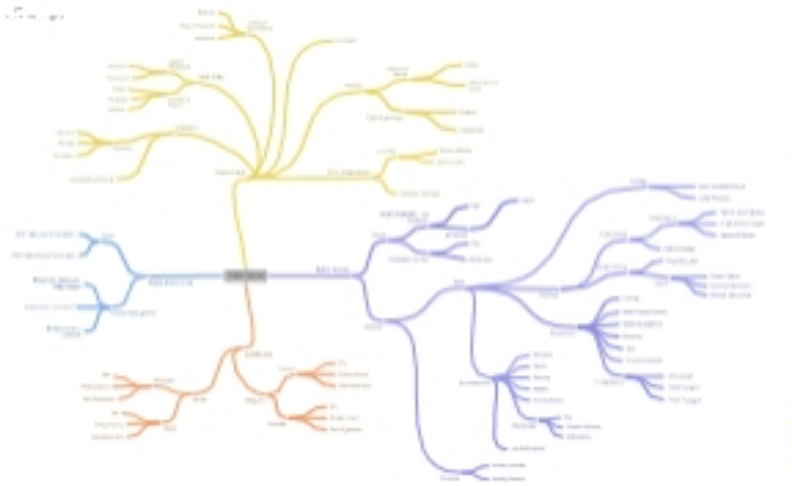
- People
- Places
- Things - IOT

2.2 Interactions (Highly Regulated Transactions)

2.3. Regulations

2.4 Compliance / Governance

3. **Public Sector Mapping**



4. Use Cases

5. Conclusions

This white paper explained... [sum up the white paper briefly. This section “tells them what you told them.” Although this may seem repetitive, some people flip to the back of a document to see “the bottom line” and what they might have missed.]

Further Resources

[In this section, list any further resources or interesting reading that might illuminate the topic more. Include enough detail so that a reader could easily locate that source, including URLs if appropriate.]

Notes

.01 VN.N published May,2019.

Acknowledgements

[list all the contributors to the white paper in alphabetical order by **LAST name. Many working groups keep a list of members or contributors on their wiki pages or their minutes. Don’t include anyone’s name without their okay.]**

[Although GDocs can’t do Endnotes, the designer will move all your footnotes here. In every footnote, provide the AUTHOR(s), the article or document TITLE, the PUBLISHER, the DATE, and if you have it, the PAGE NUMBER. For a website, include the URL and RETRIEVED ON DATE.]

Public Sector SIG Whitepaper

- Created by Marta Piekarska on Monday, February 4, 2019

What should be the topic of the first Public Sector SIG Whitepaper? Please indicate topics of interest and willingness to work on it

Overview of the Public sector space. Who is doing what and where?	14%	2 votes
Potentials of Blockchain Technology for Public Sector: study of usecases looking forward.	29%	4 votes
Analysis of blockers and challenges for adoption of Blockchain in Public Sector.	14%	2 votes
Certain Aspect of Public Sector space and usage of Blockchain for it (passports, land titles...)? Name one.	14%	2 votes
Will you be available to work on it?	29%	4 votes

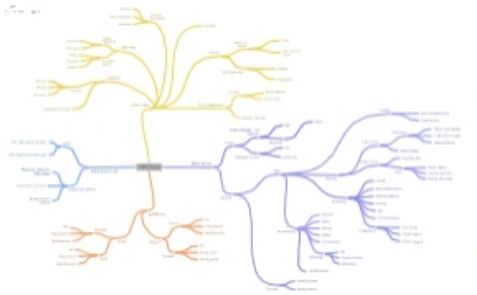
You voted on Friday, February 8, 2019

Standards Contributed by Learning Materials Development Working Group, Gordon Graham and Bobbi Muscara

2 Comments

1. **Alfonso Govela**

   A Mind Map to start our collective definition of "Public Sector" for our White Paper

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