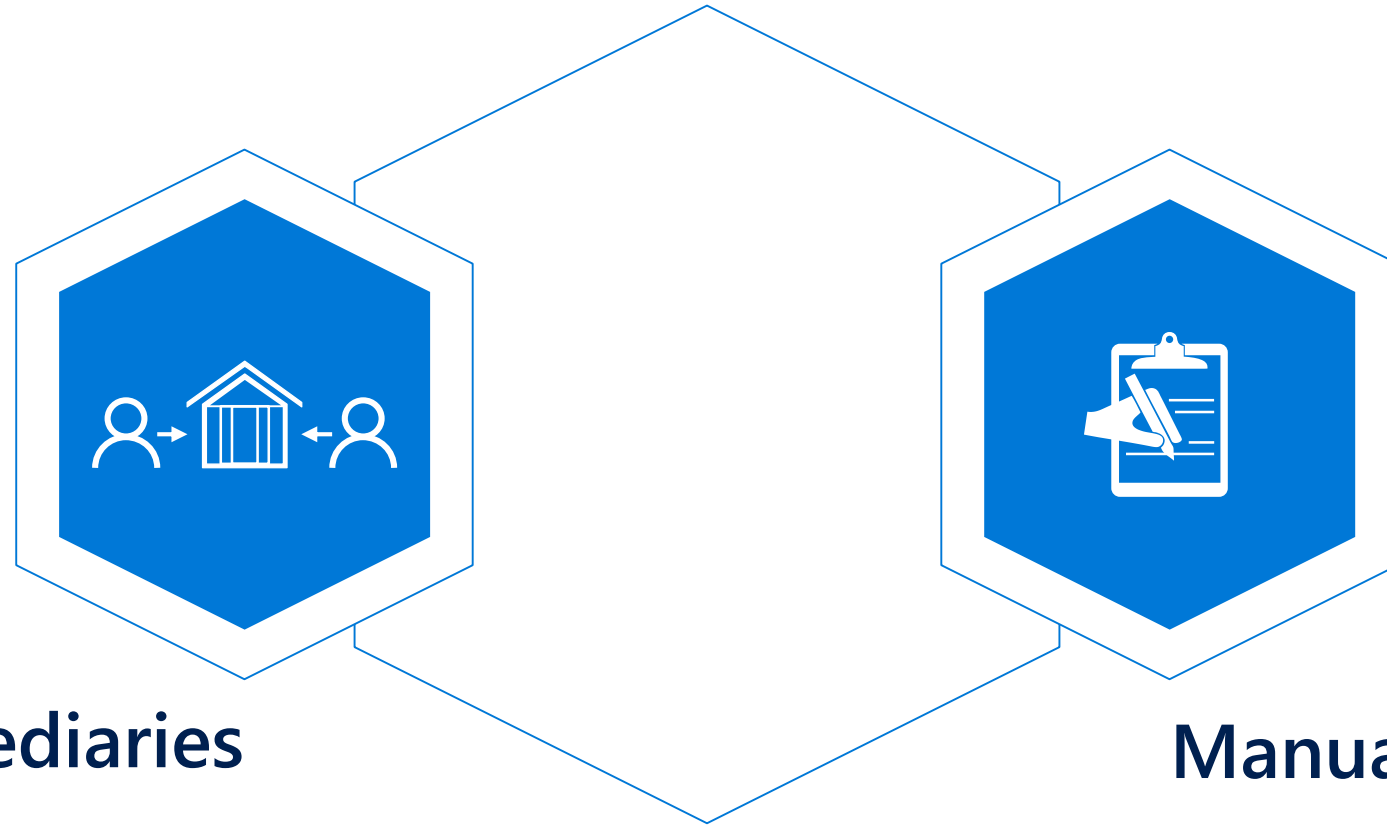# Why do we need Blockchain?

Traditional methods of establishing trust increase friction

Intermediaries

increase cost and reduce direct contact with consumers

Manual verification

is time-consuming and error-prone

So we need a better approach

Reduced Cost
A complete record of every transaction across all organizations

Mitigate Risk
Reduced security threats from fraud, hacking, and data manipulation

Increase Speed
A shared data source provides transparency across organization and increases end-to-end speed

Blockchain provides the solution…

Shared
Blockchain value is directly linked to the number of organizations or companies that participate in them. There is huge value to even the fiercest of competitors to participate with each other in these shared database implementations.

Secure
Uses cryptography to create transactions that are impervious to fraud and establishes a shared truth.

Ledger
The database is "write once" so it is an immutable record of every transaction that occurs.
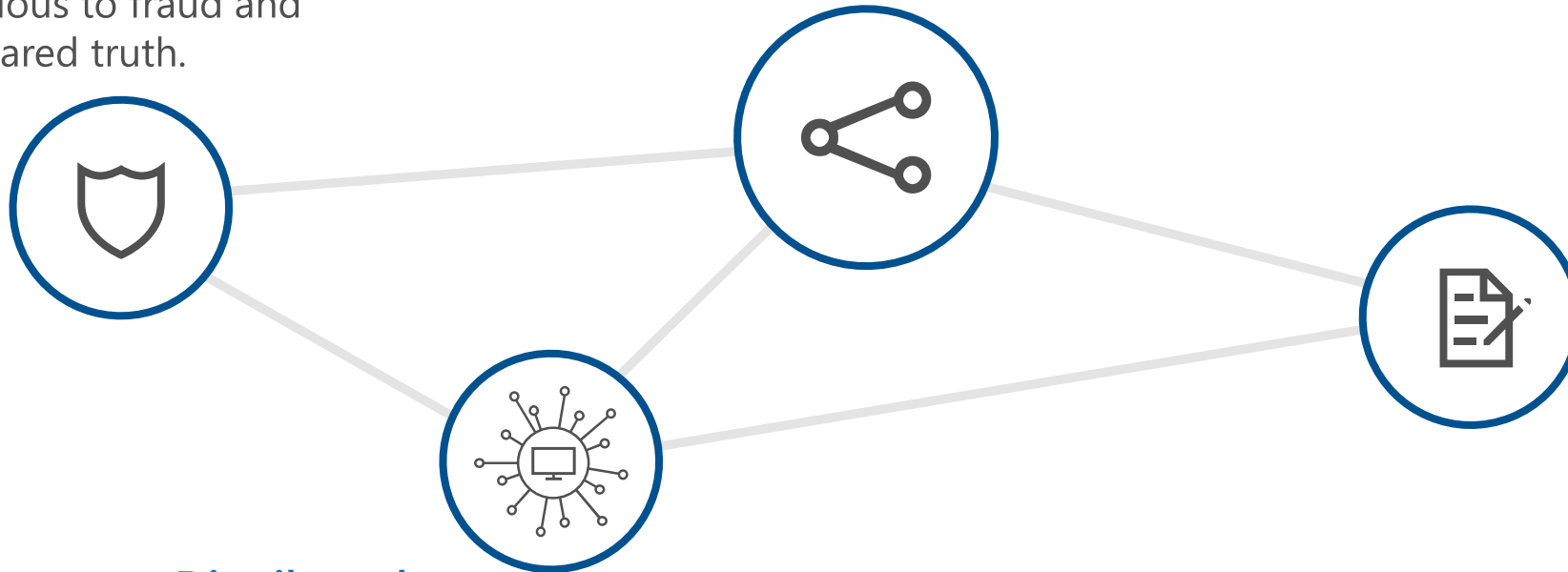
Distributed
There are many replicas of the blockchain database. In fact, the more replicas there are the more authentic it becomes.

5

But Blockchain wasn't built for enterprise
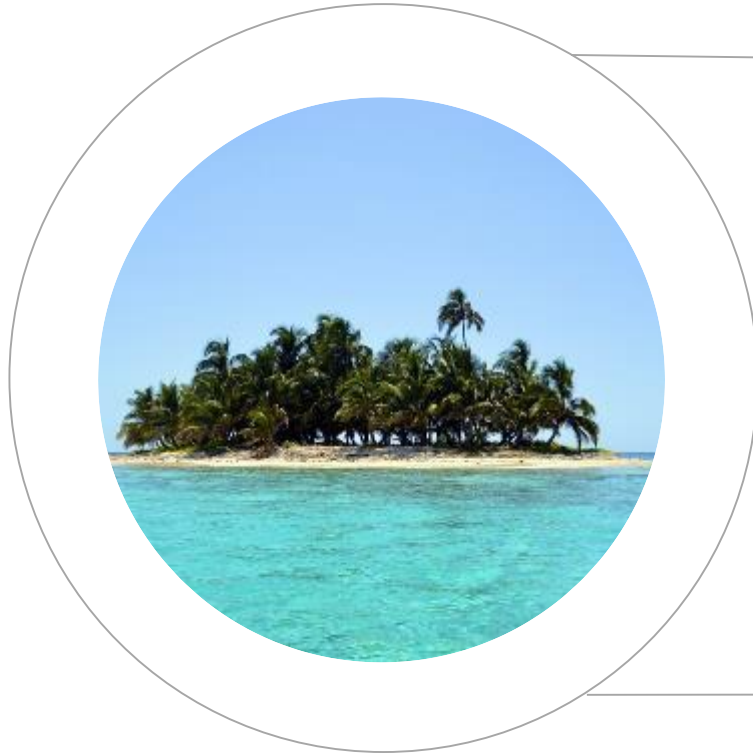
Ledgers
Ledgers designed for public network lack the performance, confidentiality, and governance capabilities needed for commercial use
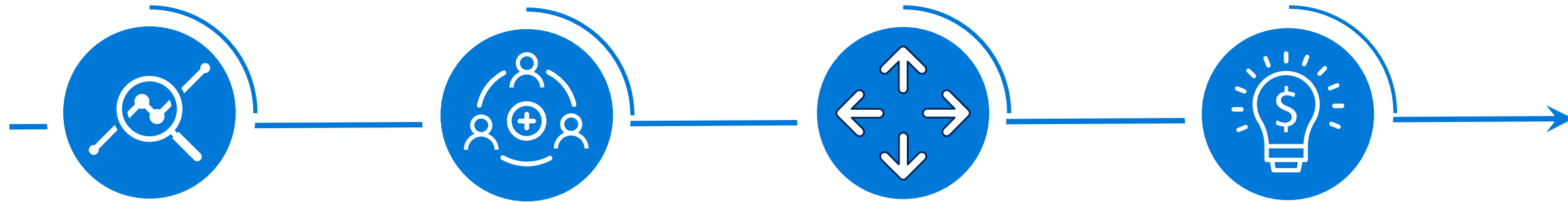
Smart Contracts
Smart contracts were not designed to leverage existing enterprise tools and skill sets

Integration
There are a number of challenges to integrate a blockchain with existing IT architecture

Microsoft is focused on Enteprise Blockchain...

Explore

Build

Extend

Transform

*The question
you'll answer*

Is blockchain right?

Where do I start?

How does this fit into my
business?

What can I do that wasn't
possible before?

*How Microsoft
can help*

The Azure Marketplace offers
a range of free tools and
templates to help you
experiment with blockchain

Microsoft App Builder's
simplified interface makes it
easier to create your proof of
concept

Enterprise Smart Contracts
integrates blockchain with
your existing infrastructure,
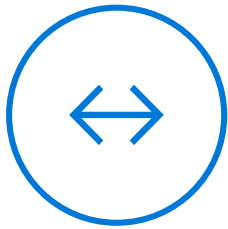apps, and workflows

Microsoft and blockchain
partners can help reshape
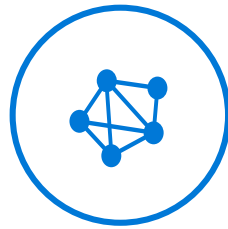the way you engage with
customers, suppliers, and
partners.

And Microsoft Azure empowers our customers

Flexible
blockchain on your terms

Quickly experiment with the blockchain that meets your business needs

Integrated
designed for extensibility

Start with what you have - any ledger, OS, data source, or cloud service - and connect to the apps you use today.

Powerful
to unlock enterprise workloads

Get off the drawing board into production more quickly; and grow your blockchain network with no artificial limitations

Durable
and build with confidence

Built on the enterprise foundation of Azure, on-premises and in the cloud, in 30 regions worldwide

Blockchain Usage Patterns

Usage Pattern: Manage Transactions

Leverage Blockchain to track, validate, manage, reconcile and audit transactions

Pattern	Examples
Peer to Peer Transactions Intercompany Payments Rewards Platform Consumer Banking Voting Platform Digital Wallet	Send P2P transactions without involvement of 3rd party application Payment Settlement between its subsidiaries Corporate reward program Voting tracking and reporting

Usage Pattern: Manage Assets

Leverage Blockchain to manage the life cycle of an asset. Asset can be a physical object, data etc.

Pattern	Examples
Asset Ownership, Movement, Settlement , History	Real time movement and tracking of assets. Allows for checking the history of the asset (Ex. Diamonds Anti Counterfeits for pharmaceutical products Land Registry and Records

Usage Pattern: Manage Identity

Leverage Blockchain to manage the Identity of people, organizations and devices.

Pattern	Examples
Know Your Customers Digital Identity IoT Devices Identity	Notarization services for e-residents Authenticate Internet of Things (IOT) Devices Time Stamped Photos

Usage Pattern: Manage Ownership

Leverage Blockchain to manage ownership Digital and Physical objects

| Pattern	Examples
IP Protection Academic Certificates State Records Reputation Management Media Content	Managing encrypted intellectual properties over the internet Deliver academic certificates over the internet Reputation Management

Usage Pattern: Manage Process

Leverage Blockchain to manage Business Processes

Pattern	Examples
Supply Chain Client Auditing Escrow Custodian Contract Management	Automate Client Auditing

Blockchain Business Patterns Showcase

TRADE FINANCE

KNOW YOUR CUSTOMER

B2B & B2C
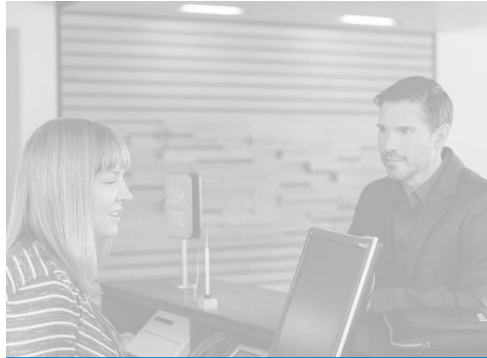
DIGITAL ASSET TRANSFER

SUPPLY CHAIN COLLABORATION

SUPPLY CHAIN FINANCING

GLOBAL PAYMENTS

REFRIGERATED TRANSPORTATION

FOOD PROVENANCE

Azure Blockchain-as-a-Service (BaaS)

Blockchain-as-a-Service (BaaS) | Vision

Micro-services | Ethereum APIs | Blockchain APIs | Crypto-services

Service Fabric

High Availability   Hybrid Operations   Data Partitioning   Health Monitoring   Container Orchestration & Lifecycle Management   Self-healing

Actor Programming Model   High Density   Rolling Upgrades   Low Latency

Hyper-Scaling   Automated Rollback   Stateful Services   Placement Constraints   Fast Startup & Shutdown   Load Balancing   Auto Replication & Failover

Windows Server / Linux — Azure

Windows Server / Linux — Private Cloud

Windows Server / Linux — Client Dev VM

Windows Server / Linux — Hosted Cloud
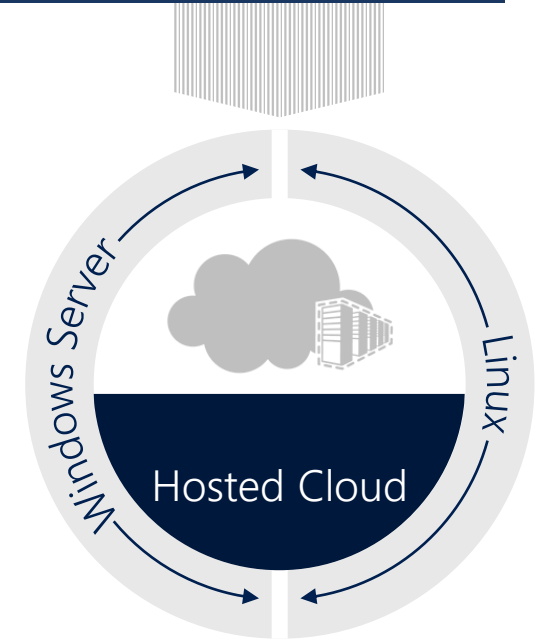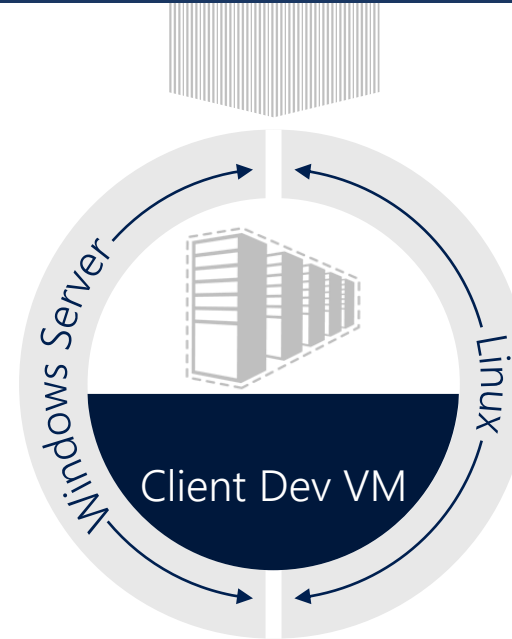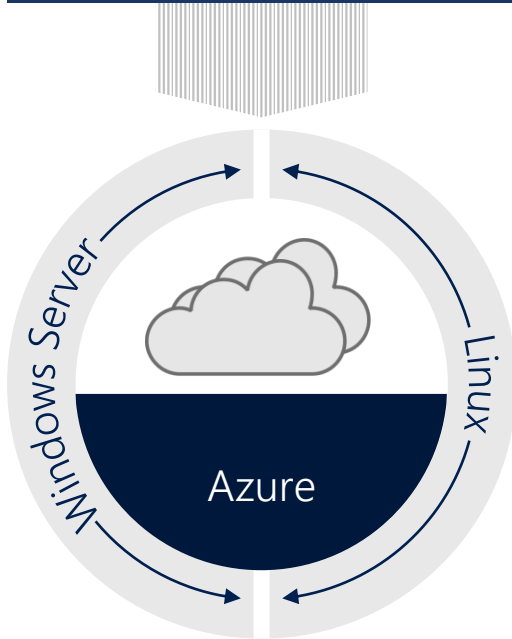
Azure Cloud | Regulatory Compliance

Microsoft cloud services have the largest compliance portfolio in the industry

Industry

| ISO 27001 | SOC 1 Type 2 | SOC 2 Type 2 | PCI DSS Level 1 | Cloud Controls Matrix | ISO 27018 | Content Delivery and Security Association | Shared Assessments |

United States

| FedRAMP JAB P-ATO | HIPAA / HITECH | FIPS 140-2 | 21 CFR Part 11 | FERPA | DISA Level 2 | CJIS | IRS 1075 | ITAR-ready | Section 508 VPAT |

Regional

| European Union Model Clauses | EU Safe Harbor | United Kingdom G-Cloud | China Multi Layer Protection Scheme | China GB 18030 | China CCCPPF | Singapore MTCS Level 3 | Australian Signals Directorate | New Zealand GCIO | Japan Financial Services | ENISA IAF |

Azure Cloud | BaaS Tech Partners

Microsoft BaaS has attracted 17 partners to for one of the Blockchain ecosystems in the industry.

Microsoft BaaS | Ecosystem

Depth Partners

- **R3** manages a consortium of 42+ FS institutions running labs to evaluate blockchain tech. & applicability.

- **R3-GCL** (Global Collaborative Labs) will make Azure the preferred cloud platform for dev. & testing of standards in financial services. Azure will be the exclusive commercial "public" partner with joint marketing, branding and press opportunities.

Azure Marketplace

A **modular distributed ledger platform** and a thriving marketplace of 1st and 3rd party blockchain services provided through Azure Marketplace would allow ISVs and enterprises to discover, develop, test and transact in a low-friction environment.

Breadth Partners

Scaling to meet the demand for consultative engagements and education of Microsoft customers will need to be addressed via partners. However, given that blockchain demand is largely being driven from business units and not IT, partners like **Accenture, KPMG, Deloitte and PWC**, will need to be relied upon.

Microsoft BaaS | Features

Fail Fast & Cheap in Azure Dev/Test/Prod environment

Mix & match from the **best** available Blockchain technology

Create private, public, permissioned & consortium Blockchain **quickly**

Expose solutions through **WW distributed platform**

Provision with **one-click**

Microsoft Azure | An Open Cloud

Hyper Scale

Enterprise Grade

Hybrid

We've delivered an open, broad, and flexible cloud across the stack

Azure BaaS

coinprism

Chain

bitpay · ETH BaaS Ethereum Blockchain as a Service

openchain · ripple · eris

NETKI · Libra · factom

MultiChain · Manifold Technology

Infrastructure

ubuntu · docker · CoreOS · SUSE · ORACLE LINUX · CentOS

+Hundreds of community supported images on VM Depot

Databases

DATASTAX · Hortonworks · Couchbase · MySQL · mongoDB · redis · SQL Server · cloudera · hadoop

App Frameworks

Microsoft .NET · Java · php · eclipse · python · Ruby · JS · IntelliJIDEA

Applications

CLOUD FOUNDRY · Drupal · SharePoint · Joomla! · Jelastic · WordPress · apprenda

Web App Gallery

Dozens of .NET & PHP CMS and Web apps

Management

JUJU · CHEF · puppet labs · ANSIBLE · GitHub · SALTSTACK

Clients

APACHE CORDOVA · Xamarin

Microsoft MNC Community Group

Microsoft Bizweek Group