Microsoft

Establishing Shared Truth with Blockchain

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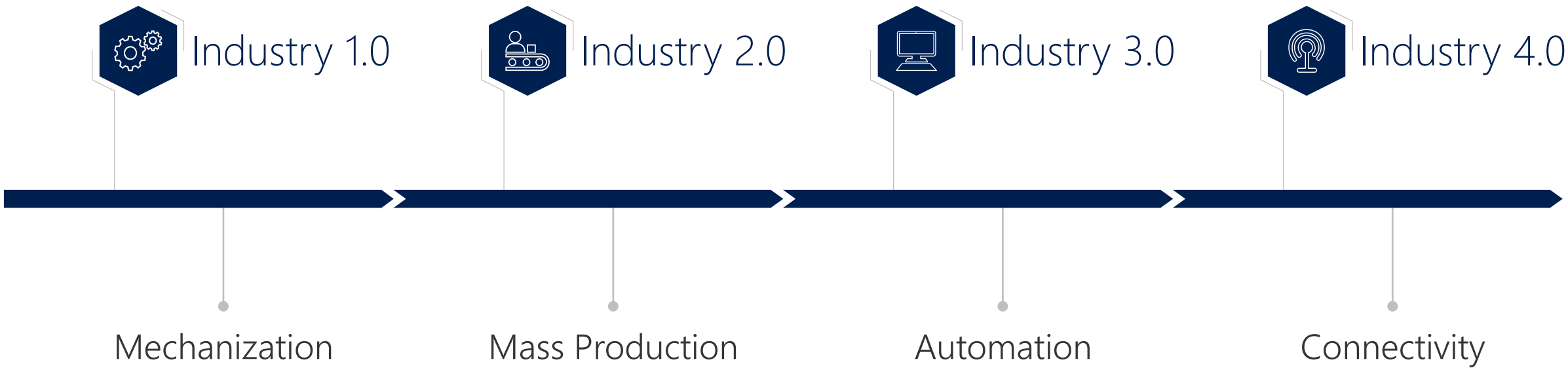
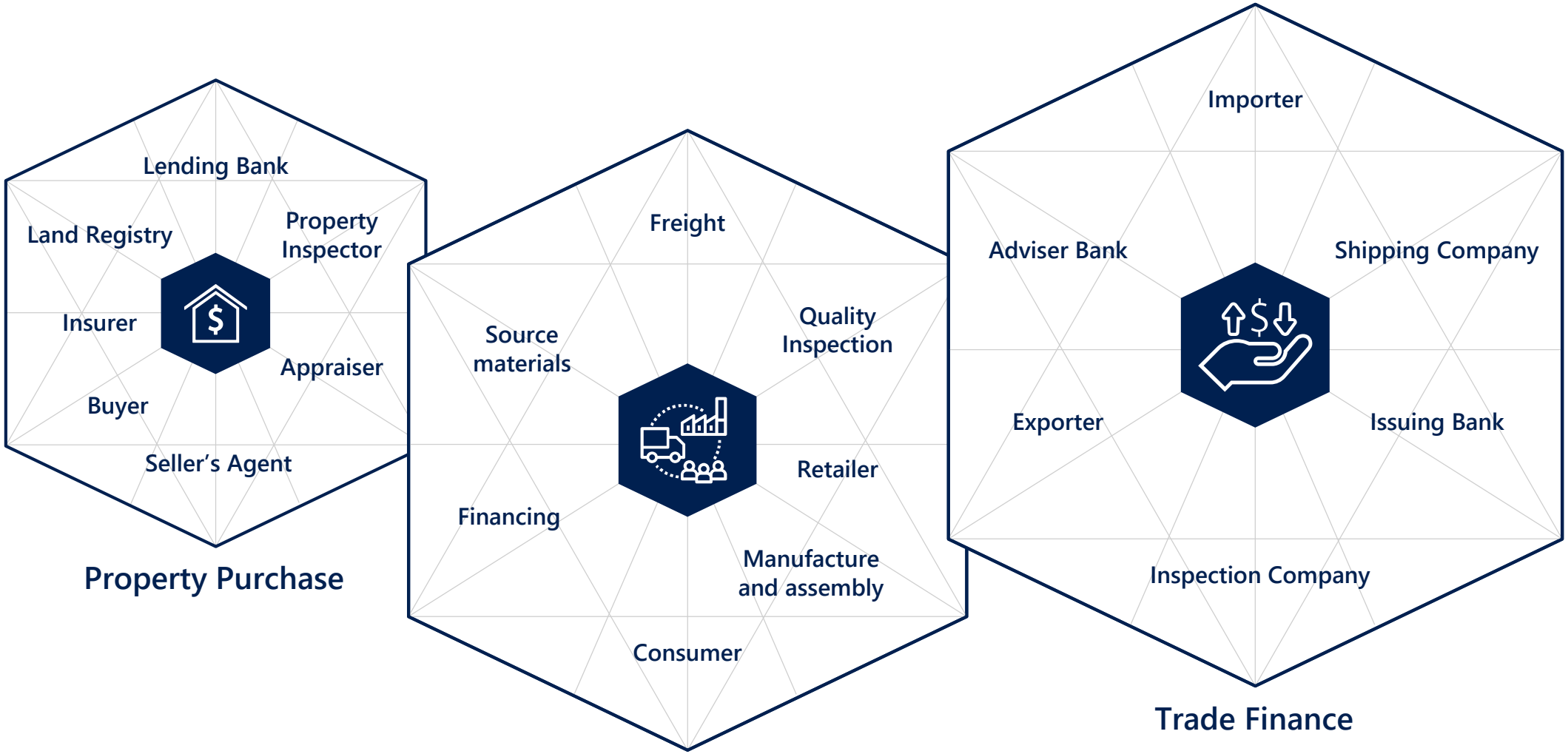
1 Avril 2019

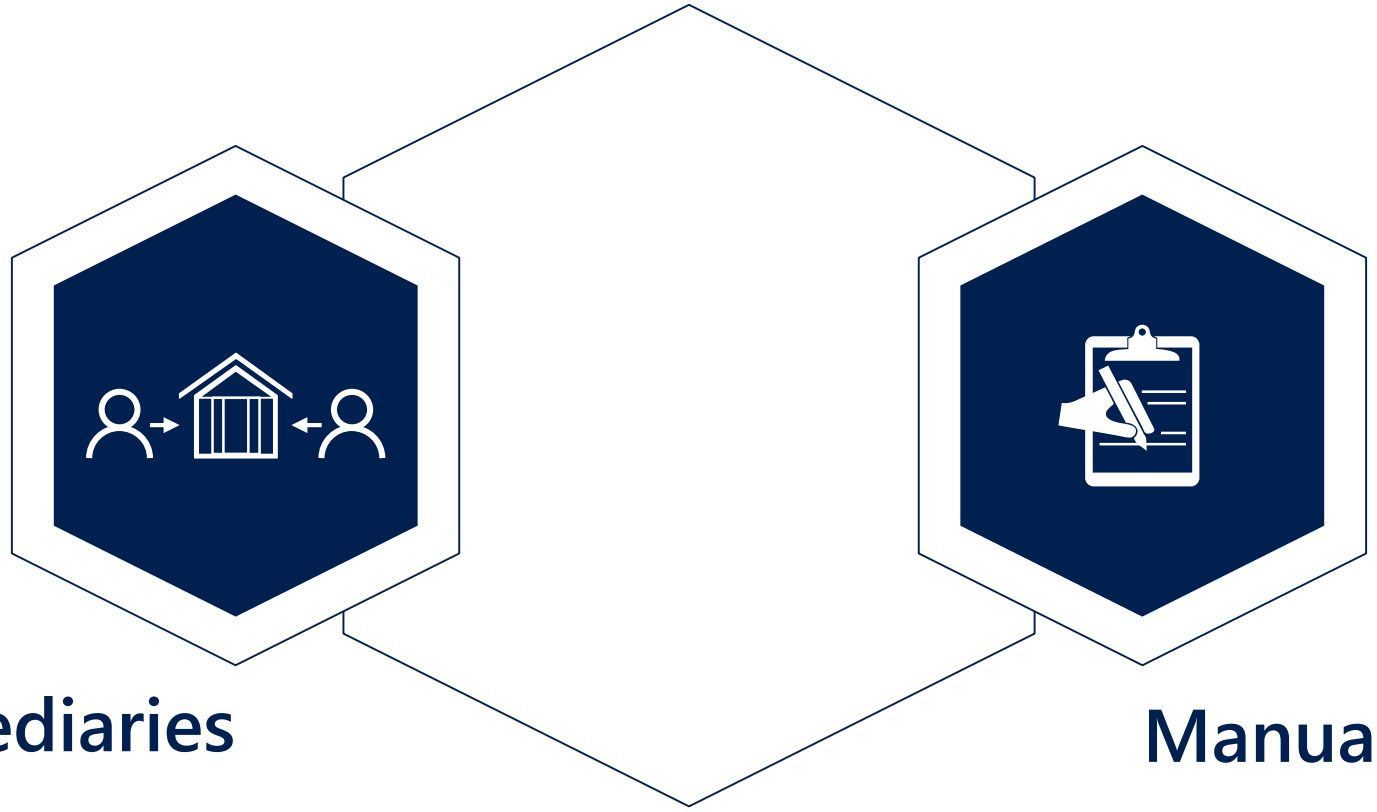
Technology has always affected how we do business



But business is still built on trust



Traditional methods of establishing trust across organizations are inefficient



Intermediaries

increase cost and reduce direct contact with consumers

Manual verification

is time-consuming and error-prone

Enterprise needs a better approach

Reduce Cost

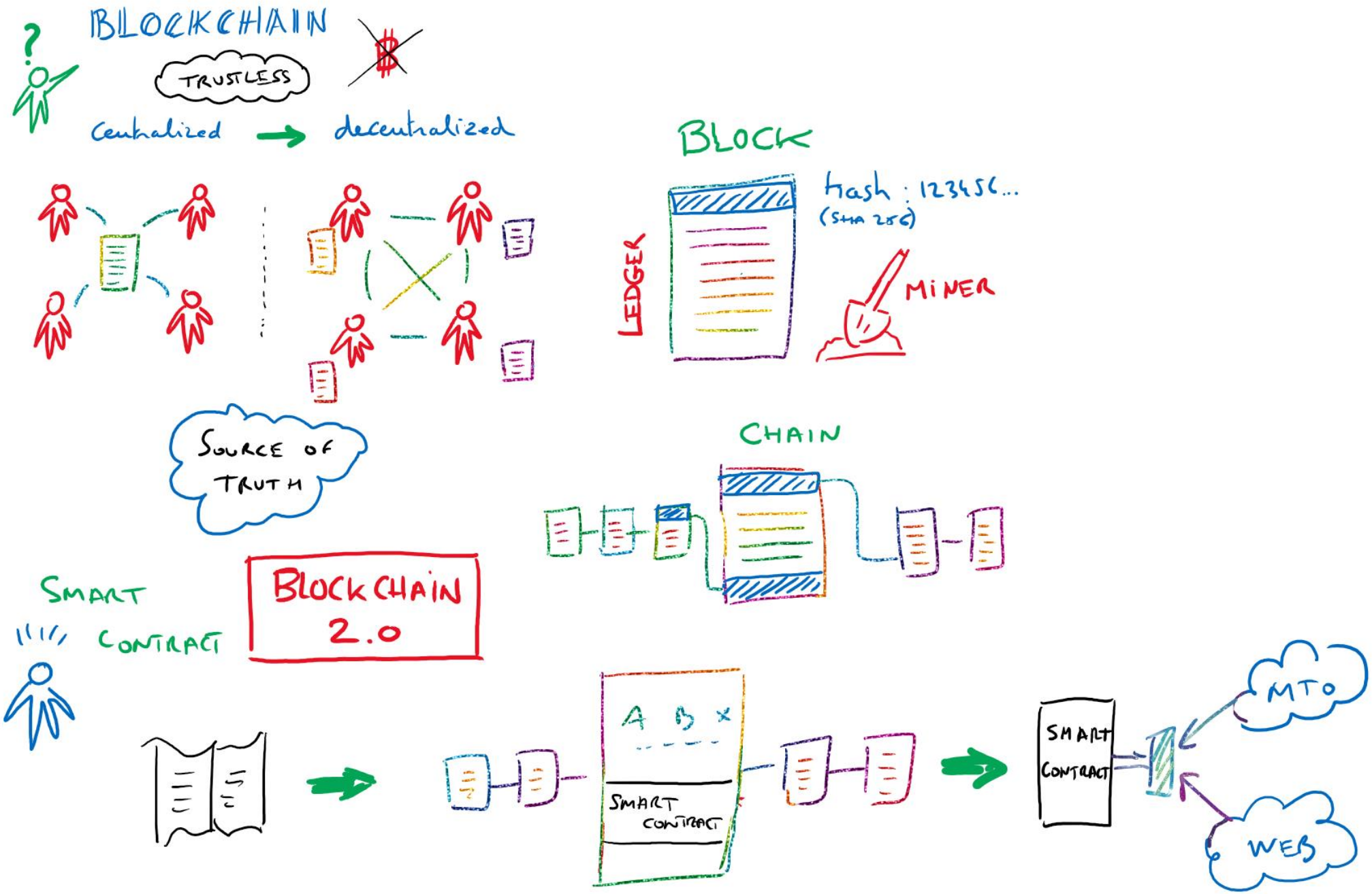
Remove friction and allow direct interaction between parties

Mitigate Risk

Reduce security threats from fraud, hacking, and data manipulation

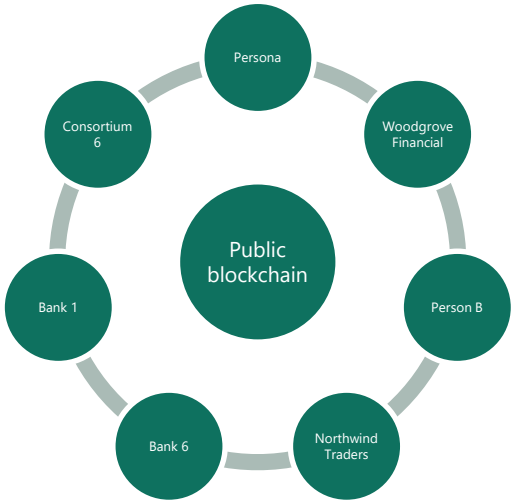
Increase Speed

Use a shared data source for transparency across organizations and increased end-to-end speed


BLOCKCHAIN
TRUSTLESS
centralized → decentralized
SOURCE OF TRUTH
BLOCK
LEDGER
hash : 12345C...
(SHA 256)
MINER
CHAIN
SMART CONTRACT
BLOCKCHAIN 2.0
A B x
SMART CONTRACT
SMART CONTRACT
MTO
WEB

Type of Blockchain networks

Public Blockchain



Many, unknown participants

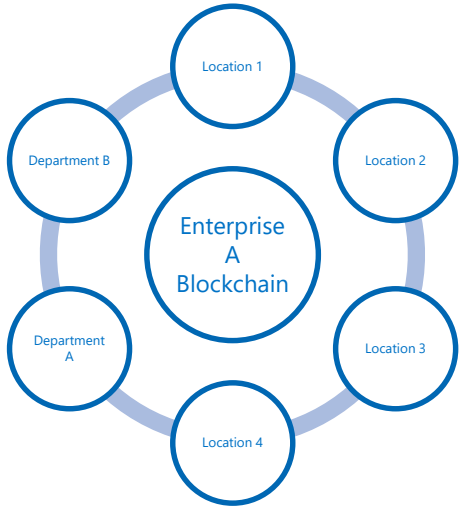
Anonymous or pseudonymous

Open read and write by all participants

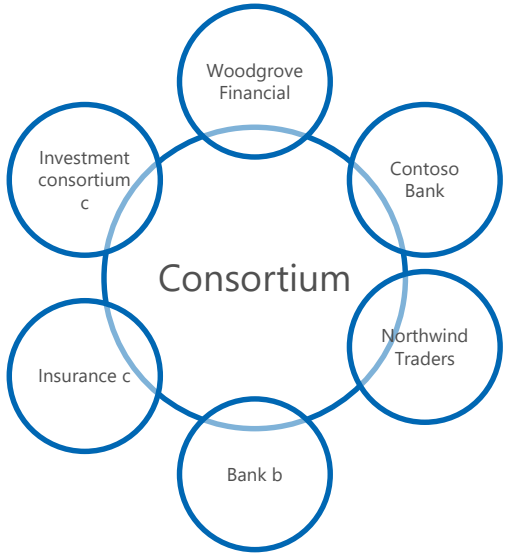
Consensus by Proof of Work

Enterprise Blockchain

Private



Consortium



Approved participants

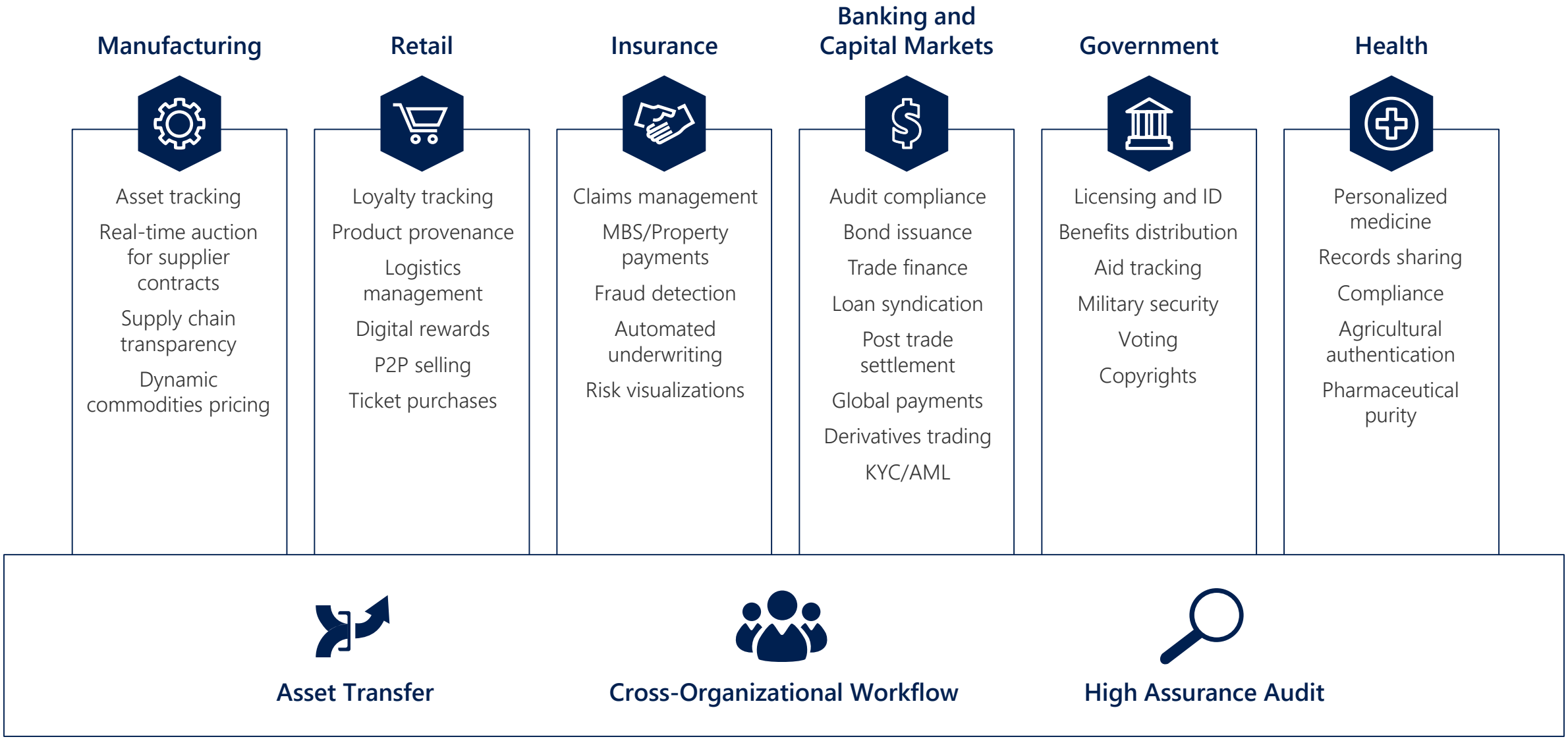
Known identities

Permissioned write and/or read

Multiple algorithms for consensus

Is blockchain right fit ?

Applications have similar patterns, across industries



How to prospect opportunities?

Answering a few questions can determine if blockchain is appropriate

Is there sponsorship for the project from business/leadership ?

Is the pain related to a business process that crosses the trust boundaries and where parties work on the same data?

Do all members see the value and agreed to join a consortium?

What is Azure building?

Blockchain wasn't built for enterprise

Ledgers designed for public networks

Lack the performance, confidentiality, and governance capabilities needed for commercial use

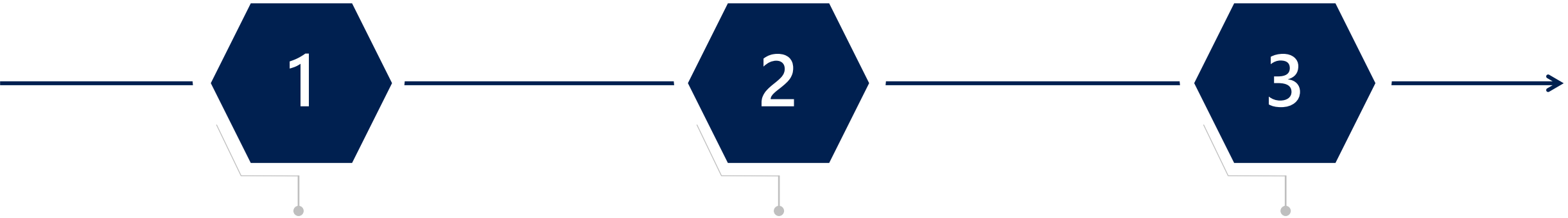
Smart contracts demand bespoke development and new skills

Not designed to leverage existing enterprise tools and skill sets

Integration is difficult and costly

Connecting to existing IT architecture requires significant investment

We've taken steps to create a platform that would tackle those challenges



Populated preconfigured networks

Integrated relevant cloud services

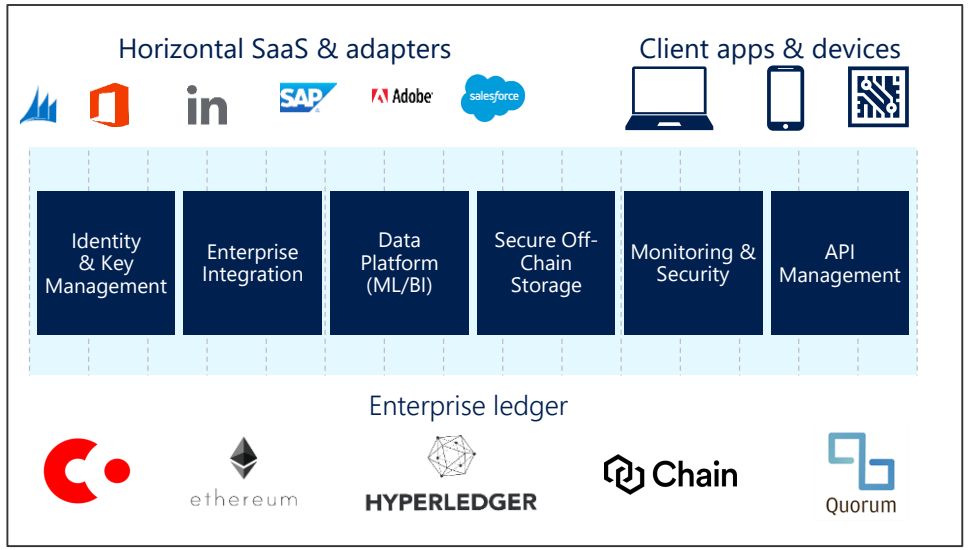
Built a simple interface

We started by populating modular preconfigured templates and infrastructure

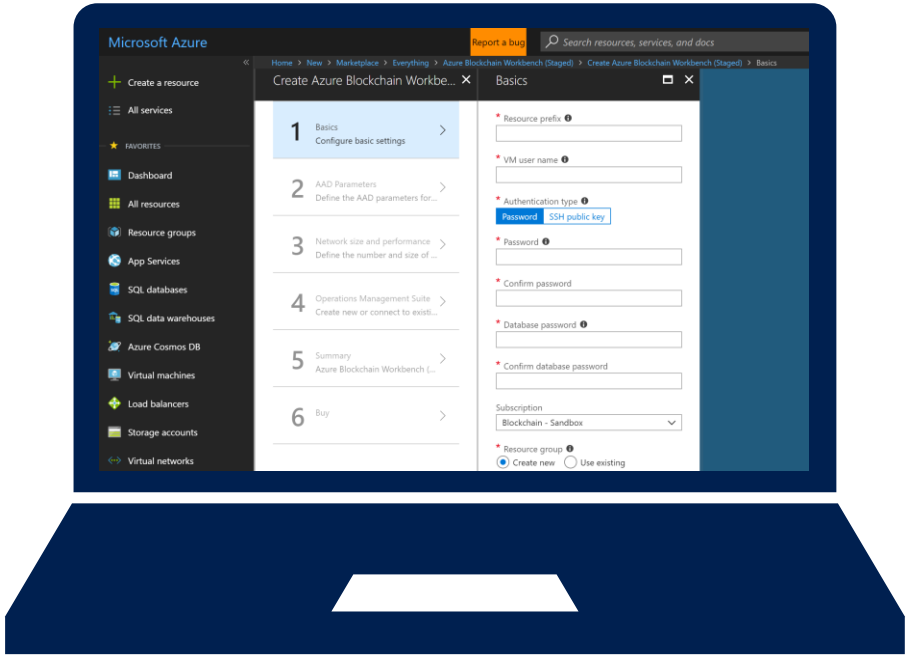
Choose the ledger that meets your needs

Deploy on flexible topologies (dev test, single-node, or multi-node) so you can expand when you're ready

Now, we've built a simple interface for deploying these services and authoring smart contracts

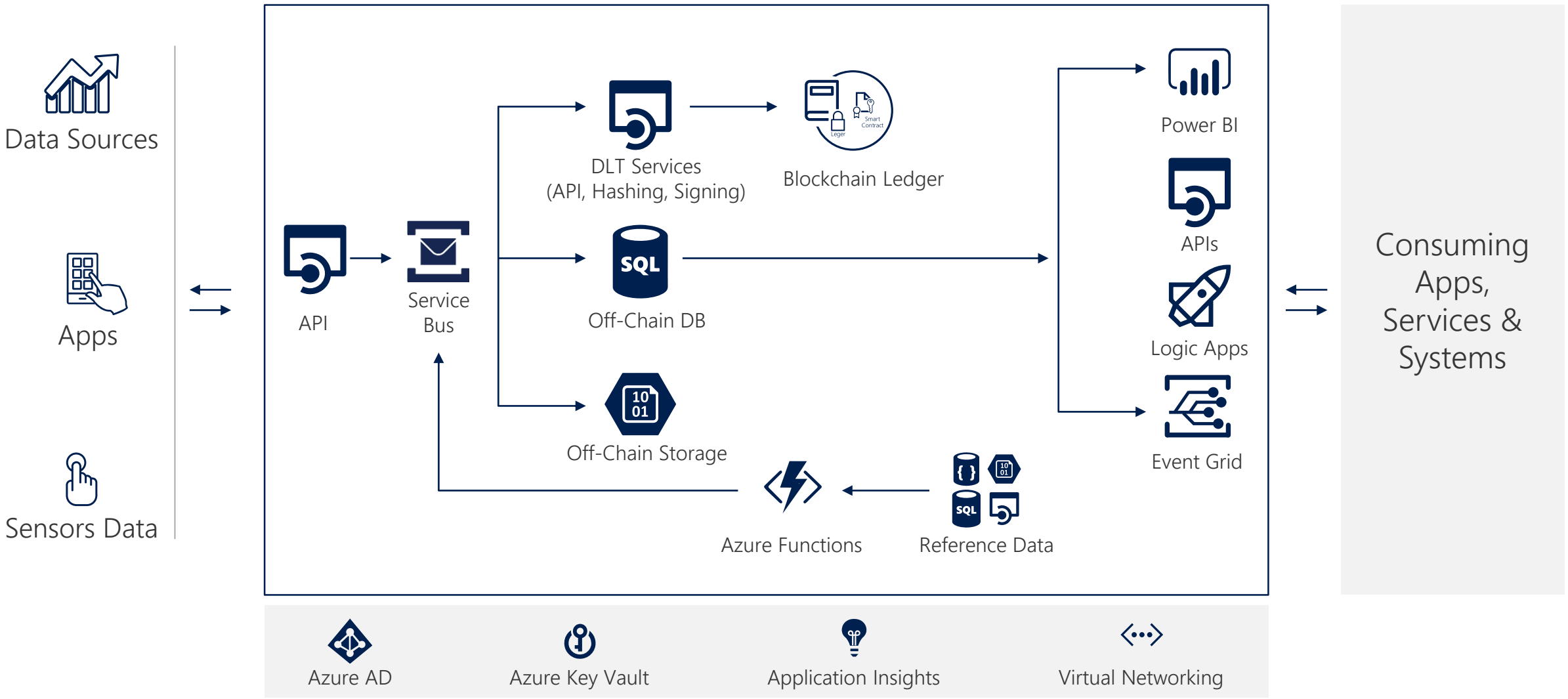


Azure Blockchain Workbench



Microsoft

With a clear, simplified approach



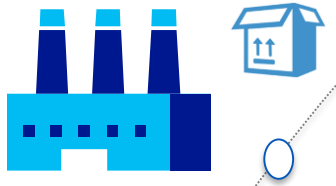
Some real examples

Plateforme applicative – Illustration IoT et blockchain

Blockchain IoT

The Food product is sealed in an IoT enabled package for shipping

The terms of shipping are registered using a **smart contract** on the Blockchain



Food Processor

SMART CONTRACT

CARRIER 1

CARRIER 2

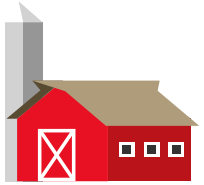
11ºC
66%

Retail Store

PRODUCER

Milk producer supplies Milk to Food Processing Company

The package has to be maintained at :
Temperature < 10º C
Humidity < 65%



Warehouse

The conditions of the contract have been violated.

Carrier 2 liable for penalty as the temperature of the package when it reached the retail store was above the prescribed limit

SMART CONTRACT UPDATED

At various points in the journey, the IoT device from the package sends the Temperature & Humidity data which are recorded on the blockchain

IoT Enabled

SHARED LEDGER

Origin	Warehouse	Carrier 2	Store
8ºC 60%	9ºC 64%	9ºC 64%	11ºC 66%