TEAM ORANGE

The Power of Many: Blockchain Interoperability and Portability for DSCSA Compliance

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Agenda

Desirable Qualities of a Solution

Concept POC Demonstration

DSCSA & Blockchain Key Topic Coverage

DSCSA Scenario Demonstration

Summary & Outlook

Questions & Answers

Background & Motivation

We are Enterprise & Blockchain Professionals

Have co-delivered a foundational DSCSA Enterprise Blockchain POC - Saleable Returns

Invited by The Center for Supply Chain Studies to demonstrate an interoperable blockchain solution

Desirable Qualities of a Solution

Interoperable
Impartial
Secure
Scalable
(Cyber) Resilient
Future-Proof

Desirable Qualities of a Solution

Interoperable

Interoperability is a characteristic of a product or system, whose interfaces are completely understood, to work with other products or systems, at present or future, in either implementation or access, without any restrictions.

Source: Wikipedia

Any legacy solution, any blockchain, any trading partner.

Desirable Qualities of a Solution

Impartial

Treating all parties, rivals, or disputants equally; not partial; not biased; Synonyms: fair

Source: Wiktionary

Two or more independent blockchains, open source.

Desirable Qualities of a Solution

Secure

Freedom from, or resilience against,
potential harm from external forces.

Source: Wikipedia

Keep control of your data, hacker and counterfeit resistant,
need-to-know data visibility.

Desirable Qualities of a Solution

Scalable

Scalability is the capability of a system, network, or process to handle a growing amount of work, or its potential to be enlarged to accommodate that growth.

Source: Wikipedia

Ample room to grow
10x max estimated transactions per second,
100k+ trading partners

Desirable Qualities of a Solution

(Cyber) Resilient

To maintain the entity´s ability to deliver the intended outcome continuously at all times. This means even when regular delivery mechanisms have failed, such as during a crisis and after a security breach.

Source: Wikipedia

No systemic bottle necks,
fault-tolerant redundancies.

Desirable Qualities of a Solution

Future-Proof

Future-proof software, computer equipment, etc. is designed so that it can still be used even when technology changes.

Source: Wikipedia

Portability of data, processes, hosting and blockchains at any time.

Key Design Choices

Open source platform

Keep in control of your data at all times

Only anonymous digital fingerprints in blockchains

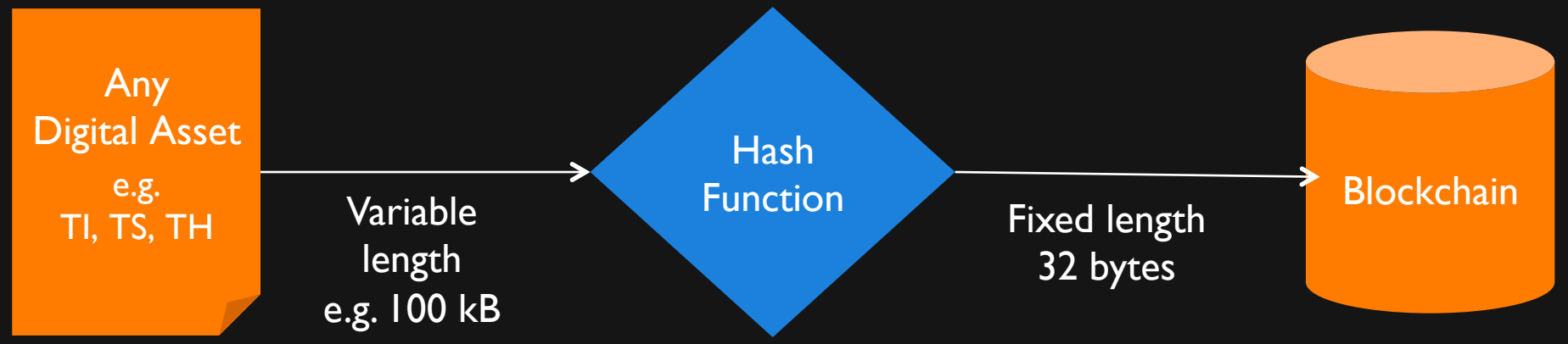
Use two or more independent blockchains

No single point of control or failure

Concept POC Demonstration

Foundational Principle I

Do NOT store original digital assets in blockchains - ONLY anonymous digital fingerprints thereof.



Example SHA-256 Hash:
0x e3b0c44298fc1c149afbf4c8996fb92427ae41e4649b934ca495991b7852b855

Why: Interoperable, secure, scalable, portable.

Foundational Principle 2

Atomize serialized item states – write only.

Why: Scalable, portable, resilient.

Foundational Principle 3

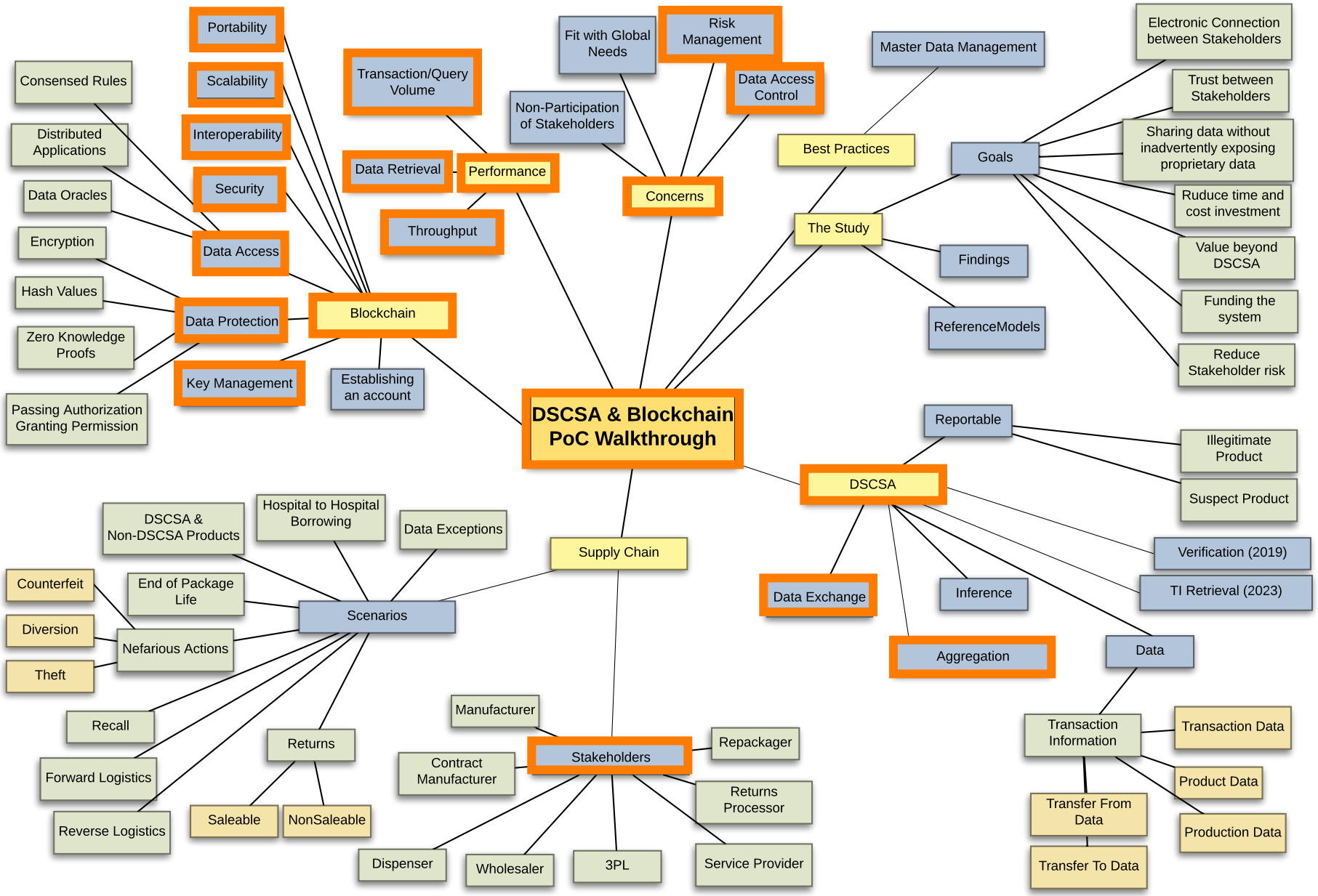
Model serialized item states as tags

Serialized Item States (0=True, 1=False)						
DSCSA Item?	Grandfathered?	Fit for Commerce?	In Commerce?	Provenance?	Declared Emergency?	Declared Emergency ID
e[0]	e[1]	e[0]	e[1]	e[0]	e[1]	
e[0]	e[1]	e[0]	e[1]	e[0]	e[1]	
e[0]	e[1]	e[0]	e[1]	e[0]	e[1]	
e[0]	e[1]	e[0]	e[1]	e[0]	e[1]	
e[0]	e[1]	e[0]	e[1]	e[0]	e[1]	
e[0]	e[1]	e[0]	e[1]	e[0]	e[1]	

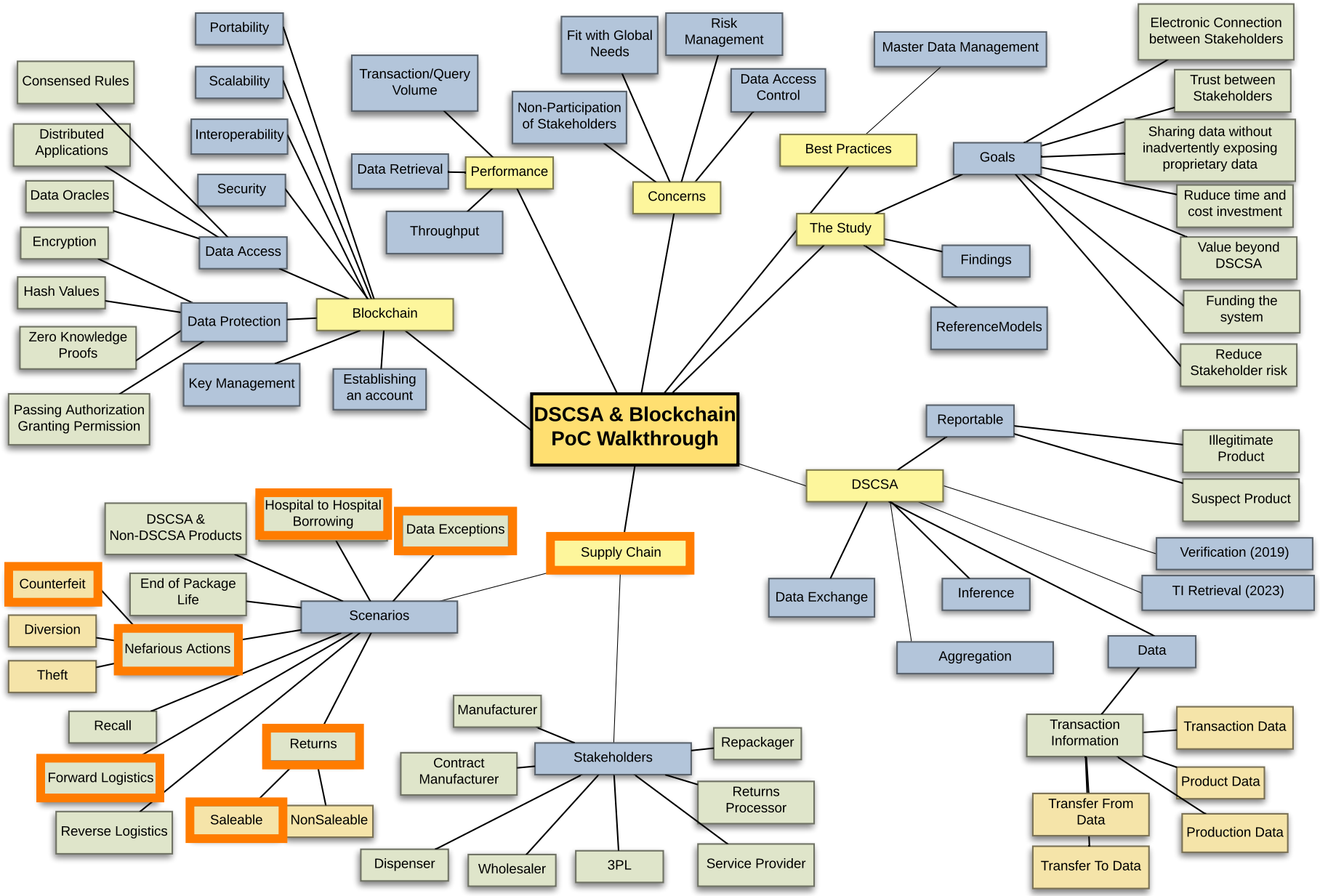
Assertations | Rules | Partner Behavior | Scenarios | Metrics | Startup Parameters | Findings | N001 BC Accounts | N001 Products | N001 Product Lots | N001 Serialized Item

Why: Scalable, portable.

WE'VE DISCUSSED THESE AREAS OF FOCUS



NOW WE'LL COVER A FEW SCENARIOS



Example Scenarios

SALEABLE RETURNS

POTENTIAL COUNTERFEIT

OUT OF ORDER OR “UNEXPECTED” DATA

EASY

TRANSPARENT ON THE DOCK

How to get there

- Run fast track pilot that can be scaled to production quickly
- Can be easily built with proven technologies and your integration, hosting, consulting partners of choice
- We can help connecting to any two or more blockchains (interoperable, scalable, portable, resilient)

Summary & Outlook

Desirable Benchmark of any Solution

Interoperable
Impartial
Secure
Scalable
(Cyber) Resilient
Future-Proof

Questions & Answers

#Imagine!

THANK YOU!

Appendix

BLOCKCHAINS POWER THE TRUST ECONOMY

"The distributed ledger technology, better known as blockchain, has the potential to eliminate huge amounts of record-keeping, save money and disrupt IT in ways not seen since the internet arrived." - Computerworld

Blockchain's Limitations

Scalability

Throughput capabilities don't meet big data requirements.

Cost

Implementation and operations are too expensive.

Interoperability

Which blockchain? Public or private? How to integrate? How about legacy systems and applications?

Data Privacy

Potential loss of control over data.

Our Core Value Add

Cryptowerk

Scalability

Accelerate public blockchains up to 600,000 transactions per second.

Cost

Fast implementations without interrupting operations.
Much lower and predictable transaction cost for public blockchains.

Interoperability

Works with
Any digital asset.
Any application.
Any blockchain.

Data Privacy

No sensitive data transferred to Cryptowerk – only digital fingerprints.