

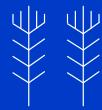
# IBM BLOCKCHAIN

## DEV DAY

### HYPERLEDGER USE-CASE DEEP DIVE

**ALDRED BENEDICT**  
Blockchain Developer  
IBM Singapore Blockchain Garage

# WHAT MAKES A GOOD BLOCKCHAIN USE CASE?



## WHAT MAKES A GOOD BLOCKCHAIN USE- CASE?

*Identifying a good blockchain use-case is not always easy!*

However there should always be:

### 1. A BUSINESS PROBLEM TO BE SOLVED

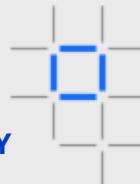
- That cannot be more efficiently solved with other technologies

### 2. AN IDENTIFIABLE BUSINESS NETWORK

- With Participants, Assets and Transactions

### 3. A NEED FOR TRUST

- Consensus, Immutability, Finality or Provenance



*First use-cases are even more difficult to identify!*

However there should always be:

1. A **LIMITED SCOPE**, BUT STILL SOLVES A REAL BUSINESS PROBLEM
  - Minimum Viable Product in a few weeks of effort
2. A SMALLER **BUSINESS NETWORK**
  - Usually without requiring regulators
3. ALLOWS FOR **SCALING WITH MORE PARTICIPANTS & SCENARIOS**

**Start small, succeed and grow fast!**



**USE-CASE DEEP-DIVE**

# Singapore FinTech INVICTUS leverages IBM technologies to help SMEs raise their productivity and competitiveness

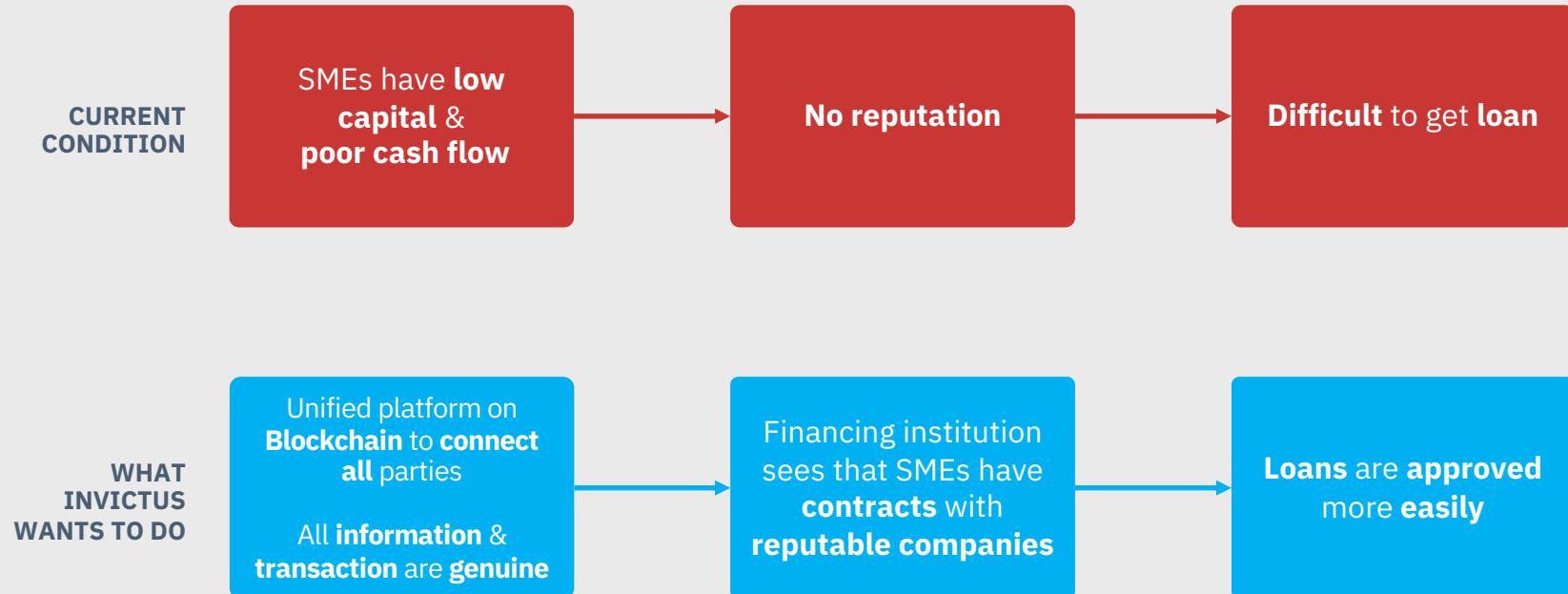
By IBM

<https://www.ibm.com/think/fintech/singapore-fintech-invictus-leverages-ibm-technologies-to-help-smes-raise-their-productivity-and-competitiveness/>

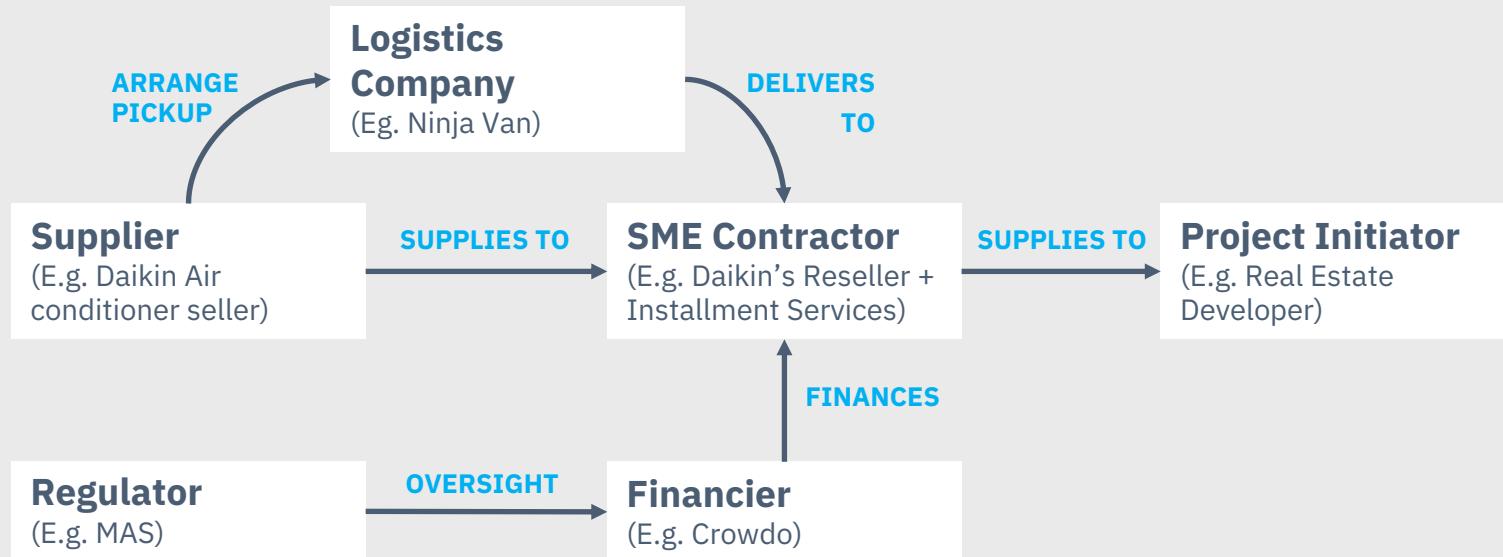
INVICTUS PROCURE2PAY WHITE PAPER:  
<http://invictus.sg/assets/MAS-FSTI-POC-Whitepaper.pdf>



## BACKGROUND



## BUSINESS NETWORK



## PERSONAS

**Sue (Sabana)**  
**PROJECT INITIATOR**

*"I want my project to be completed on time"*



**Steven (AEI)**  
**SME CONTRACTOR**

*"I need adequate cash flow and financing to run my business"*



**Douglas (Johnson)**  
**SUPPLIER**

*"I want the order and be paid earlier"*

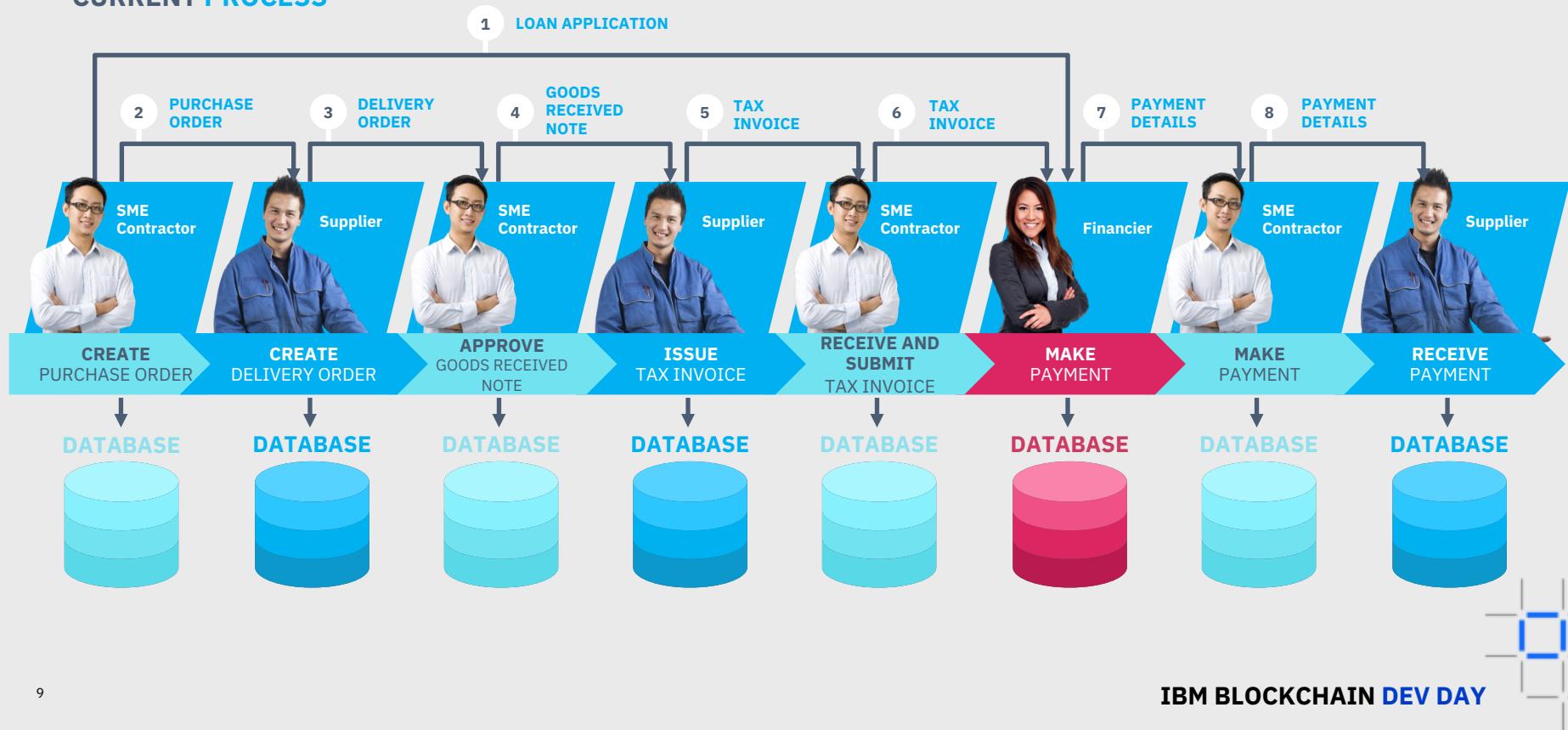


**Jaslyn (Crowdo)**  
**FINANCIER**

*"I want to review the loan application promptly"*



## CURRENT PROCESS



## BUSINESS PROBLEMS

### LACK OF TRUST:

Financier (Liquidity Provider) does not trust SME Contractor to provide loan

Low chance of loan approval

Supplier does not trust SME Contractor

SME Contractor cannot get longer payment terms and low interest rate

SME Contractor cannot secure working capital

Suffers from cash flow issue due to unfavorable payment terms

Projects may fail to start

### SLOW, MANUAL AND ERROR-PRONE PROCESS:

Ordering, delivery and invoicing of goods are manual and paper-based

Cannot track status of goods in near real-time

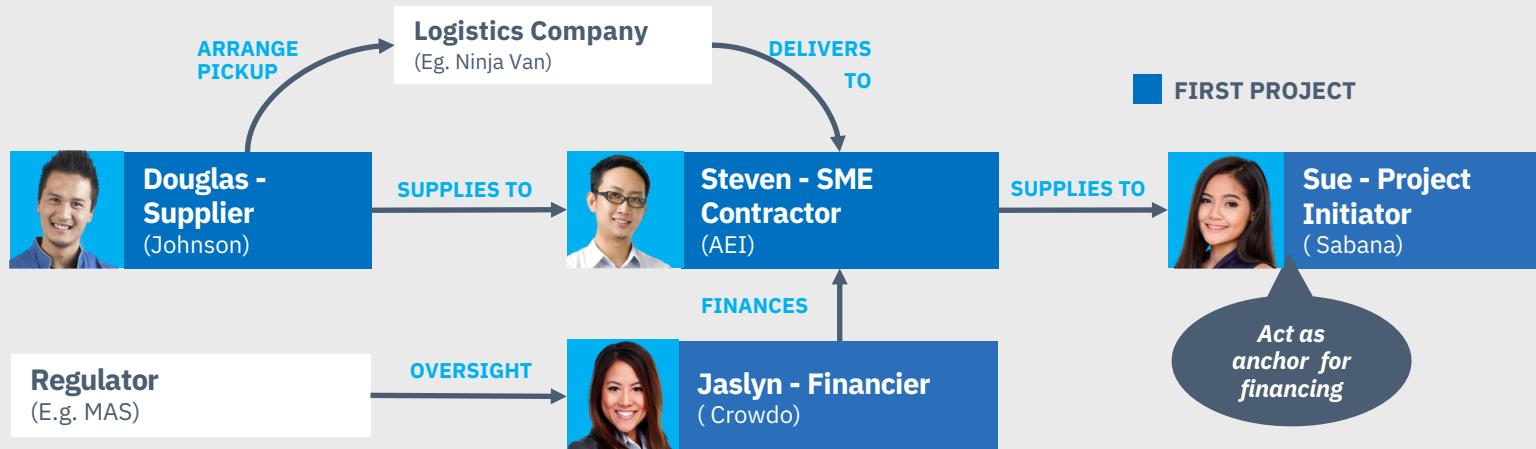
Matching of PO, DO, GRN and Invoice for items is slow

Dispute resolution will be slow and costly

Financing takes too long for verification



## BUSINESS NETWORK – FIRST PROJECT



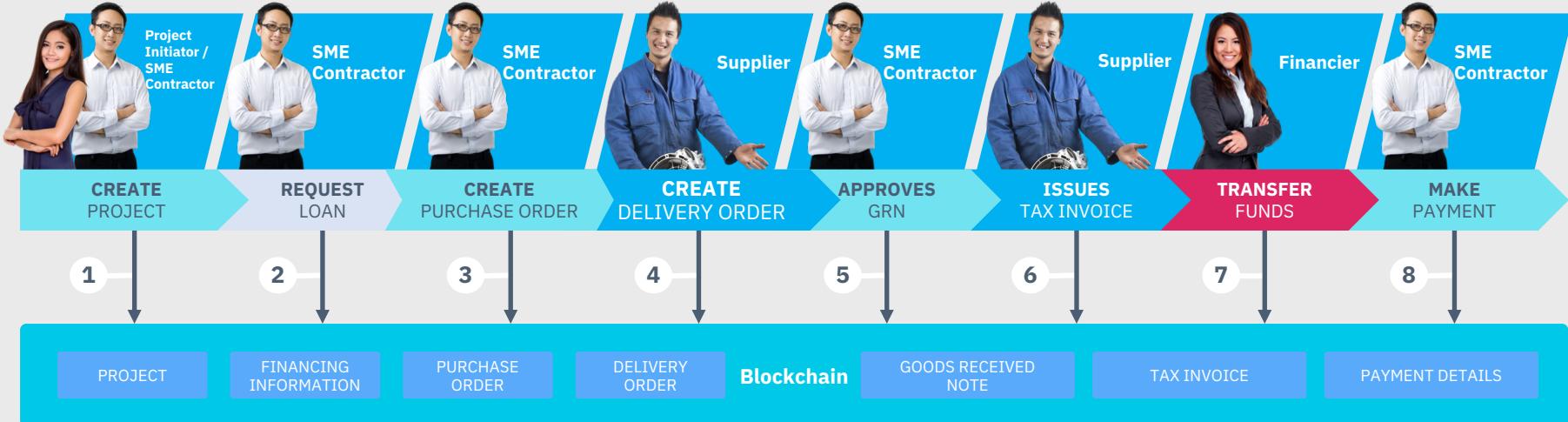
## BUSINESS PROBLEMS

- Lack of trust
- Slow, manual, error-prone process

We can limit the participants in the business network and still solve the problem



## PROPOSED BLOCKCHAIN SOLUTION



**1**  
Project includes genuine information of the Project Initiator, SME Contractor and Supplier

**2**  
Loan is approved not only based on SME Contractor's reputation, but also based on the reputation of Project Initiator (hence the term "anchor")

**3 - 6**  
All the documents are in digital form and the status can be tracked near real-time

**7**  
Once Financier sees that Supplier has delivered the goods (or upon any other milestones e.g. upon PO issuance), funds are transferred directly to Supplier

**8**  
SME Contractor pays back to Financier



## BENEFITS TO FINANCIER

### INCREASED TRUST

Can see all the project's information  
Be assured that the information is genuine and untampered.



Increased confidence of the SME's ability to repay the loan  
Approves loan confidently



Able to widen pool of potential clients to be financed

### FASTER, AUTOMATED AND LESS ERROR-PRONE PROCESS

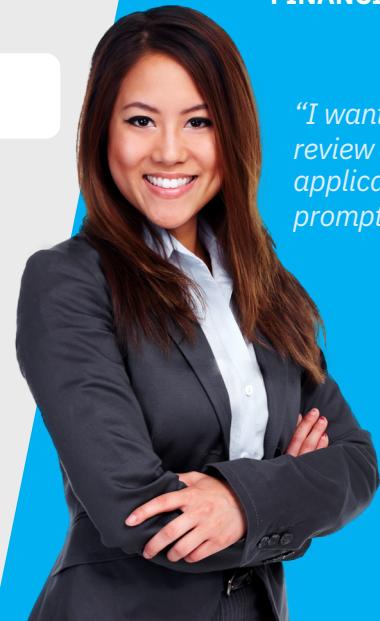
Information is guaranteed to be genuine.  
Full audit trails are visible anytime



Reviewing application loan is much faster

Jaslyn (**Crowdo**)  
**FINANCIER**

*"I want to review the loan application promptly"*



DAY

## BENEFITS TO SUPPLIER

### INCREASED TRUST

Payment is assured by financier  
Possibility for earlier payment execution



Increased confidence of the purchasing capacity of SMEs



Able to widen pool of potential clients to sell their products

### FASTER, AUTOMATED AND LESS ERROR-PRONE PROCESS

More organized way of managing orders

No manual document preparation process

View status of goods/documents anywhere and anytime

Assurance of accurate and genuine document and order information

Potential reduction of manpower  
Save Operational Cost



## BENEFITS TO SME CONTRACTOR

### INCREASED TRUST

Improved chance of securing financing from liquidity providers

Improved cash flow

Better chance of favorable payment terms from supplier

Better chance of successful projects

### FASTER, AUTOMATED AND LESS ERROR-PRONE PROCESS

Assurance of accurate and genuine document information and order tracking

No manual document preparation process

View status of goods/documents anywhere and anytime



**Steven (AEI)  
SME CONTRACTOR**

*"I need adequate cash flow and financing to run my business"*



DAY

## BENEFITS TO PROJECT INITIATOR

### INCREASED TRUST

Be assured that SME's lack of funding does not delay the whole project's completion



## IS THIS A GOOD BLOCKCHAIN USE-CASE?

### 1. THERE IS A BUSINESS PROBLEM TO BE SOLVED

- Lack of trust and slow process

### 2. THERE IS AN IDENTIFIABLE BUSINESS NETWORK

- SME Contractor, Supplier, Financier, Project Initiator

### 3. THERE IS A NEED FOR TRUST

- The proposed solution relies on parties being able to trust each other

## IS THIS A GOOD FIRST BLOCKCHAIN PROJECT?

### 1. A LIMITED SCOPE, BUT STILL SOLVES A REAL BUSINESS PROBLEM

### 2. A SMALLER BUSINESS NETWORK

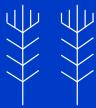
- By limiting the number of participants in the network and no integration, IBM completed MVP in a few weeks and addressed the business problem

### 3. ALLOWS SCALING WITH MORE PARTICIPANTS & SCENARIOS

- We can add more participants (logistics company, regulators) with minimal effort



# GOOD OR BAD BLOCKCHAIN USE CASE?



IBM

## HOLIDAY TRACKING TOOL

### BAD USE-CASE

No business network (only you and a couple of friends and relatives)

## FOOD PROVENANCE

### GOOD USE-CASE

Business network exists  
Trust issues between parties – producers, retailers, regulatory  
Obvious benefit – **Faster retrieval of food information**

### COMPLEX FIRST PROJECT

Organizational complexity  
Cross industry network

## KNOW YOUR CUSTOMER

### GOOD USE-CASE

Business network exists  
Trust issues between parties – multiple banks/divisions  
Obvious benefit – No need of multiple registration of the same client

### CHALLENGING FIRST PROJECT

Need to find a subset of the problem as a start

## TRACK YOUR CHILD

### LESS-THAN-IDEAL USE-CASE

Lack of business network  
Need of immutability (to some extent)  
Who will we trust to run the network?

## DISPUTE RESOLUTION

### GOOD USE-CASE

Business network exists – Disputes are usually regarding transfer of wealth  
Trust issues between parties – needs to be resolved quickly  
Obvious benefit – Faster and cheaper resolution

### GOOD FIRST-PROJECT

Limit network to a few participants and scale if successful



**SAMPLE QUESTIONS TO ASK FOR THE SELECTED USE CASE:**

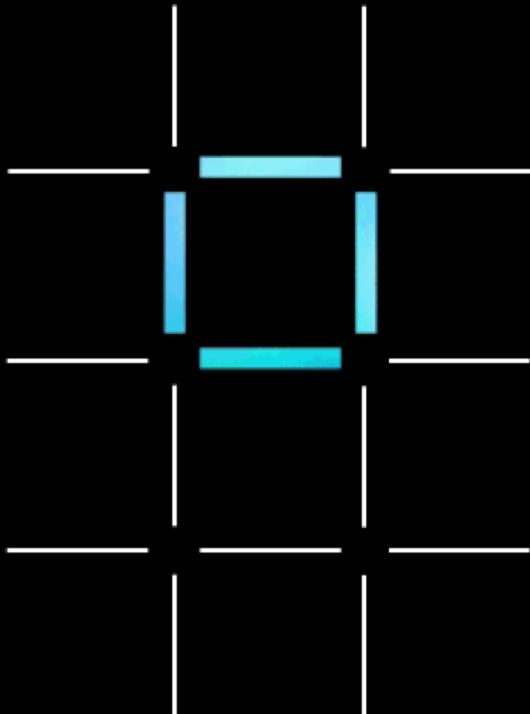
1. What is the specific business problem / challenge that the first project will address?
2. What is the current way of solving this business problem?
3. Assuming the business problem is large, what specific aspects of this business problem will be addressed?
4. Who are the business network participants (organizations) involved and what are their roles?
5. Who are the specific people within the organization and what are their job roles?
6. What assets are involved and what is the key information associated with the assets?
7. What are the transactions involved, between whom, and what assets are associated with transactions?
8. What are the main steps in the current workflow and how are these executed by the business network participants?
9. What is the expected benefit of applying blockchain technology to the business problem for each of the network participants?
10. What legacy systems are involved? What degree of integration with the legacy systems is needed?



# THANK YOU

**ALDRED BENEDICT**

[baldred@id.ibm.com](mailto:baldred@id.ibm.com)





©Copyright IBM Corporation 2018. All rights reserved. The information contained in these materials is provided for informational purposes only, and is provided AS IS without warranty of any kind, express or implied. Any statement of direction represents IBM's current intent, is subject to change or withdrawal, and represents only goals and objectives. IBM, the IBM logo, and other IBM products and services are trademarks of the International Business Machines Corporation, in the United States, other countries or both, Other company, product, or service names may be trademarks or service marks of others