bluzelle

A DECENTRALIZED, ON-DEMAND,
SCALABLE DATABASE SERVICE.

OUR HISTORY

Starting in 2014, Bluzelle Networks has been providing a suite of Blockchain technologies to enterprise customers throughout the world. In the past 18 months our technologies have been deployed to multiple uses and applications:

- An Ethereum-based KYC Shared Ledger for a consortium of international banks
- An Ethereum-based insurance platform for major Asian insurer
- An Ethereum-based consumer mobile personal injury insurance product for a global insurer
- A Ripple-based cross border payments POC for Temenos - a world-leading core banking system
- KPMG, Microsoft, British Telecom and Happiest Minds channel partnerships

Bluzelle Networks was named by the World Economic Forum as a Technology Pioneer for 2017. Previous winners include Google, Spotify, Twitter, AirBnB amongst others. Bluzelle also made the Global Fintech 100 by H2 Ventures.

Identifying a problem from our enterprise customers, Bluzelle saw the need for a decentralized database service that will be used by all software developers and enterprise architects.

WEF TECH PIONEER 2017

GLOBAL FINTECH 100

KPMG
Microsoft
BT
TEMENOS
The Banking Software Company
ethereum
ripple

THE DECENTRALIZED INTERNET ECOSYSTEM

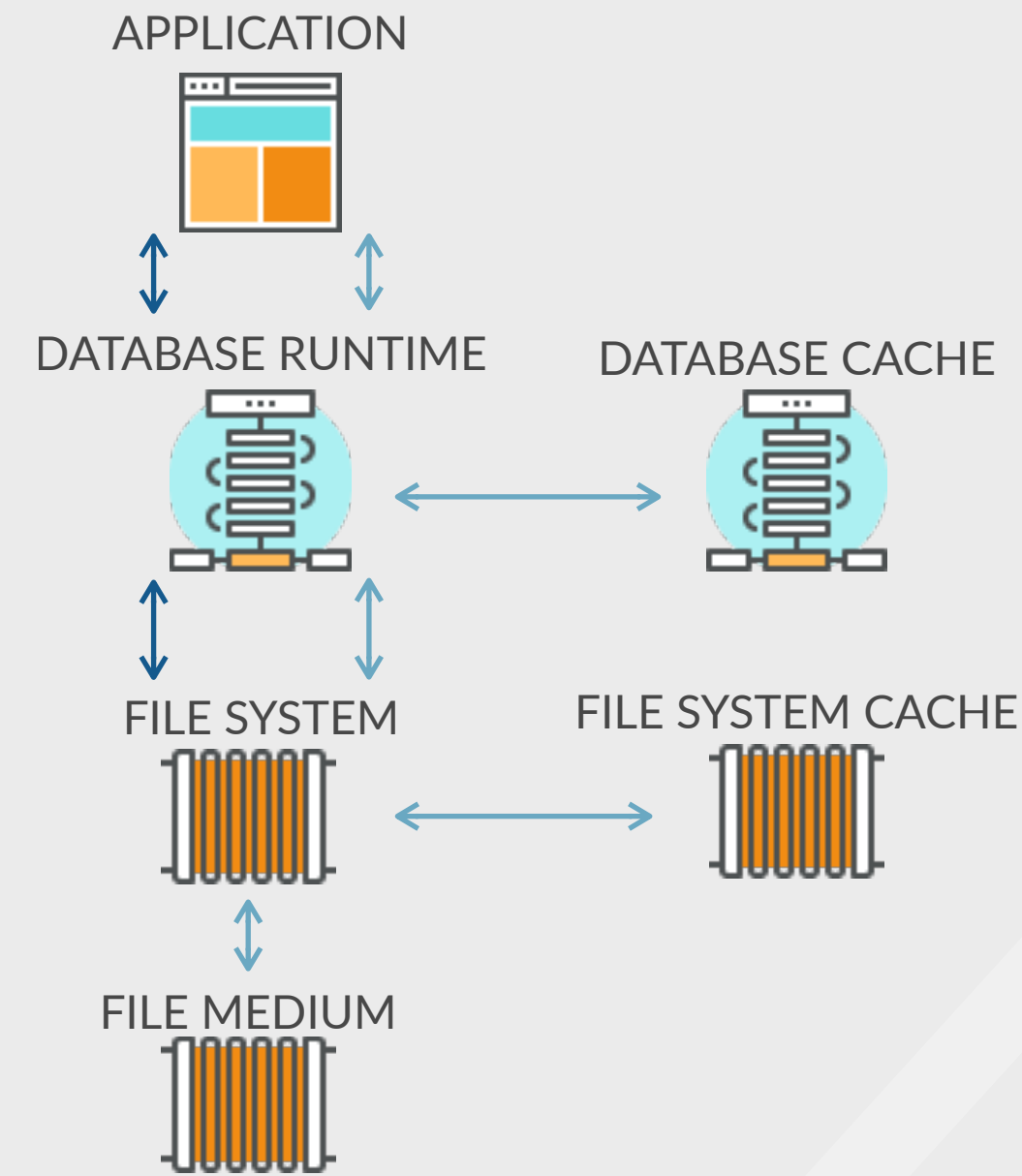|		
01 **APPLICATIONS**	Status	The WeChat of the New Internet
02 **OPERATING SYSTEM**	ethereum	The MS Windows of the New Internet
03 **FILE STORAGE**	Filecoin	The AWS S3 of the New Internet
04 **DATA STORAGE & MANAGEMENT**	bluzelle	The Oracle of the New Internet

THE NEW INTERNET WILL BE DECENTRALIZED

Blockchain technologies are propelling the next generation of the Internet - known as the Internet of Value. In the current Internet, the technologies are centralized which leads to extensive challenges in security, scalability, and privacy. In the blockchain powered New Internet, everything from applications to back-end platforms to file storage to data storage & management are decentralized. Without these decentralized components, the New Internet would not be able to run efficiently and scale to massive use.

Bluzelle plays a critical role in the building of the New Decentralized Internet.
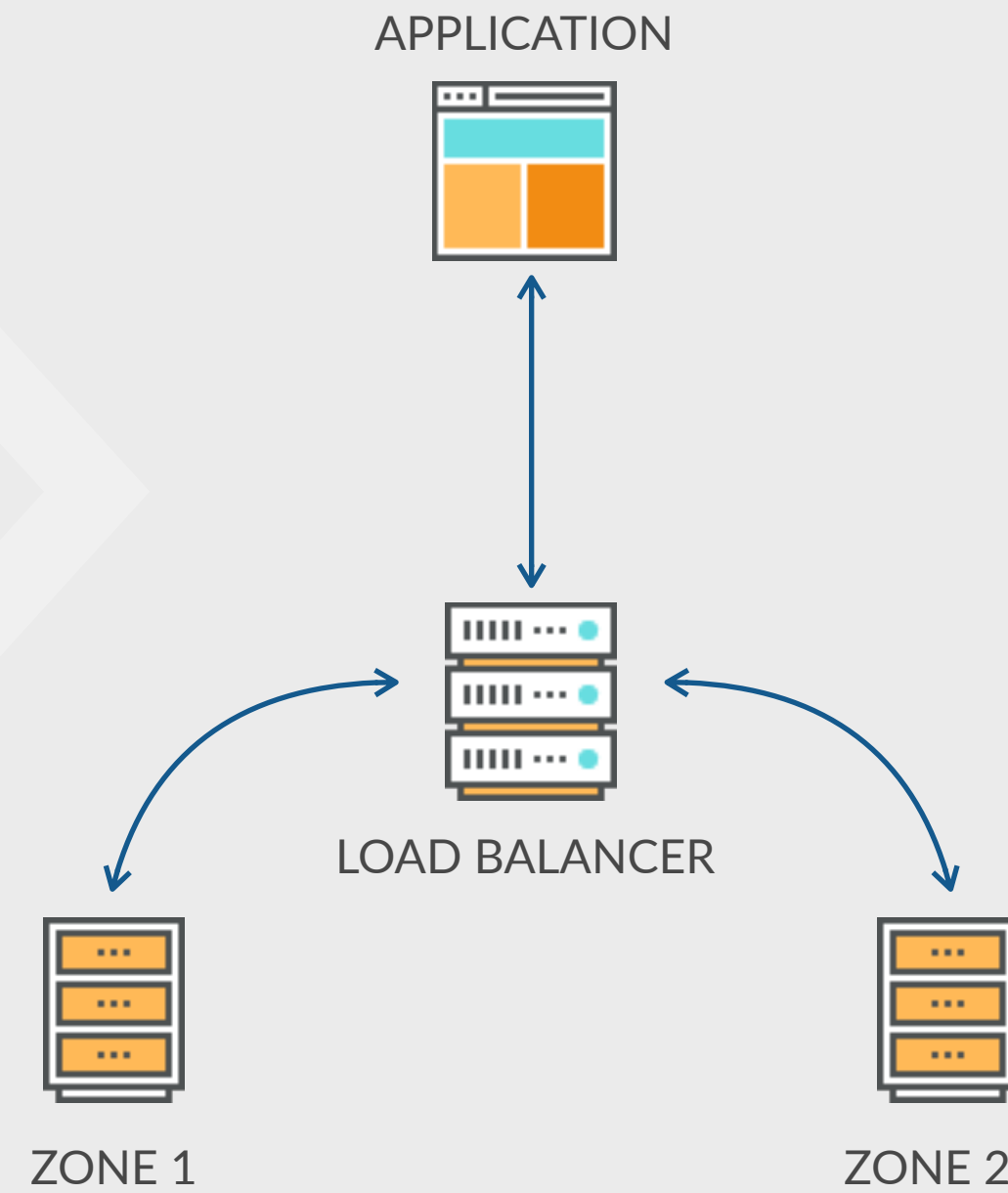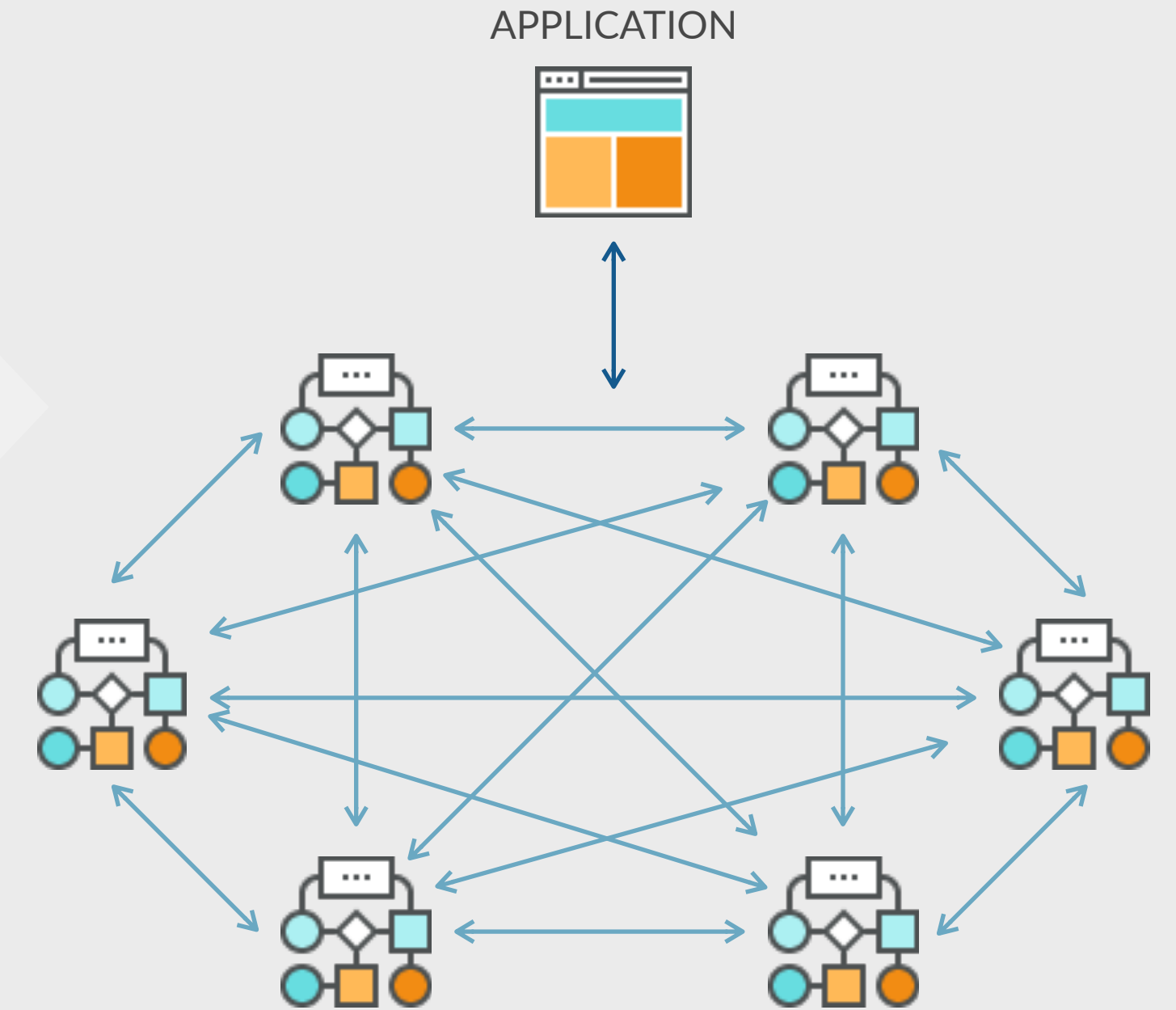
PAST
Single System Model

PRESENT
Cloud Centralized Model

FUTURE
Bluzelle Decentralized Model

APPLICATION

DATABASE RUNTIME   DATABASE CACHE

FILE SYSTEM   FILE SYSTEM CACHE

FILE MEDIUM

APPLICATION

LOAD BALANCER

ZONE 1   ZONE 2

APPLICATION
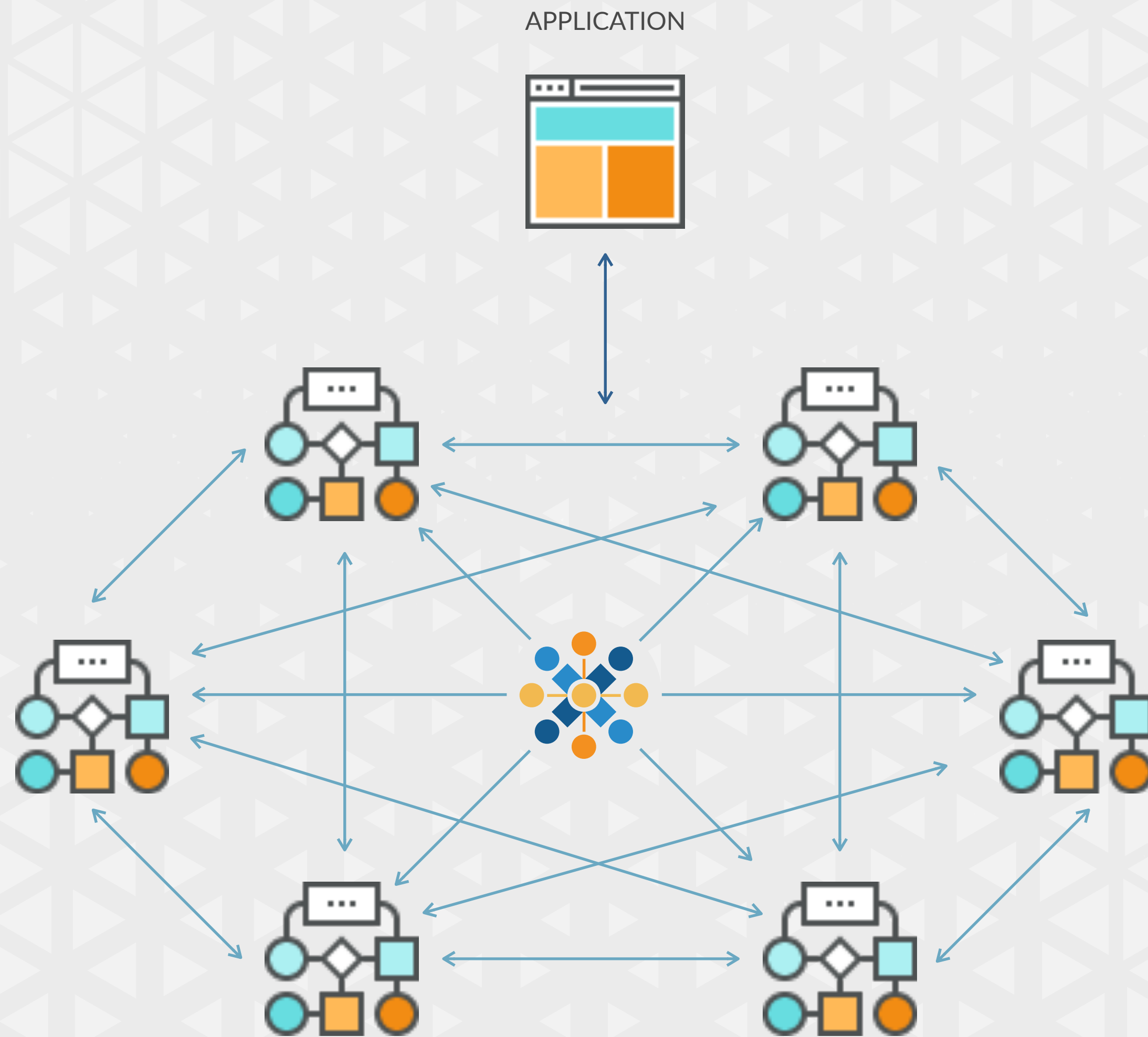
BLUZELLE IS THE AIRBNB OF DATABASES

Bluzelle uses idle computer hardware by incentivizing people to rent out their resources to create a decentralized crypto-economic database network.

Bluzelle is a decentralized service that provides on-demand, scalable databases. It is for software developers who are dissatisfied with the costs, limited scalability, and complexity of existing database systems. Bluzelle is low-cost, quick to deploy, provides high performance, and has a solid scalability path. Bluzelle provides enterprise-grade database services at a price for all Decentralized Application (DApps) developers.
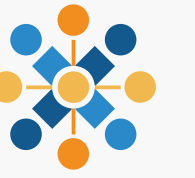
APPLICATION

HOW DOES BLUZELLE WORK?

The producers (aka farmers) provide resources in the form of CPU processing power, memory, permanent storage, and network connectivity to enable database shards to be stored with sufficient replication to guarantee availability and redundancy. Producers demonstrate they successfully stored data by responding to Bluzelle's "proof of storage" and "proof of redundancy" challenges, and upon a successful challenge, are rewarded with Bluzelle Tokens (BLZ).

The consumers (software developers) use Bluzelle's database services provided by the collective of producers, and in turn pay for these services using BLZ. They have control over attributes that dictate how and where their data is shared and stored, that will affect the BLZ cost for these services.

WHAT PROBLEMS
DOES BLUZELLE SOLVE?

01
PERFORMANCE

Traditional database services are subject to slowdowns, breakdowns, and bottlenecks.

02
RELIABILITY

Traditional data storage providers are susceptible to hardware fails or breaches where the data may be destroyed or become inaccessible.

03
SCALABILITY

With traditional data storage providers there are significant capital expenditures of effort, time, and cost, which means achieving scale is a long, painful, and high-friction activity.

*It takes enormous time, effort, and coordination to provision new databases today because of a lack of resources to meet the administration challenges of rolling out complex clustered systems." **Forrester Research, 2017***

WHAT ARE BLUZELLE'S FEATURES?

FEATURE	DESCRIPTION
Guranteed Privacy	Bluzelle employs cryptography and sharding techniques to provide a privacy guarantee.
High Reliability	Bluzelle redundantly stores tiny pieces of data on nodes across the globe, eliminating any single point of failure.
Enterprise Scalability	Bluzelle stores data in a unique, distributed and intelligent manner that is able to provide enterprise-level scalability.
Data Immutability	Bluzelle leverages blockchain technology so that once data is stored to such a network, it is impossible to change that data.
High Performance Speeds	Bluzelle dynamically adjusts the number and location of nodes sharding the consumer's data to meet performance metrics.
No Hackers	Bluzelle's use of consensus is the only method by which updates to the network can be accepted as the "truth" - making the data hack-proof
Low Cost	Bluzelle operates no data centers as all computer resources are provided by network producers who earn funds and pass the savings to consumers.

WHO DOES BLUZELLE TARGET?

Target Market
Software developers and enterprise software architects

Early Adopters
Small to mid size software developers

Initial market
Fintech startups in Asia Pacific

Bluzelle's headquarters are in Asia Pacific. This region is home to a fast growing startup community that targets the financial sector - one of the biggest users of database services. These startups require efficient and low-cost services. Many parts of Southeast Asia are rapidly developing as major cities and high-growth economies. They are leapfrogging legacy client-server architecture systems to innovative adaptive and scalable solutions built for the future.

"Asia Pacific is anticipated to aggressively adopt cloud database and DBaaS solutions in the near future. This is basically due to the increasing focus by small, medium, and large scale enterprises for the purpose of improving efficiency and productivity via investment in technology." – *TMR Research Cloud Database and Database as a Service (DBaaS) Market, 2017-2025*

ASIA PACIFIC

MARKETING & DISTRIBUTION

To reach software developers we will integrate into multiple distribution points.

ONLINE CHANNELS

AWS, Google App Engine, Heroku, MS Azure

DEPLOY TO BLOCKCHAINS

Ex. Ethereum, Quorum

DEVELOPER COMMUNITY

Hackathons, Meetups

DEVELOPER ENVIRONMENTS

Android Studio, Apple Xcode, MS Xamarin, Unity 3D

BROWSER PLUGINS

Chrome, Safari, Firefox

Image source: https://www.behance.net/romaintrystram

TECHNOLOGY HIGHLIGHTS

Bluzelle implements three technology innovations that combine elements of blockchain and database infrastructure.

SWARMING

A collection of computers that all duplicate the same data so that it is 100% available, irrespective of what computers in the swarm are alive. Combining millions of swarms dynamically enables Bluzelle to store massive amounts of data across millions of computers ensuring reliability couple with high scalability
and performance.

2D PARTITIONING

Databases can be partitioned horizontally, splitting up entire tables by rows and storing these rows in geographically strategic places with replication. Databases can also be partitioned vertically, splitting up entire tables by columns and storing the columns strategically instead. Bluzelle executes two-dimensional partitioning, breaking up tables by row and column, bringing the best of both worlds together for maximum performance.

CONSENSUS

Every swarm needs to be able to (1) agree on the value of data stored in that swarm, (2) ensure the data is protected from tampering, faults and attacks. Swarms need to agree amongst each other regarding system-wide operational data that is vital to operations, and all protected from faults and attacks. Bluzelle's unique consensus model ensures multi-level consensus at both the swarm and the meta-swarm levels.

BLUZELLE'S ROADMAP

MINIMUM VIABLE PRODUCT

APRIL 2018

FEATURES
NoSQL key-value pairs, Bluzelle Harvesting Agent, leaf swarms, consensus, horizontal partitioning, consistent hashing, CRUD API, Bluzelle tokenization, ERC-20 token gateway, versioning and backup/restore, dynasty keys

KEPLER

AUGUST 2018

FEATURES
PaaS integrations, IDE plugins and integrations, blockchain smart contracts, desktop and browser and mobile apps for interactive access, import/export from legacy databases, node scoring and health metrics

EINSTEIN

DECEMBER 2018

FEATURES
NoSQL documents, NoSQL document collections, NoSQL document collection indices, NoSQL document collection partitions, global CRUD operations, batch CRUD operations

LEIBNIZ

APRIL 2019

FEATURES
Proof of storage Merkel challenges and rewards, proof of stake requirement for farmers, variable CRUD request pricing, edge caching of data close to requests, request parallelism and hotspot support, Spartacus attack tolerance

ARCHIMEDES

AUGUST 2019

FEATURES
Vertical partitioning, 2D partitioning, variable-cost data expiries, Sybil attack tolerance, deletion reversibility, proof of redundancy via erasure coding

TURING

DECEMBER 2019

FEATURES
Column stores, S/Kademlia improvements, Honest Geppetto attack tolerance, 3rd party arbitration against Cheating Owner attacks, reverse http tunnelling, tunnel eclipse attack tolerance, multiparty encryption, complex binary blob storage support

WE HAVE A HISTORY OF DELIVERING BLOCKCHAIN PROJECTS

SMART INSURANCE

Customer:
Large global insurer

Solution:
Ethereum-based POC platform to allow millennials to buy insurance via mobile, find an authentic clinic, get treatment, and be reimbursed quickly.

Innovation:
An authenticated network of doctors, insurance providers and payment systems to enable real-time claims management.

CROSS BORDER PAYMENTS

Customer:
Temenos

Solution:
Ripple-based POC cross-border payment network to offer as a value add to their customers.

Innovation:
End-to-end verification of senders and receivers creating an inherent system of trust

KYC SHARED LEDGER

Customer:
Group of international banks in Asia

Solution:
Ethereum-based POC that allows banks to onboard both retail and corporate customers and share credentials with one another.

Innovation:
Source of truth about customers that has an audit trail, secure and synced up with everyone which

ABOUT US

MANAGEMENT & TEAM

Experienced CEO and CTO built other start-ups, and worked in Silicon Valley. A current team of 8 experienced in:

- Blockchain
- Artificial intelligence,
- Machine learning,
- Cybersecurity
- Financial technologies
- Cognitive science

PAVEL BAINS
CHIEF EXECUTIVE OFFICER

Pavel has over 15 years experience in operational management, digital technology and finance. An NCAA honor roll student-athlete from UCLA, Pavel also was the co-founder of Storypanda, a digital book platform that published critically acclaimed titles by DreamWorks, Warner Bros, Peanuts and more. Pavel was in GM and CFO roles for video game studios, including looking after 7 Disney studios across four continents and 350 people and $150M budgets.

NEERAJ MURARKA
CHIEF TECHNOLOGY OFFICER

Neeraj is an engineer and computer systems architect with over 20 years experience. He has worked for Google, IBM, Hewlett Packard, Lufthansa, Thales Avionics. Projects include: locking down of modified Android OS for retail markets; multicast UDP satellite-based systems, design and development of secure and FFA-approved systems for Airbus and Boeing. Neeraj was the fourth employee of acquired blockchain startup, Zero Block.

Bluzelle is backed by group of international VCs specializing in blockchain, AI, fintech and infrastructure tech.

GLOBAL BRAIN
(JAPAN)

GB has invested in 100+ companies, with 9 IPOs and 27 M&As exits. GB's capitalists are all ex-business officers, engineers or entrepreneurs, including Singapore office representative, Hisashi Suzuki, a founder of Square Enix which produced Final Fantasy. Mr Suzuki can help target developer.

TRUE GLOBAL VENTURES
(EUROPE/SINGAPORE)

With 40 partners around the world, TGVs operates in Hong Kong, Singapore, New York, San Francisco, Stockholm, Paris, London and more. The Managing Director was named Europe's Angel of the Year in 2013.

LUN PARTNERS
(CHINA)

Shanghai based investment management group that operates multiple investment vehicles, including venture capital and private equity funds.

KENETIC CAPITAL
(HONG KONG)

A Venture Capital and Advisory Firm that has been focused on blockchain investments in Asia and the US. Worked on OpenANX, 0x and Melonport.

CONTACT US TO LEARN MORE

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