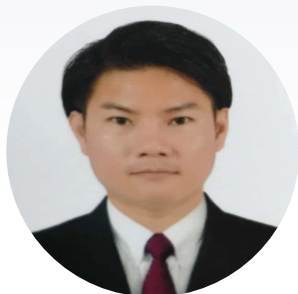# Data Exchange Platform for SMEs in Southeast Asia through Blockchain Technology

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Outline

- Problem Statement
- History
- Technology Proposal
- Potential Challenges
- Moving Forward

How big is the SME industry in SEA?

2010-2019 Data	Percentage Share
Number of SMEs to total enterprises	**97.2%**
SME employees to total employees	**69.4%**
SME contribution to national GDP	**41.1%**
SME export to total export value*	**20.4%**

SME is the backbone of Southeast Asia's growing economy

*2010-2018

SMEs in Southeast Asia have **limited** **access to data**
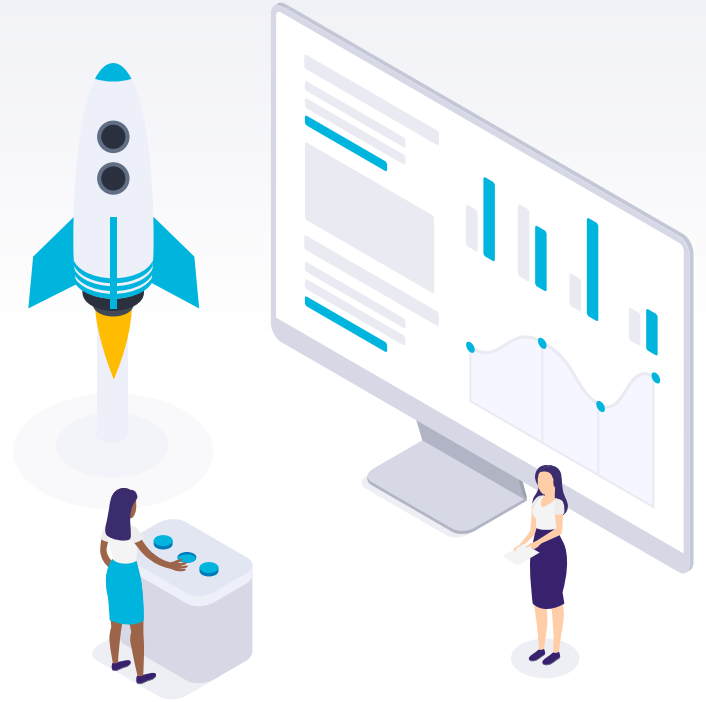
HISTORY

How are they trying to resolve this in the past

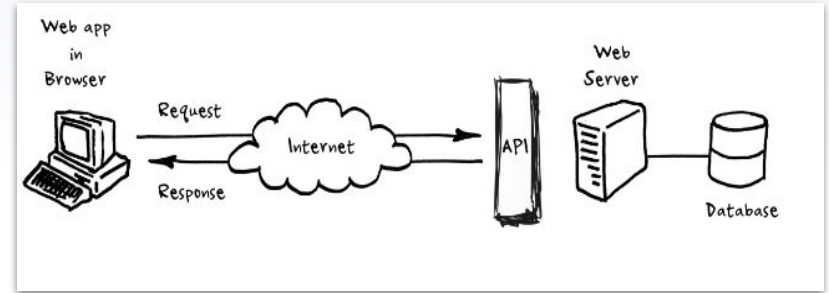Traditionally, data exchange depend on how a data exchange occurs, a few types are mentioned below:

- ▸ Peer-to-peer data exchange
- ▸ Private data exchange
- ▸ Electronic data exchange

Recent history of Data Exchange technology

File Transfer

Application Programming Interface (API)

Challenges and risk of recent technology

▸ Security risks

▸ Unethical data usage

▸ Expensive

TECHNOLOGY PROPOSAL

Data Exchange Platform

THROUGH BLOCKCHAIN

Business Model

To access/consume data of other SMEs, one must contribute their own data too

Data Type: public and fact-level; ready to be used

Data Quality: based on crowdsourced reputation

Run by: Private Entities

Technology

Blockchain:

- Blockchain is a **secure** decentralised database technology. As such, blockchain-based products can become a major tool to ensure protection of sensitive data, as well as enhance accountability and trust among parties.
- Blockchain-as-a-service (BaaS), the combination of cloud computing and blockchain, is an offering that allows users to leverage cloud-based solutions to build, host and manage their own blockchain apps, smart contracts and functions on the blockchain.

The Architecture of BaaS

14
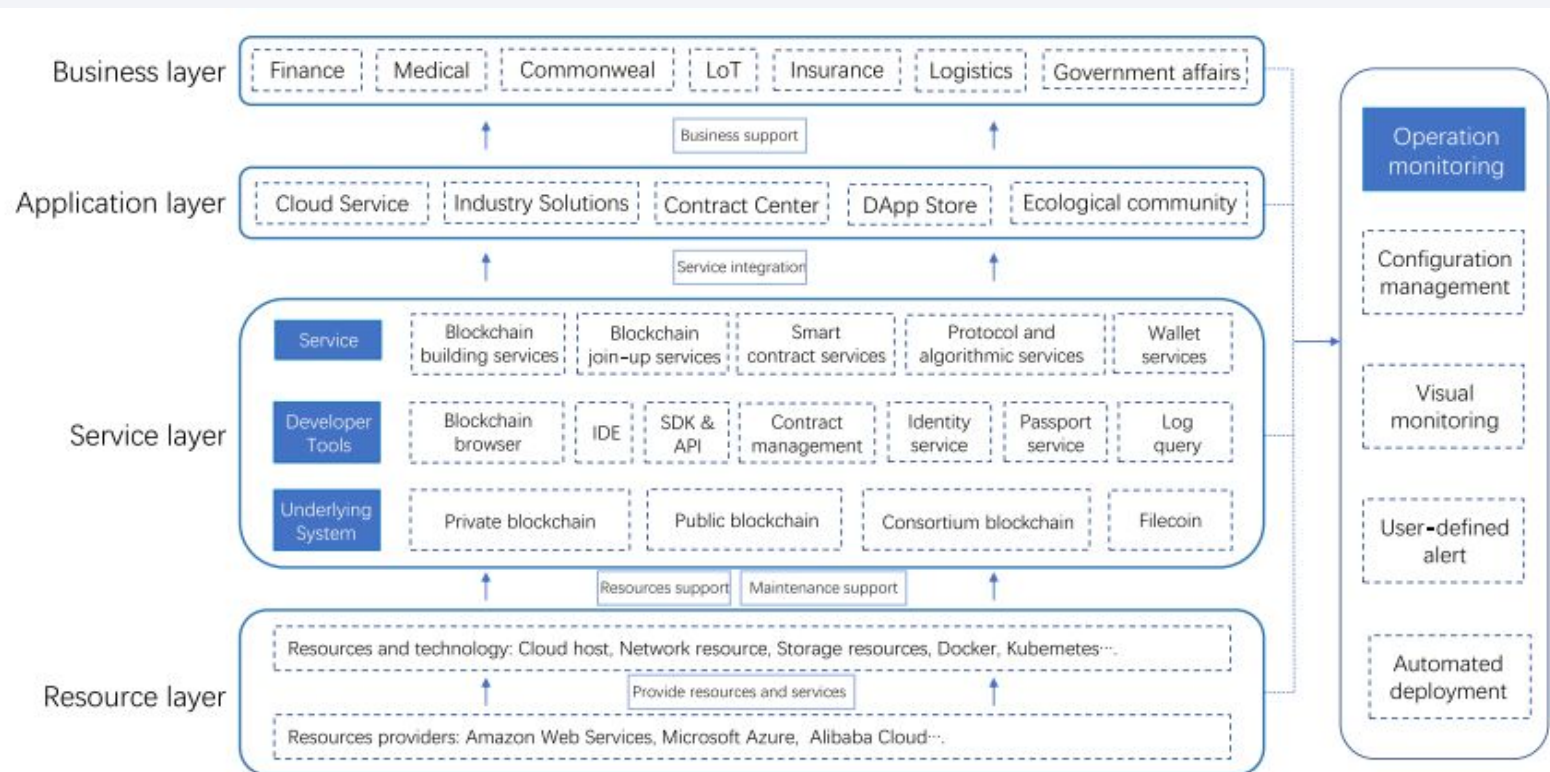
User-controlled privacy data exchange architecture
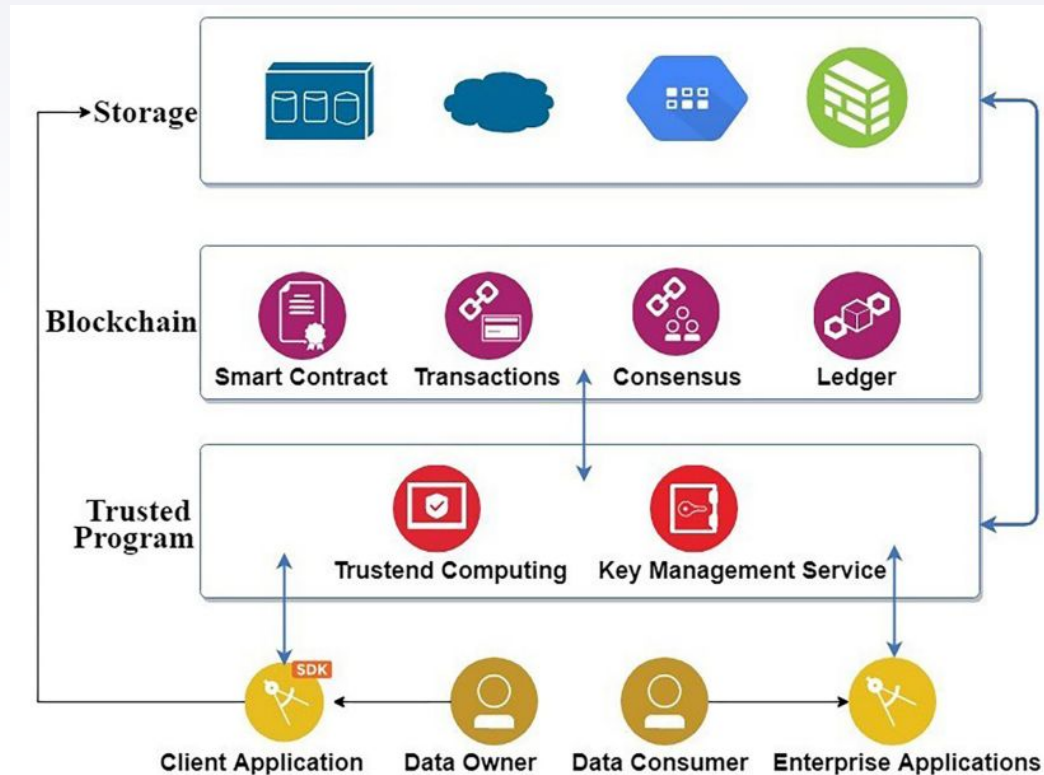
Token Model Explanation

CHALLENGES

The main issues of concern in the implementation of this technology are the complexity of implementation, the lack of trained professionals, processing times and cybersecurity

(Knight, W. (2017), "The technology behind bitcoin is shaking up much more than money", MIT Technology Review, Boston, Massachusetts Institute of Technology (MIT), 18 April)

Challenges from the SMEs side

- Interoperability between Systems
- Knowledge about Wider Use of Technology
- The Trust on Technology
- Resistance to Change
- Time to adapt

=> The platform has a large responsibility of educating the business

Legal Implications

The ASEAN leaders issued a statement on cyber security cooperation in addition to ongoing efforts to foster regional cyber security cooperation.

- ▶ In Vietnam and Laos, there is no law that regulates blockchain industry
- ▶ Philippine laws do not extend beyond cryptocurrency; There is Data Privacy act as well
- ▶ Personal Data Protection Act in Malaysia has limited provision for blockchain
- ▶ In Indonesia, the Minister of Communication and Informatics issued a regulation specifically for the protection of personal data that is contained in an electronic system

=> ASEAN would be required to be compliant with the General Data Protection Regulation (GDPR) of EU or need to build their own GDPR.

ASEAN member states regulatory tools to handle surging blockchain technology

Availability of Regulation tool in SEA
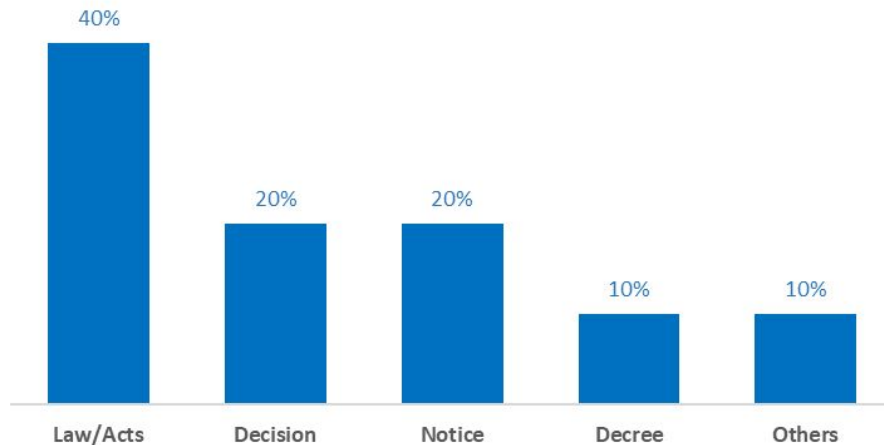
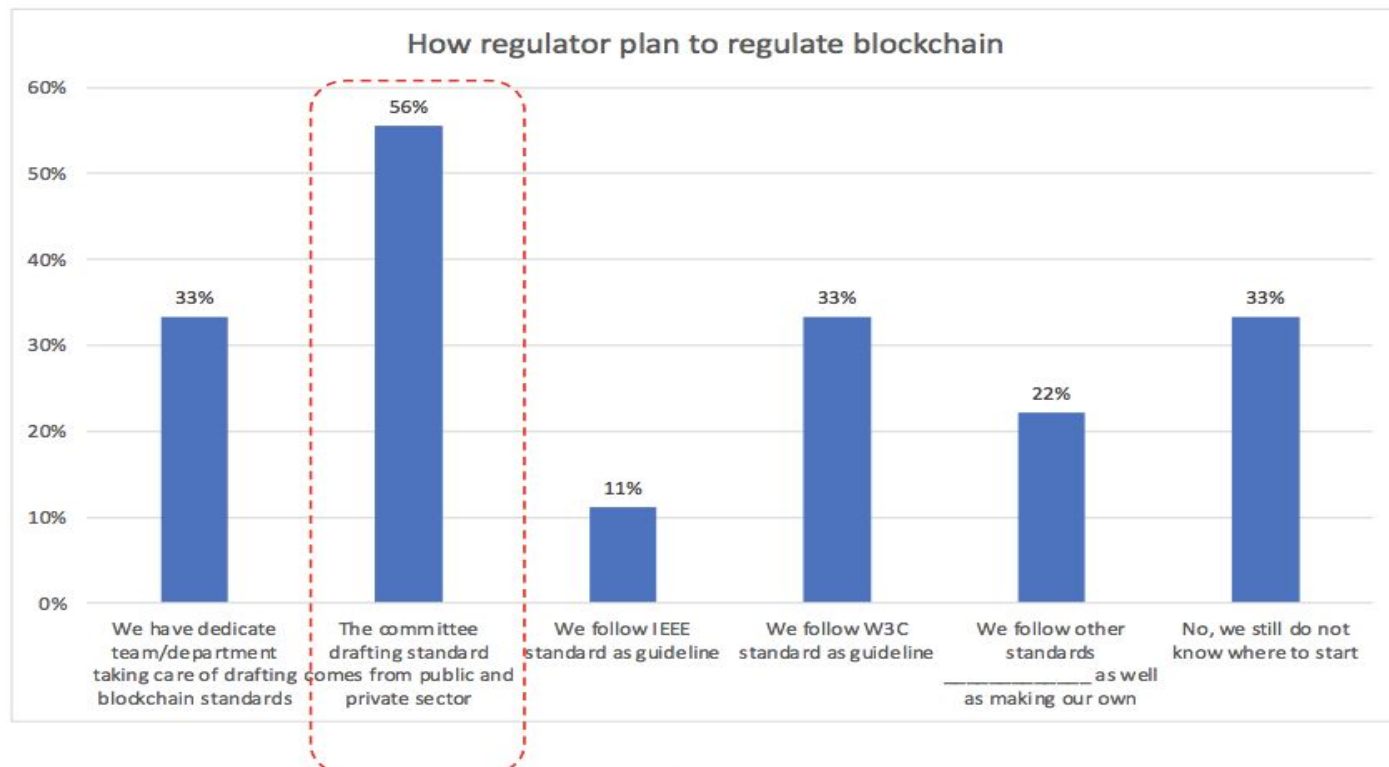|	THAILAND	MALAYSIA	SINGAPORE	VIETNAM	INDONESIA	LAO	MYANMAR	PHILIPPINES	BRUNEI	CAMBODIA
Law/Acts	✔	✔	✔	✖	✔	✖	✖	✖	✖	✖
Decree	✖	✖	✖	✖	✔	✖	✖	✖	✖	✖
Decision	✖	✖	✖	✔	✔	✖	✖	✖	✖	✖
Notice	✔	✖	✔	✖	✖	✖	✖	✖	✖	✖
Others	✖	✖	✖	✖	✖	✖	✖	✖	✖	✔

Figure 5: AMS plan to regulate blockchain

Benefits and Consequences

Intended benefits

Digitization of trust for data exchange
New business opportunities for SMEs

Intended consequences

Supplant or disrupt traditional data
exchange broker ecosystem

Unintended benefits

Build further trust in blockchain
Kickstart blockchain adoption in economy
Kickstart startup ecosystem

Unintended consequences

Risk of data breaches
Privacy concerns

Moving Forward

- In conclusion, we propose a blockchain-based **data exchange platform** to digitize trust in data exchange
  - ▷ Safe, secure and trustless blockchain platform
  - ▷ New business opportunities for SMEs with their data
- Potential expansion of token use and adoption of blockchain in daily life *à la* the Metaverse
- Legal/policy and collaboration remain open concerns

Resources

1. https://research.aimultiple.com/data-marketplace/

2. https://www.oecd-ilibrary.org/sites/18ac5acb-en/index.html?itemId=/content/component/18ac5acb-en

3. https://innov8tif.com/ekyc/philippines/?gclid=CjwKCAjwv-GUBhAzEiwASUMm4pmaPmU7X2qi_r9q-JRLc98fYAFqG23F3gNfZCJqoKF8CUUuM6TJoRoC90YQAvD_BwE

4. https://www.frontiersin.org/articles/10.3389/fbloc.2020.497985/full

5. https://www.oecd.org/southeast-asia/data/sme.htm

6. https://www.privacy.gov.ph/data-privacy-act/

7. https://asean.org/wp-content/uploads/2022/02/02-Final-_-Report-Blockchain-for-digital-government.pdf

THANKS!

Any questions?