Ethereum for Enterprise

Victor Wong - BlockApps

DevCon2

BlockApps | In a Nutshell

Solution

- Scalable Ethereum platform for rapid development, deployment and management of enterprise blockchain applications
- Designed for vertical and horizontal scaling (transaction volume and concurrent users) and developed in Haskell with proven reliability in financial institutions
- Instantly available through 1-click cloud deployment with enterprise friendly licensing
- Solves the blockchain transparency challenge for enterprises with a unique ability to create multichains while creating a favorable network effect of compounding the number of enterprise blockchain instances

Partners

ConsenSys, Deloitte., Microsoft Azure, redhat, ubuntu, Wancloud, Alibaba Cloud aliyun.com, 腾讯云

Customers

More than 130 Customers including

bhpbilliton, John Hancock, RWE, fidor BANK, UK Top 100 Asset Manager, Global Healthcare Company, Top 5 German Utility

Leadership

Victor **Wong**
CEO

Dr. James **Hormuzdiar**
CTO

Kieren **James-Lubin**
CPO

James **Slazas**
CFO

Andrew **Keys**
CMO

Joseph **Lubin**
Director

Where We Are in the Market

2016: Experiments and POCs

Our members are no longer interested in POCs.
They want to prototype real systems and push these into production ASAP.
We think we will see banks in production end of this year or early 2017.

Tim Grant , Head of R3 Labs

Two Core Enterprise Markets Today

Simplifying/Replacing Existing Business Processes

- Ethereum blockchain is a ‘natively’ distributed database
- Applications developed via Smart Contracts do not require explicit distributed database transaction semantics
- This simplifies data ingest, transformation, and aggregation
- Replaces existing database middleware, such as BPM, ETL, or file exchanges
- And provides the auditing/security features naturally incorporated into the Blockchain
- Perhaps larger than the Enterprise Blockchain App market today

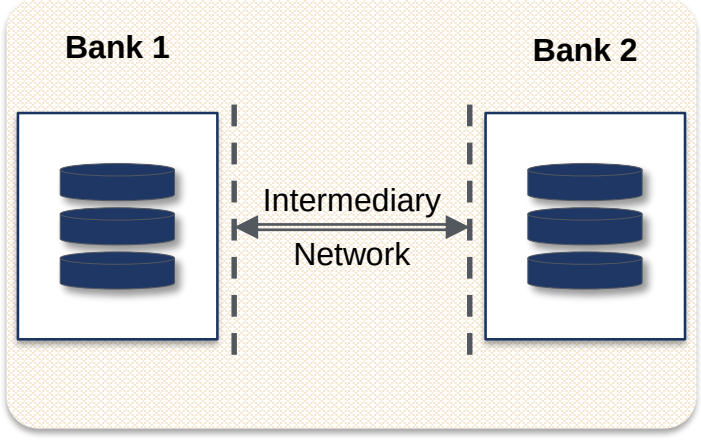
Building New Applications/ Platforms as Blockchain Apps

- Core use cases around provenance, beneficial ownership, settlement, etc.
- Less obvious use cases such as loyalty, KYC/AML, off-grid energy/market place models
- All have requirements for a distributed ledger
- Data is naturally distributed between parties
- Requires trusted, provable sharing (non-repudiation, auditing)
- Tokenizable representations of key assets/artifacts that can be exchanged
- Multiple large enterprise developing each of these systems

We are helping companies with two major classes of problems: enabling new applications to be built that are challenging with existing infrastructure and simplifying existing distributed database environments

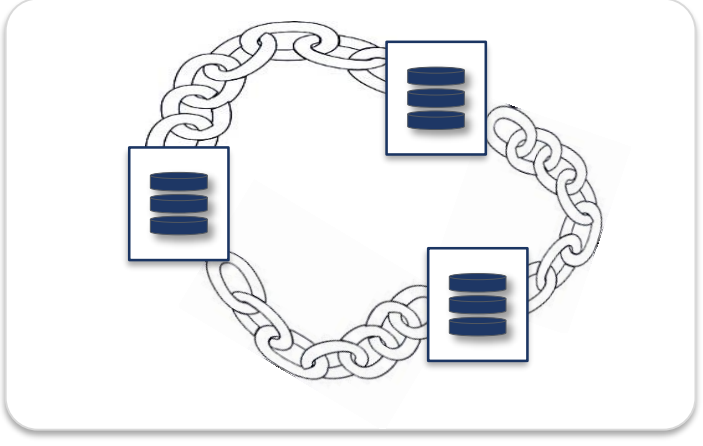
Blockchain: “Killer App” for Cloud in Financial Services

Barriers to Cloud Adoption in Financial Services…



- ✗ Legacy Infrastructure
- ✗ Security & Compliance
- ✗ Batch Process

…are addressed by Blockchain



- ✓ Legacy Replacement
- ✓ Cryptographically Secure
- ✓ Real-time

The first place we are seeing ‘mainstream’ IT adoption is in financial services.
The potential scope is typically far greater than just ‘blockchain’.

Blockchain Technology Landscape

ethereum

BlockApps CONSENSYS Microsoft

- General purpose blockchain technology, governed by a Foundation
- Supports tokenisation of any asset (not just cryptocurrencies)
- Transition to Proof-of-Stake consensus to suit private chain requirements
- Smart contracts are first class construct
- 1,000s of developers learning Ethereum globally

Bitcoin Derived

HYPERLEDGER IBM Digital Asset Holdings

Chain MultiChain Bankchain

- Single-use case, cryptocurrency origin, with limited distributed ledger capabilities
- ‘Rip the head off’ the Bitcoin code base and extend
- Has resulted in numerous implementations and fragmentation, lacking interoperable standards
- Hyperledger actively looking to Ethereum

Experiments

R BIGCHAINDB eris INDUSTRIES

- Typically solves a specific challenge or use-case
- E.g. BigChainDB – integrating blockchain constructs with NoSQL database
- Proprietary approaches limit developer appeal
- Outside of specific use cases, unlikely to appeal to large enterprises as a general purpose platform
- R3 already building on Ethereum

Ethereum is a general platform where you can solve problems in many industries — the most elegant solution we have seen to date - *Microsoft*

Ethereum | The Blockchain Technology of Choice for the Enterprise

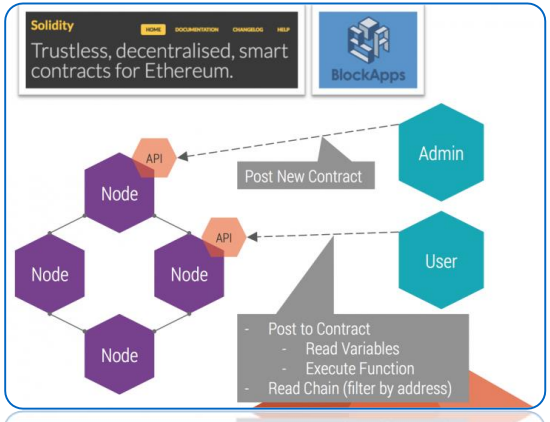
Microsoft	Ethereum added to Visual Studio (9m developers) following Azure BaaS ***Mar 30, 2016***
R	11 banks connected to distributed ledger using Ethereum ***Jan 20, 2016***
clearmatics	FX swaps built on Ethereum ***Apr 28, 2016***
UBS	Smart Bond—Built with Ethereum ***Sep 15, 2015***
redhat.	OpenShift—Announces Ethereum Support as first Blockhain offering ***Feb 26, 2016***

accenture	*We are likely to see Ethereum make traction quickly in financial services. There are already a large number of projects developing. Every self-respecting innovation lab is running and experimenting with it. Ethereum is in a strong position.*
FORRESTER®	*Blockchain technology is best described as a concept that involves a number of key components. Ethereum is of particular interest. With its Turing-complete programming language, we believe it is more suited to complex requirements.*
Gartner Ethereum 'Cool Vendor, 2015'	*Blockchain technology derived from the Bitcoin stack promises much in the era of digital business. Bank CIOs should evaluate distributed transaction banking services as an option they may need to survive in the new digital era*
EY	*Fast-emerging disruptive technologies such as blockchain and next generation iterations such as Ethereum are evolving rapidly. With continued investments in development, they are now building industrial strength platforms.*
Microsoft	*Ethereum is a general platform where you can solve problems in many industries — the most elegant solution we have seen to date.*

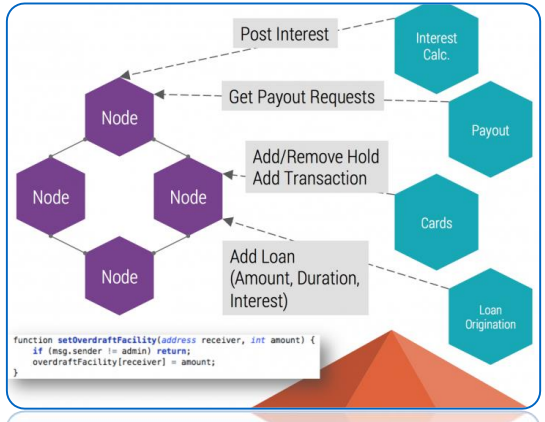
Every self-respecting innovation lab is running Ethereum - *Accenture*

Ethereum + BlockApps = Extreme Productivity + Proven Technology

Rethinking Core Banking with Ethereum

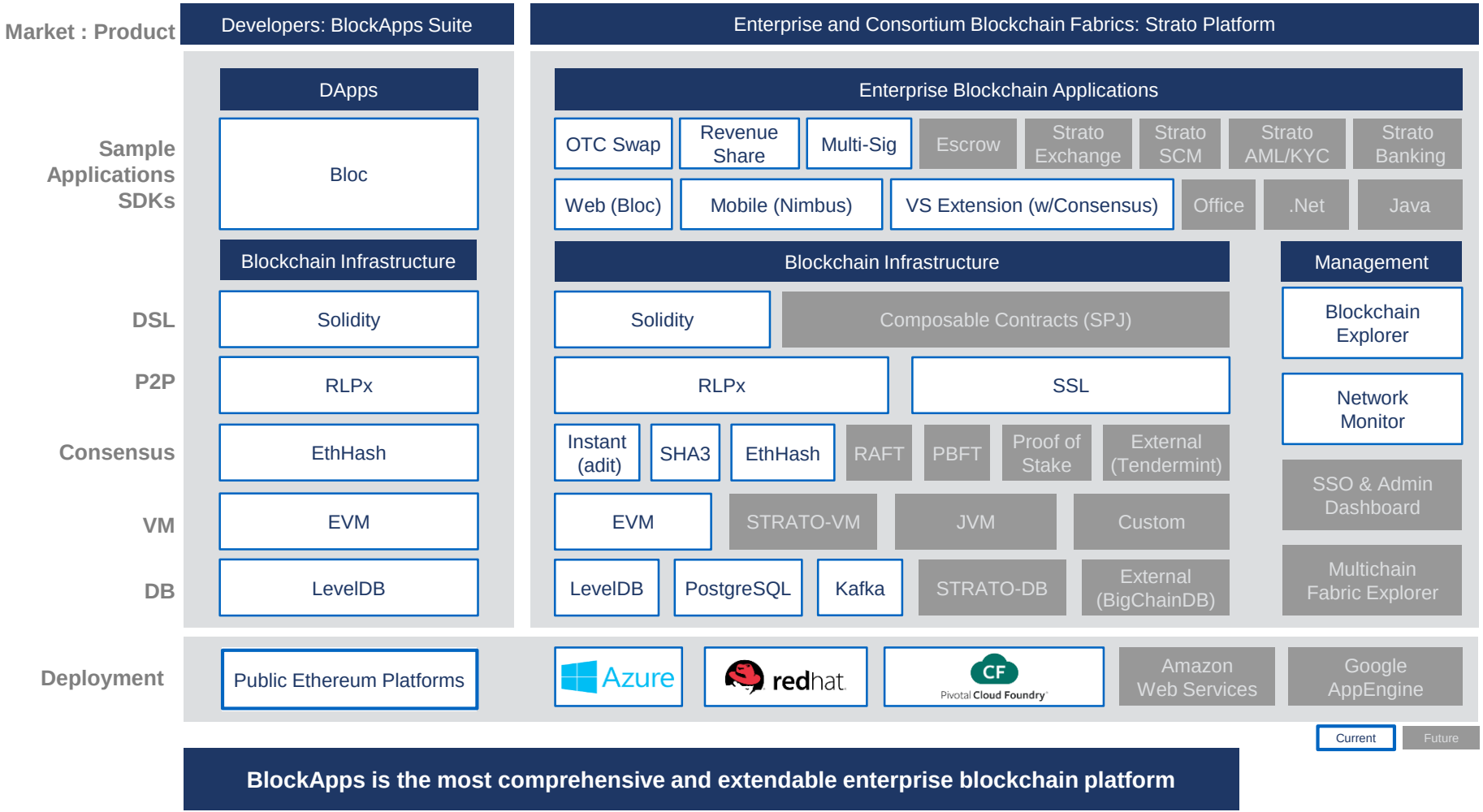


"Using Ethereum it was a very easy thing to do, it was 200 lines of code in [the Ethereum programming language] Solidity to write a model where it can really load up an account with fiat currency and send money between accounts"



"Ethereum is out there being used by a lot of people…
soon we can say this has been tested more than any core banking system"
Patrick Gruban, CIO, Fidor Bank

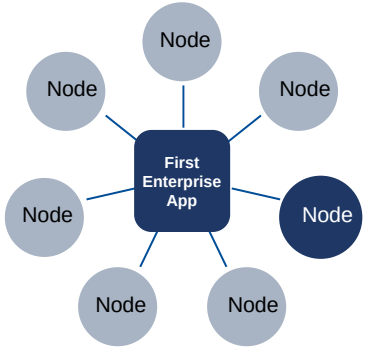
BlockApps | Extending Ethereum for Enterprise



BlockApps is the most comprehensive and extendable enterprise blockchain platform

BlockApps: Solving Data Privacy and Scaling with Multichain Fabrics

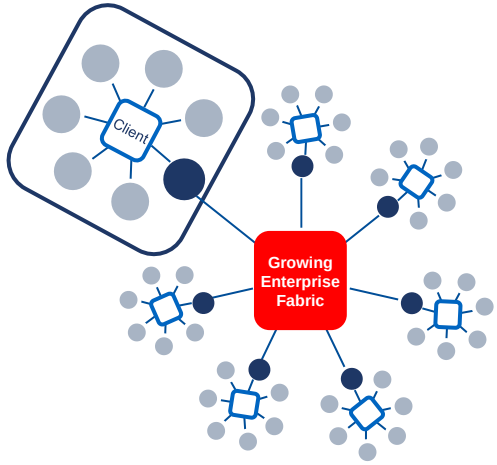
Enterprise Blockchain



- BlockApps as a database “replacement”, running in hybrid blockchain/client-server architecture

10-100 Nodes

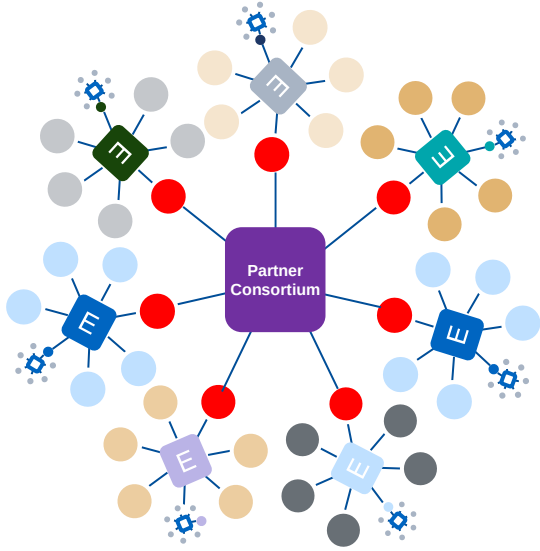
Enterprise Multichain Fabric



- BlockApps interconnected client-enterprise, running a fully distributed blockchain

1,000-10,000 Nodes

Consortia Constellation

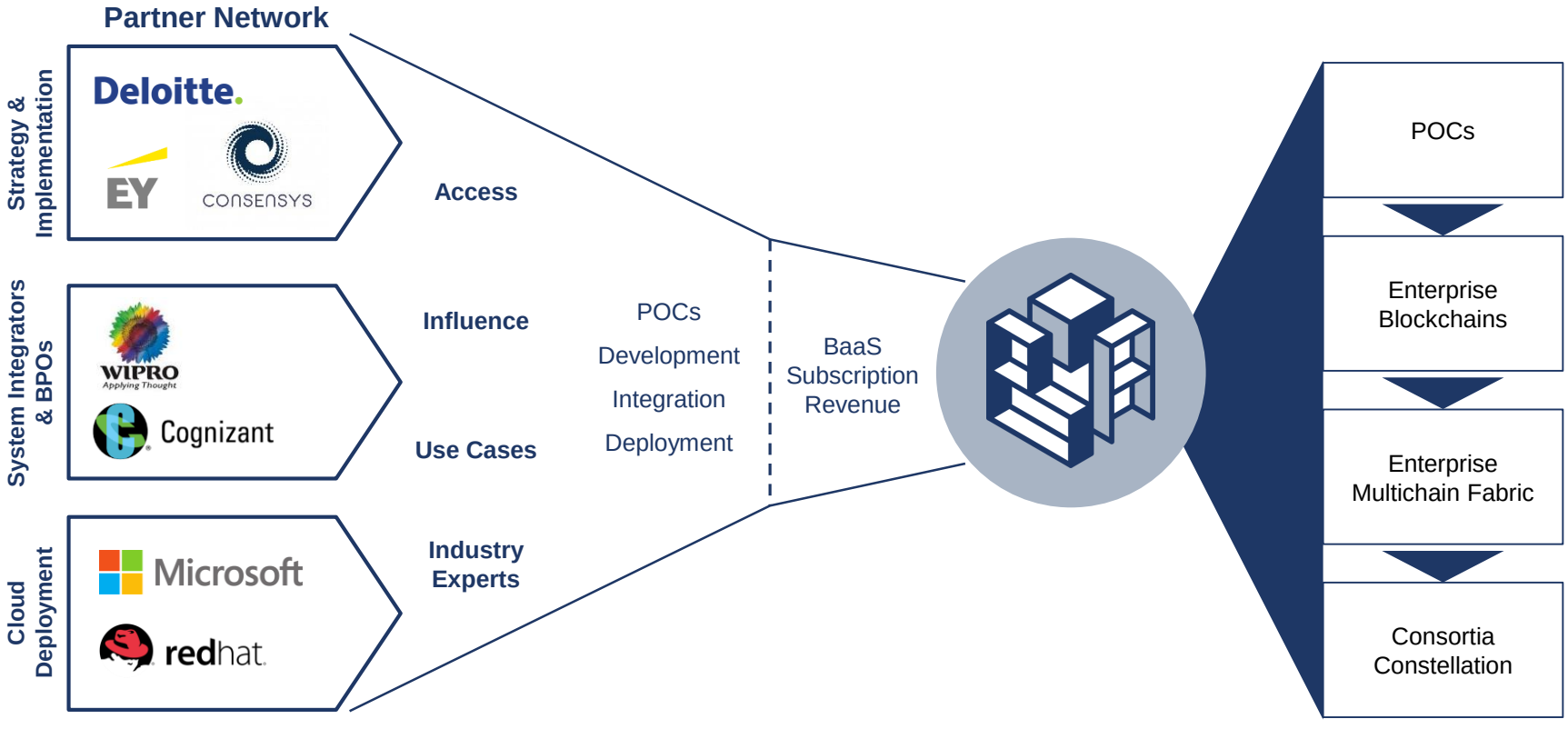


- BlockApps interconnected enterprises forming exchanges and consortia

100s of Thousands of Nodes

Blockchains have natural network effects, driven by distributed transaction networks
For enterprises, this means potential cost savings in the billions, due to improved efficiencies & disintermediation

BlockApps: Expanding the Ethereum Ecosystem with Partners



Blockchain is a C-level conversation in 2016.
Our partners are leveraging BlockApps as their 'blockchain strategy in a box' and taking us in at the highest levels.

BlockApps: Bringing Ethereum to Enterprise

1 Enterprise Architecture
A targeted product suite

Built on proven Reliability and Scalability of Haskell

- Haskell is used by banks and financial institutions (E.g. Standard Chartered, JPMorgan and Bank of America)
- Haskell is used by Facebook's spam filter to analyze messages from 1.5+ billion people

Built for Enterprise APIs

- The REST API approach simplifies enterprise application development and hides complexity from developers

Modular design for Enterprise Flexibility

- The design approach allows to simplify, optimize and future-proof enterprise private and consortium chains as underlying technology evolves (E.g. configurable consensus algorithms)

Enterprise Friendly Licensing

- Our licensing model is geared to allow worry free use and extensibility needed for enterprises (unlike GPL/Copyleft licenses that are very restrictive for enterprise use)

2 BaaS Model
with network effects

Blockchain as a Service (BaaS)

- Removes the barrier to blockchain adoption by providing enterprises a quick and easy way to embark on blockchain technology

Network Effect

- The BlockApps multichain approach solves the blockchain transparency and scalability challenge for enterprises while creating a favorable network effect compounding the number of enterprise blockchain instances

Viral Growth Effect

- The BlockApps multichain approach also creates a viral growth effect, as enterprise actors on existing blockchains become candidates to be enterprise clients of BlockApps

3 Partnerships
provides wide enterprises access

Strategy Partners

- Our relationships with leading Strategy Consulting firms (E.g. BCG) allow us to gain early access and inroads in the enterprise transformation journey

Implementation Partners

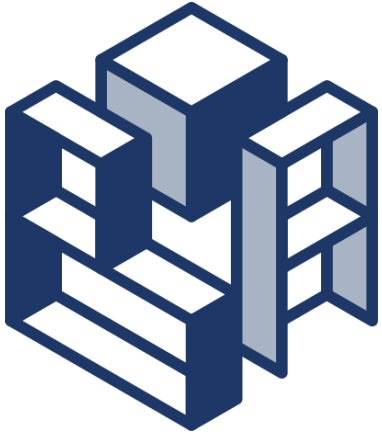
- Our current and growing strategic relationships with Big-4 (E.g. Deloitte, EY) and other management consulting firms provides access and influence on enterprise blockchain initiatives

BPO and Delivery Partners

- Our existing relationships with large BPOs (E.g.Cognizant, Wipro) expands our reach and delivery capability to a broader enterprise audience

Cloud Deployment Partners

- Our current deployment partners include Microsoft, Red Hat, Pivotal and Ubuntu with more to follow.



Victor Wong

victor@blockapps.net